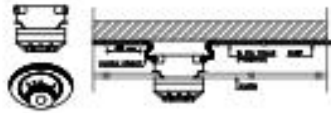


LAMPIRAN

DAFTAR GAMBAR ELEKTRONIK

NO.GAMBAR	NO.LEMBAR	JUDUL GAMBAR	SKALA
EC-DG		DAFTAR GAMBAR ELEKTRONIK	
		FIRE ALARM	
EL-FA	1	DIGRAM SKEMATIK FIRE ALARM	NIS
EL-FA	2	RENCANA FIRE ALARM LANTAI GROUND FLOOR	1:250
EL-FA	3	RENCANA FIRE ALARM LANTAI 1	1:250
EL-FA	4	RENCANA FIRE ALARM LANTAI 2	1:250
EL-FA	5	RENCANA FIRE ALARM LANTAI 3	1:250
EL-FA	6	RENCANA FIRE ALARM LANTAI 4	1:250
EL-FA	7	RENCANA FIRE ALARM LANTAI 5	1:250
EL-FA	8	RENCANA FIRE ALARM LANTAI 6	1:250
EL-FA	9	RENCANA FIRE ALARM LANTAI 7	1:250
EL-FA	10	RENCANA FIRE ALARM LANTAI 8	1:250
EL-FA	11	STANDAR DETIL FIRE ALARM	NIS
		SOUND SYSTEM	
EL-SS	1	DIGRAM SKEMATIK SOUND SYSTEM	NIS
EL-SS	2	RENCANA SOUND SYSTEM LANTAI GROUND FLOOR	1:250
EL-SS	3	RENCANA SOUND SYSTEM LANTAI 1	1:250
EL-SS	4	RENCANA SOUND SYSTEM LANTAI 2	1:250
EL-SS	5	RENCANA SOUND SYSTEM LANTAI 3	1:250
EL-SS	6	RENCANA SOUND SYSTEM LANTAI 4	1:250
EL-SS	7	RENCANA SOUND SYSTEM LANTAI 5	1:250
EL-SS	8	RENCANA SOUND SYSTEM LANTAI 6	1:250
EL-SS	9	RENCANA SOUND SYSTEM LANTAI 7	1:250
EL-SS	10	RENCANA SOUND SYSTEM LANTAI 8	1:250
EL-SS	11	RENCANA SOUND SYSTEM RUANG AUDITORIUM	NIS
EL-SS	12	STANDAR DETIL SOUND SYSTEM	NIS
		TELEPON	
EL-TELP	1	DIGRAM SKEMATIK TELEPON	NIS
EL-TELP	2	RENCANA TELEPON LANTAI GROUND FLOOR	1:250
EL-TELP	3	RENCANA TELEPON LANTAI 1	1:250
EL-TELP	4	RENCANA TELEPON LANTAI 2	1:250
EL-TELP	5	RENCANA TELEPON LANTAI 3	1:250
EL-TELP	6	RENCANA TELEPON LANTAI 4	1:250
EL-TELP	7	RENCANA TELEPON LANTAI 5	1:250
EL-TELP	8	RENCANA TELEPON LANTAI 6	1:250
EL-TELP	9	RENCANA TELEPON LANTAI 7	1:250
EL-TELP	10	RENCANA TELEPON LANTAI 8	1:250
EL-TELP	11	STANDAR DETIL TELEPON	NIS
		DATA & WIFI	
EL-DATA	1	DIGRAM SKEMATIK DATA & WIFI	NIS
EL-DATA	2	RENCANA DATA & WIFI LANTAI GROUND FLOOR	1:250
EL-DATA	3	RENCANA DATA & WIFI LANTAI 1	1:250

EL-DATA	4	RENCANA DATA & WIFI LANTAI 2	1:250
EL-DATA	5	RENCANA DATA & WIFI LANTAI 3	1:250
EL-DATA	6	RENCANA DATA & WIFI LANTAI 4	1:250
EL-DATA	7	RENCANA DATA & WIFI LANTAI 5	1:250
EL-DATA	8	RENCANA DATA & WIFI LANTAI 6	1:250
EL-DATA	9	RENCANA DATA & WIFI LANTAI 7	1:250
EL-DATA	10	RENCANA DATA & WIFI LANTAI 8	1:250
EL-DATA	11	STANDAR DETIL DATA & WIFI	NIS
		MKTV	
EL-MKTV	1	DIGRAM SKEMATIK MKTV	NIS
EL-MKTV	2	RENCANA MKTV LANTAI GROUND FLOOR	1:250
EL-MKTV	3	RENCANA MKTV LANTAI 1	1:250
EL-MKTV	4	RENCANA MKTV LANTAI 2	1:250
EL-MKTV	5	RENCANA MKTV LANTAI 3	1:250
EL-MKTV	6	RENCANA MKTV LANTAI 4	1:250
EL-MKTV	7	RENCANA MKTV LANTAI 5	1:250
EL-MKTV	8	RENCANA MKTV LANTAI 6	1:250
EL-MKTV	9	RENCANA MKTV LANTAI 7	1:250
EL-MKTV	10	RENCANA MKTV LANTAI 8	1:250
		CCTV	
EL-CCTV	1	DIGRAM SKEMATIK CCTV	NIS
EL-CCTV	2	RENCANA CCTV LANTAI GROUND FLOOR	1:250
EL-CCTV	3	RENCANA CCTV LANTAI 1	1:250
EL-CCTV	4	RENCANA CCTV LANTAI 2	1:250
EL-CCTV	5	RENCANA CCTV LANTAI 3	1:250
EL-CCTV	6	RENCANA CCTV LANTAI 4	1:250
EL-CCTV	7	RENCANA CCTV LANTAI 5	1:250
EL-CCTV	8	RENCANA CCTV LANTAI 6	1:250
EL-CCTV	9	RENCANA CCTV LANTAI 7	1:250
EL-CCTV	10	RENCANA CCTV LANTAI 8	1:250
EL-CCTV	12	STANDAR DETIL CCTV	NIS
		NURSE CALL	
EL-NC	1	DIGRAM SKEMATIK NURSE CALL	NIS
EL-NC	2	RENCANA NURSE CALL LANTAI 3	1:250
EL-NC	3	RENCANA NURSE CALL LANTAI 4	1:250
EL-NC	4	RENCANA NURSE CALL LANTAI 5	1:250
EL-NC	5	RENCANA NURSE CALL LANTAI 6	1:250
EL-NC	6	RENCANA NURSE CALL LANTAI 7	1:250
EL-NC	7	STANDAR DETIL NURSE CALL	NIS



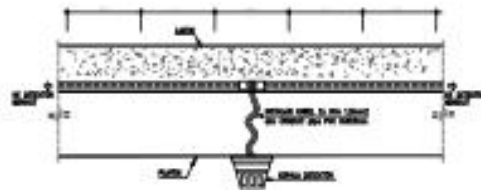
ROR HEAT DETECTOR DETAIL
SKALA : 1/20



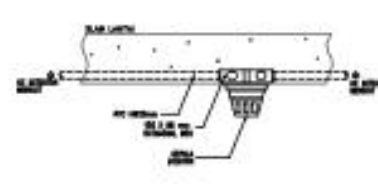
FIBED HEAT DETECTOR DETAIL
SKALA : 1/20



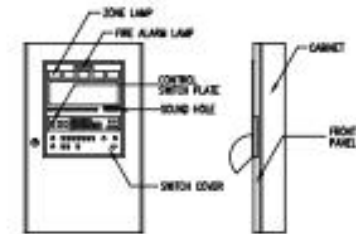
SMOKE DETECTOR DETAIL
SKALA : 1/20



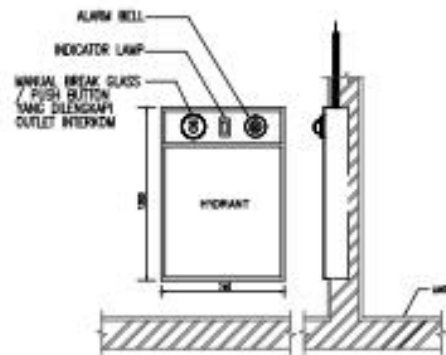
DETAIL INSTALASI FIRE ALARM PADA PLASTER
SKALA : 1/20



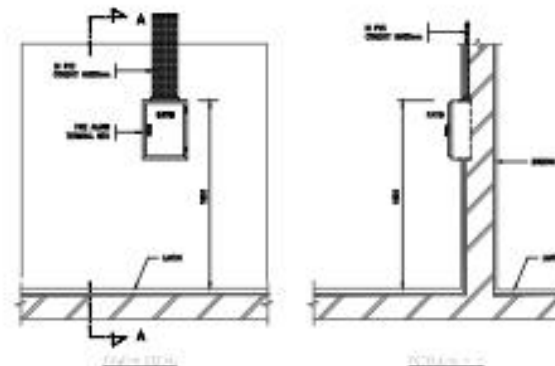
DETAIL INSTALASI FIRE ALARM PADA PLAT BETON
SKALA : 1/20



DETAIL MCPA (MASTER CONTROL PANEL-FIRE ALARM)
SKALA : 1/20



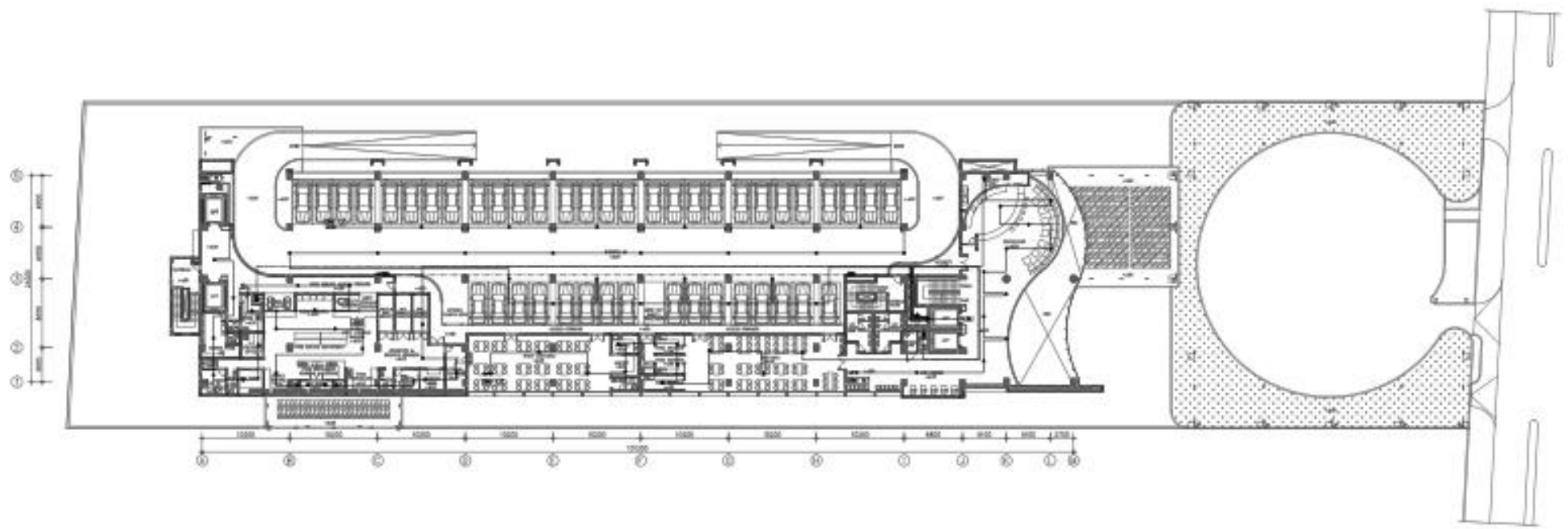
DETAIL INSTALASI MANUAL STATION DI HYDRANT BCK
SKALA : 1/20



DETAIL PEMASANGAN F.A.T.B (FIRE ALARM-TERMINAL BOX)
SKALA : 1/20

LEGENDA	
1	RUANG TAMPIL
2	RUANG KANTOR
3	RUANG KANTOR
4	RUANG KANTOR
5	RUANG KANTOR
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100	RUANG KANTOR

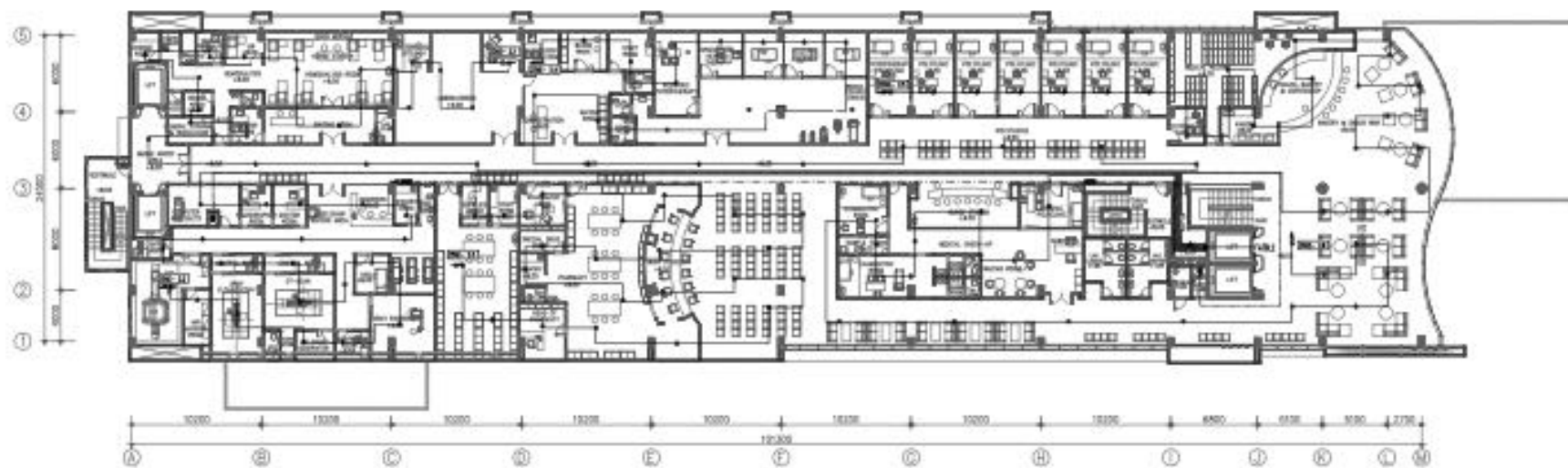
KODE KETERANGAN	
1	RUANG TAMPIL
2	RUANG KANTOR
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100	RUANG KANTOR



RENCANA FIRE ALARM LANTAI 01
 SKALA 1:250

SMBL. & KETERANGAN	
⊙	KOR. RUM. DETECTOR
⊙	FIRE RUM. DETECTOR
⊙	SMOKE DETECTOR
⊙	INDICATING LAMP
⊙	ALARM BELL
⊙	FLOOR SWITCH / TAMPON SWITCH
⊙	MANUAL CALL POINT SWITCH
⊙	END OF LINE RESISTOR BOX
⊙	FIRE ALARM TERMINAL BOX

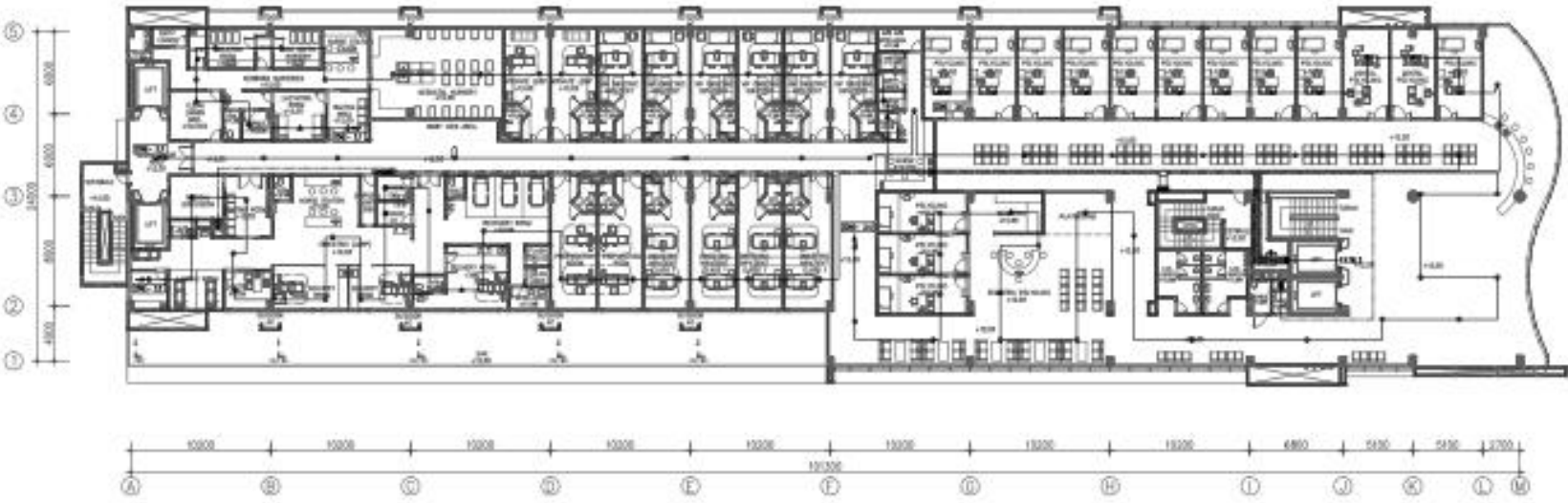
SMBL. RETILAS:
 - - - - - di RUM. TERBUKA (DOKUMEN RESISTOR)
 - - - - - FIRE di JALAN DE. INDICATING LAMP & ALARM BELL
 - - - - - FIRE di JALAN DE. MANUAL CALL POINT
 - - - - - FIRE di RUM. END OF LINE RESISTOR BOX
 - - - - - FIRE di JALAN DE. FLOOR SWITCH & TAMPON SWITCH



RENCANA FIRE ALARM LANTAI 02
 SKALA 1:200

SMBL & PETERANGAN	
⊙	SMK RUM DETECTOR
⊙	SMK RUM DETECTOR
⊙	SMK DETECTOR
⊙	HEATING LAMP
⊙	ALARM BELL
⊙	FLOR SWITCH / TAMPAR SWITCH
⊙	SMK (S) / SMK (S)
⊙	SMK (S) / SMK (S)
⊙	SMK (S) / SMK (S)
⊙	SMK (S) / SMK (S)
⊙	SMK (S) / SMK (S)

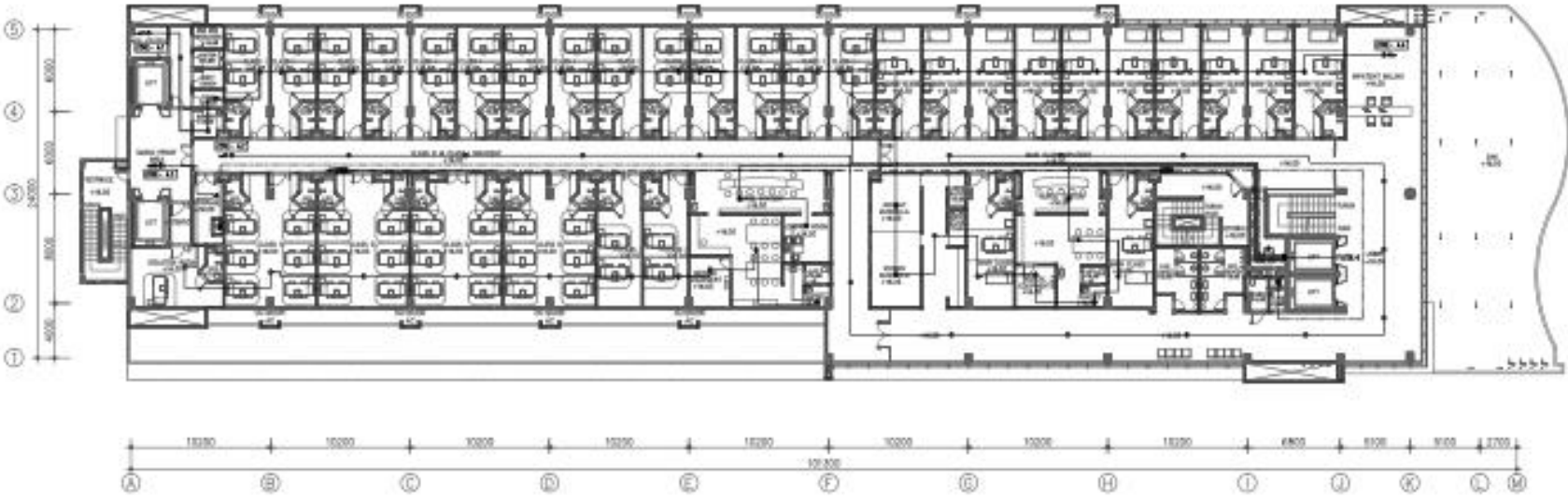
SMBL INSTALASI	
—	SMK (S) / SMK (S)
—	SMK (S) / SMK (S)
—	SMK (S) / SMK (S)
—	SMK (S) / SMK (S)
—	SMK (S) / SMK (S)
—	SMK (S) / SMK (S)



RENCANA FIRE ALARM LANTAI 03
SKALA 1:200

SMBL. & PENYANGAN	
⊙	NOT DETEKSI
⊖	RESEPTOR DETEKSI
⊚	NOTIFIKASI DETEKSI
⊛	RESEPTOR SUHU
⊜	ALARM BEL
⊝	ALARM BEL
⊞	ALARM BEL / TAMPIL SUKSES
⊠	NOTIFIKASI DETEKSI SUKSES
⊡	NOTIFIKASI DETEKSI SUKSES
⊣	NOTIFIKASI DETEKSI SUKSES
⊥	NOTIFIKASI DETEKSI SUKSES

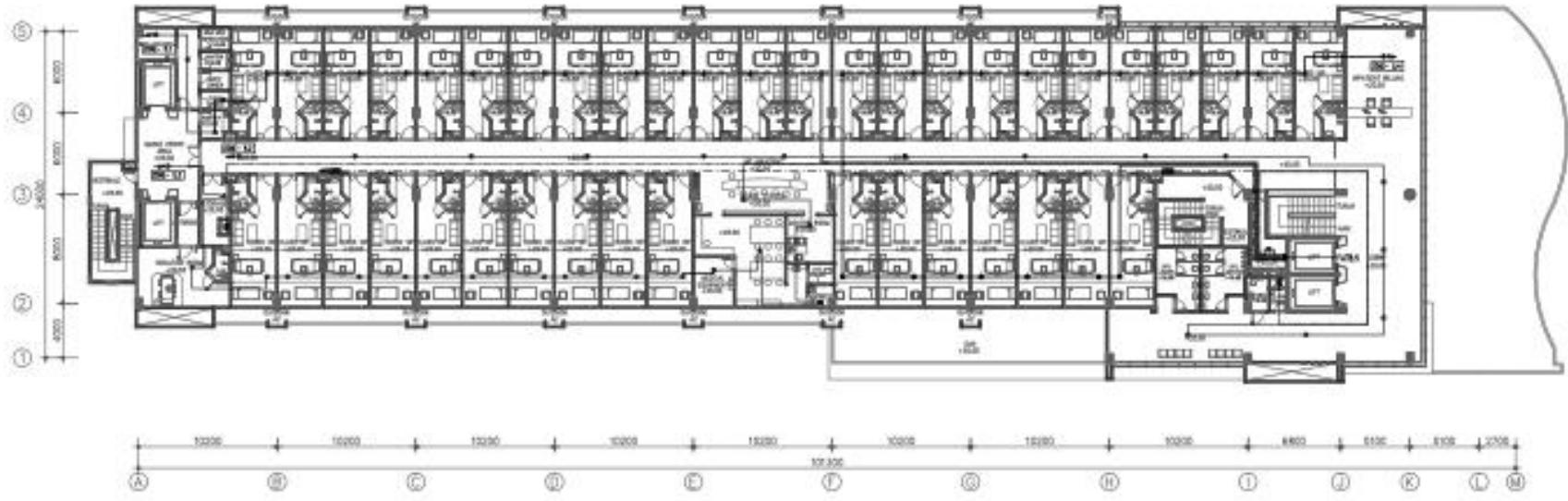
GREK. NOTIFIKASI
 - ⊙ NOTIFIKASI DETEKSI SUKSES
 - ⊖ NOTIFIKASI DETEKSI SUKSES
 - ⊚ NOTIFIKASI DETEKSI SUKSES
 - ⊛ NOTIFIKASI DETEKSI SUKSES
 - ⊜ NOTIFIKASI DETEKSI SUKSES
 - ⊝ NOTIFIKASI DETEKSI SUKSES
 - ⊞ NOTIFIKASI DETEKSI SUKSES
 - ⊠ NOTIFIKASI DETEKSI SUKSES
 - ⊡ NOTIFIKASI DETEKSI SUKSES
 - ⊣ NOTIFIKASI DETEKSI SUKSES
 - ⊥ NOTIFIKASI DETEKSI SUKSES



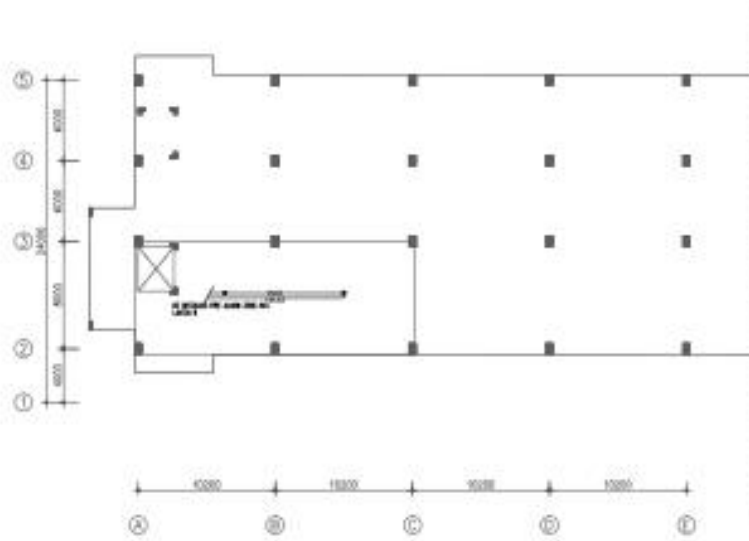
RENCANA FIRE ALARM LANTAI 04
 SKALA 1:200

SIMBOL & PENJELASAN	
⊖	NOT NEAR DETECTOR
⊕	NEAR NEAR DETECTOR
⊖	SMOKE DETECTOR
⊖	RECOVERING SWAP
⊖	ALARM BELL
⊖	FLOW SWITCH / TANKER SWITCH
⊖	MANUAL CALL POINT (MCP)
⊖	BY TRANSMITTING MESSAGES (TMS)
⊖	ON OF LINE DETECTOR (OLSD)
⊖	THE ALARM TRANSMIT SW

KABEL INSTALASI:
 - 1/2" PVC (Lantai) DENGAN BENTUK
 - 1/2" PVC (Lantai) DI BAWAH
 LANTAI & DUKUNG BELL
 - 1/2" PVC (Lantai) DI BAWAH LANTAI
 PONDOK
 - 1/2" PVC (Lantai) DI BAWAH LANTAI
 BENTUK LANTAI
 - 1/2" PVC (Lantai) DI BAWAH LANTAI
 & TANKER SWITCH



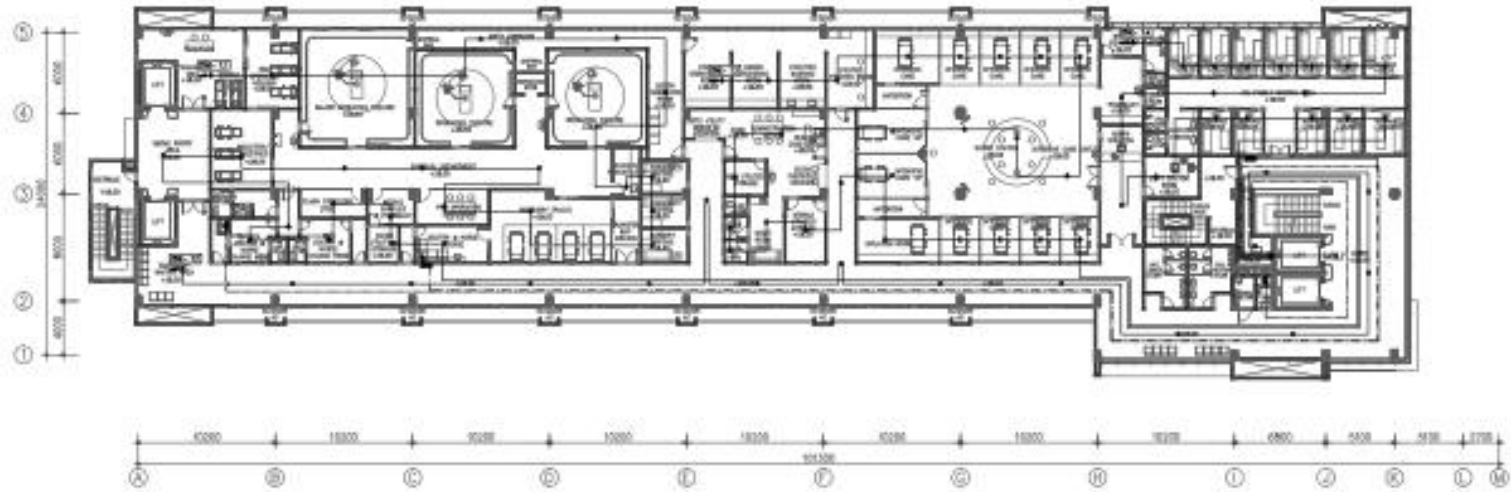
RENCANA FIRE ALARM LANTAI 05
 SKALA 1:200



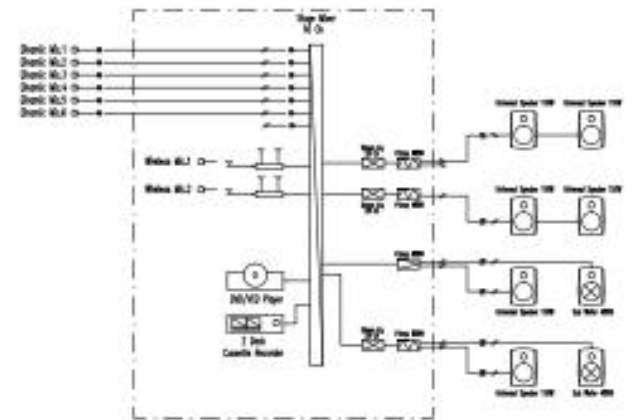
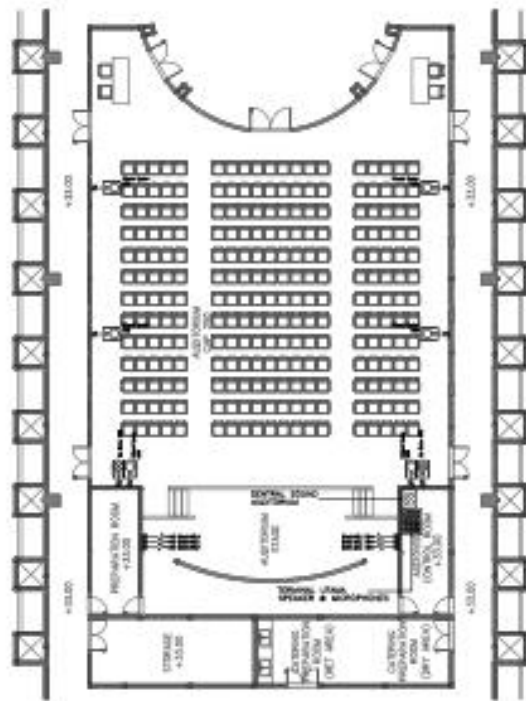
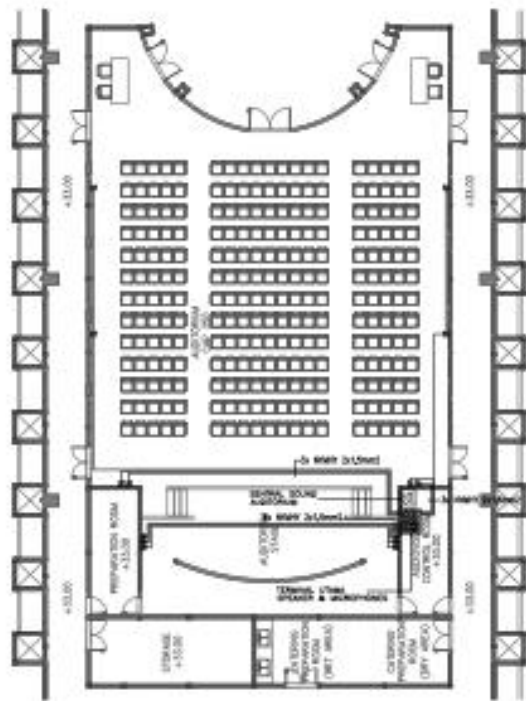
TABEL 8 KETERANGAN	
①	LINE KAMER DETEKSI
②	LINE KAMER NOTIFIKASI
③	LINE KAMER NOTIFIKASI
④	LINE KAMER NOTIFIKASI
⑤	LINE KAMER NOTIFIKASI
⑥	LINE KAMER NOTIFIKASI
⑦	LINE KAMER NOTIFIKASI
⑧	LINE KAMER NOTIFIKASI
⑨	LINE KAMER NOTIFIKASI
⑩	LINE KAMER NOTIFIKASI
⑪	LINE KAMER NOTIFIKASI
⑫	LINE KAMER NOTIFIKASI
⑬	LINE KAMER NOTIFIKASI
⑭	LINE KAMER NOTIFIKASI
⑮	LINE KAMER NOTIFIKASI
⑯	LINE KAMER NOTIFIKASI
⑰	LINE KAMER NOTIFIKASI
⑱	LINE KAMER NOTIFIKASI
⑲	LINE KAMER NOTIFIKASI
⑳	LINE KAMER NOTIFIKASI

TABEL DETAIL:

- ① LINE KAMER DETEKSI
- ② LINE KAMER NOTIFIKASI
- ③ LINE KAMER NOTIFIKASI
- ④ LINE KAMER NOTIFIKASI
- ⑤ LINE KAMER NOTIFIKASI
- ⑥ LINE KAMER NOTIFIKASI
- ⑦ LINE KAMER NOTIFIKASI
- ⑧ LINE KAMER NOTIFIKASI
- ⑨ LINE KAMER NOTIFIKASI
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- ⑮ LINE KAMER NOTIFIKASI
- ⑯ LINE KAMER NOTIFIKASI
- ⑰ LINE KAMER NOTIFIKASI
- ⑱ LINE KAMER NOTIFIKASI
- ⑲ LINE KAMER NOTIFIKASI
- ⑳ LINE KAMER NOTIFIKASI



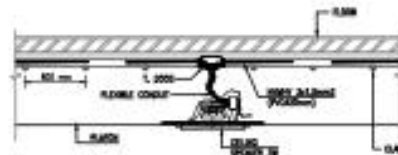
RENCANA FIRE ALARM LANTAI 07
 SKALA 1:200



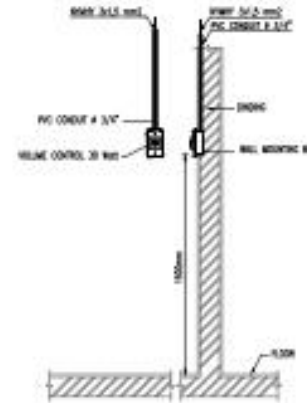
RENCANA SOUND SYSTEM RUANG AUDITORIUM
SKALA NTS



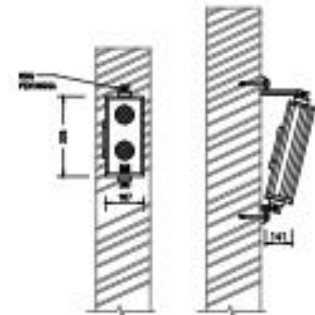
DETAIL INSTALASI COLUMN SPEAKER PADA PLAT BETON
SKALA : 1/20



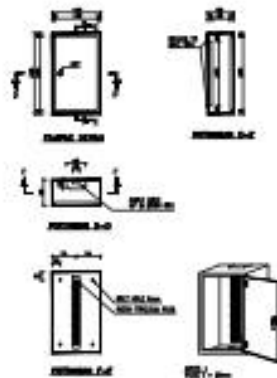
DETAIL INSTALASI COLUMN SPEAKER PADA PLAFON
SKALA : 1/20



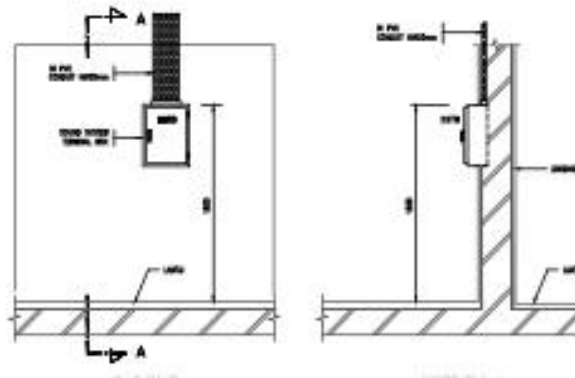
DETAIL INSTALASI VOLUME CONTROL
SKALA : 1/20



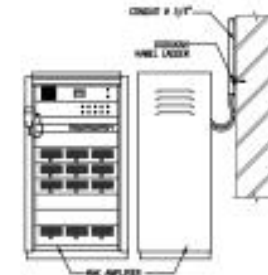
DETAIL INSTALASI COLUMN SPEAKER
SKALA : 1/20



DETAIL SOUND SYSTEM-TERMINAL BOX 10"
SKALA : 1/20



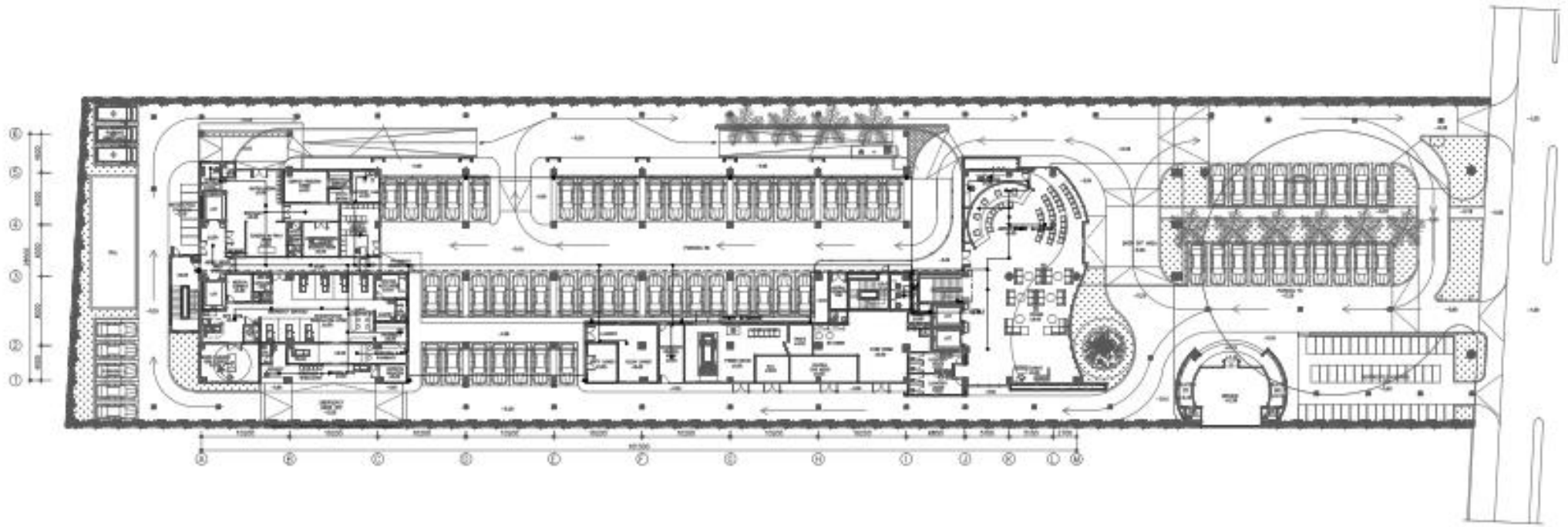
DETAIL PEMASANGAN SSIR (SOUND SYSTEM-TERMINAL BOX)
SKALA : 1/20



DAMBAR TAMPAK RAK SENTRAL SOUND SYSTEM
SKALA : 1/20

SMBL & KETERANGAN	
●	CELAN USKAP 10
■	CELAN USKAP 120
○	USKAP 10000
□	USKAP 10000
□	USKAP 10000
□	USKAP 10000
□	USKAP 10000
□	USKAP 10000

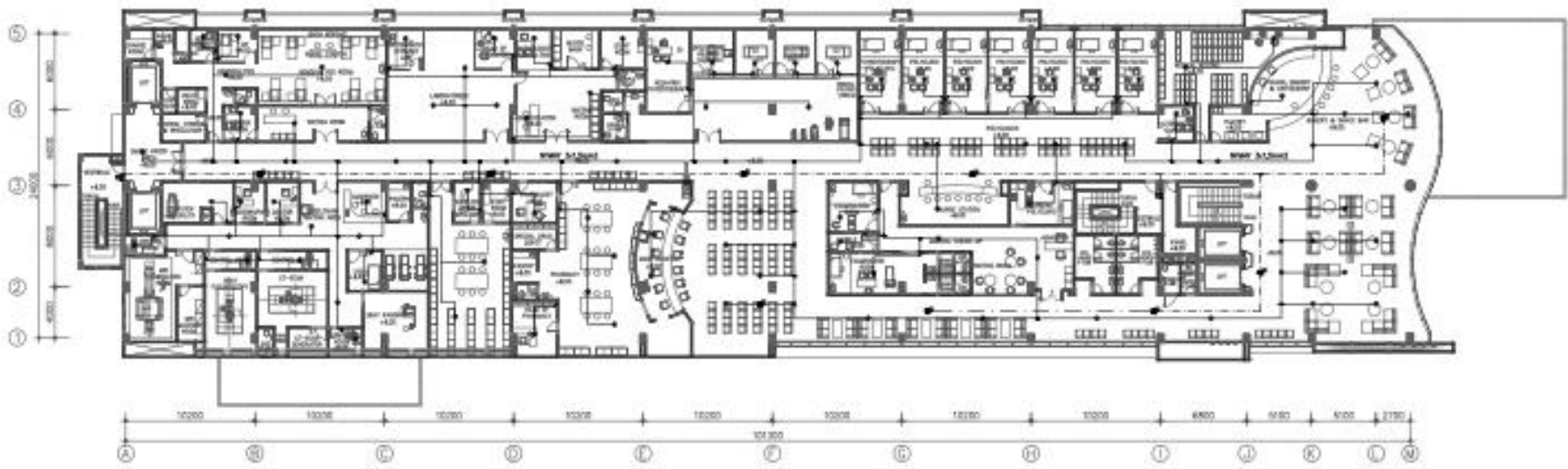
KAREKTERISTIK
 --- RUMAH 10000 (RUMAH USKAP 10000)
 --- RUMAH 10000 (RUMAH USKAP 10000)



RENCANA SOUND SYSTEM GROUND FLOOR
 SKALA 1:250

SAMBOL & KETERANGAN	
●	CEILING SPEAKER 2W
■	CEILING SPEAKER 10W
⌘	VOLUME CONTROL
Ⓜ	SPEAKER EMERGENCY
Ⓜ	WALL SPEAKER EMERGENCY
SW	SOUND SYSTEM SYMBOL SW

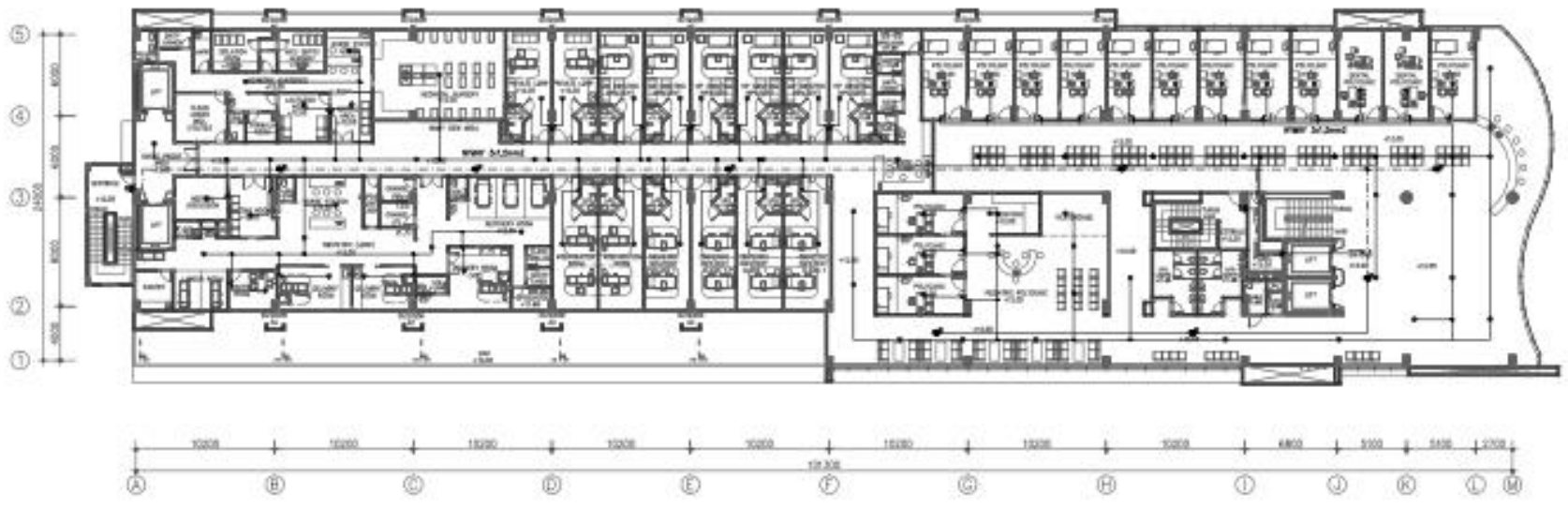
KABEL INSTALASI:
 - - - - - KABEL 2/1/1/1 (INSTALASI SPEAKER PABUK)
 - - - - - KABEL 2/1/1/1 (INSTALASI SPEAKER EMERGENCY)



RENCANA SOUND SYSTEM LANTAI 02
 SKALA 1:200

SIMBOL & KETERANGAN	
	CEILING SPEAKER 1W
	CEILING SPEAKER 10W
	CEILING SPEAKER
	SPEAKER EMERGENCY
	BELL SPEAKER EMERGENCY
	BOX SUARA SISTEM TERMINAL BOX

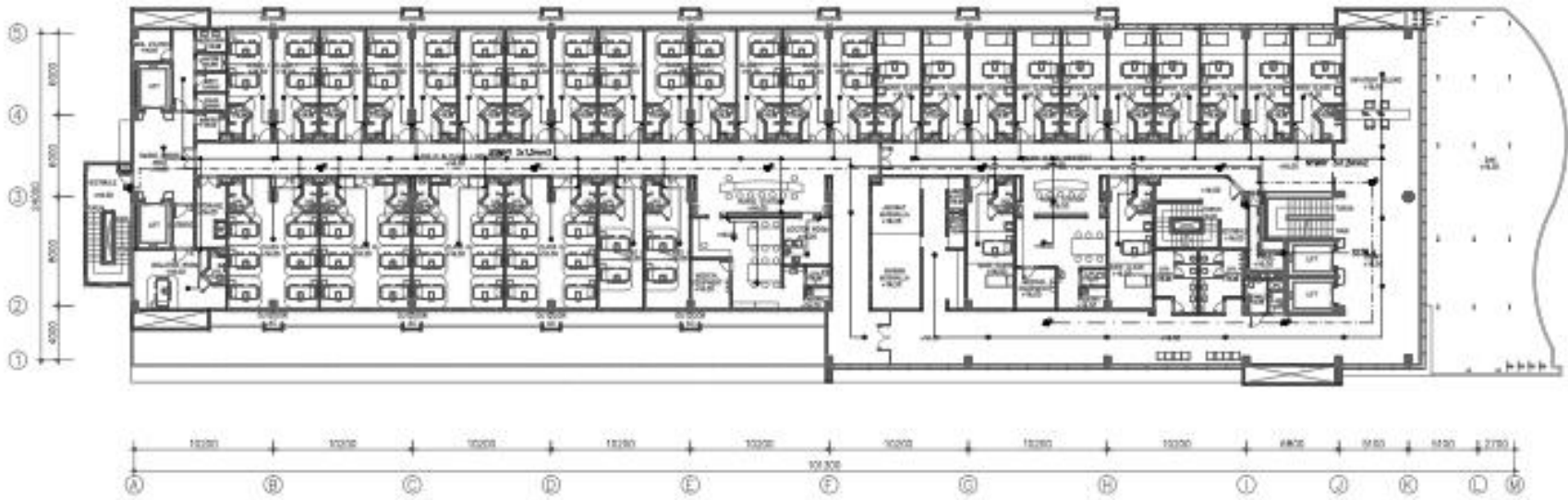
RENCANA KABELAGE
 KABEL 2x2.5mm² (SIGNAL SPEAKER PUSAK)
 RUC 2x1.5mm² (SIGNAL SPEAKER EMERGENCY)



RENCANA SOUND SYSTEM LANTAI 03
 SKALA 1:200

SMBL & KETERANGAN	
⊕	CEILING SPEAKER IN
⊖	CEILING SPEAKER TON
⌘	WALL CONTROL
⊞	SPEAKER EMERGENCY
⊕	WALL SPEAKER EMERGENCY
⊞	CEILING SYSTEM SIGNAL BOX

SMBL. NOTULAS:
 - - - - - WYBY (In-Direct) (DETILAS SPEAKER PUBLIC)
 - - - - - WYBY (In-Direct) (DETILAS SPEAKER EMERGENCY)



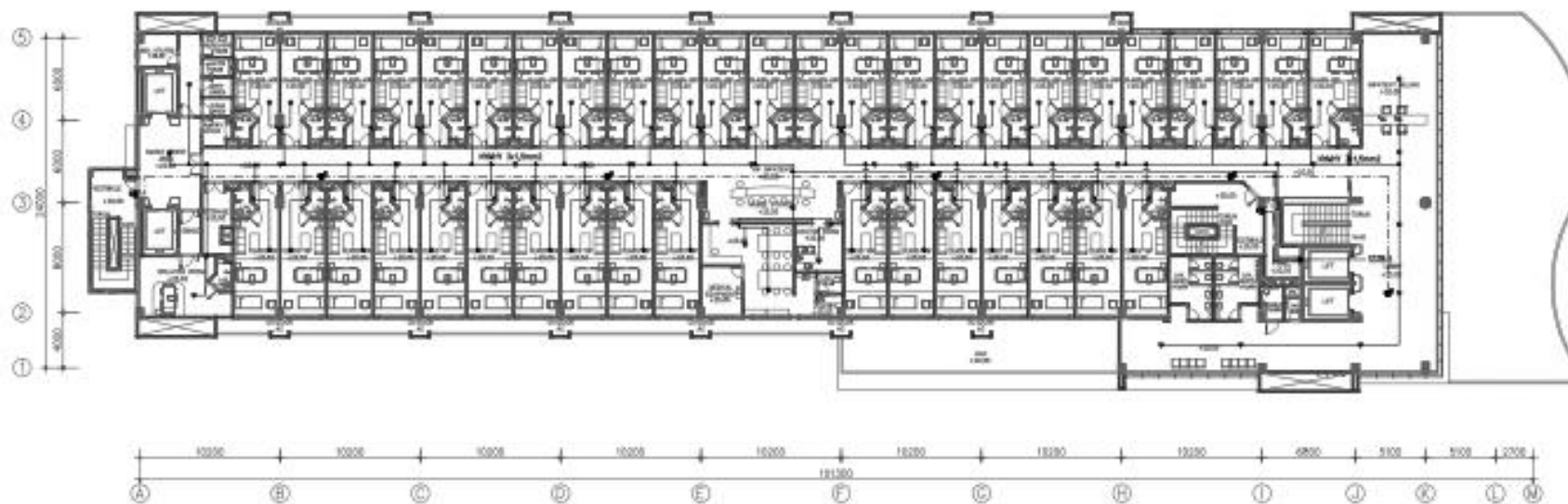
RENCANA SOUND SYSTEM LANTAI 04
 SKALA 1:200

SIMBOL & LETRANGAN	
	CEILING SPEAKER 3W
	CEILING SPEAKER 12W
	VOLUME CONTROL
	SPEAKER EMERGENCY
	WALL SPEAKER EMERGENCY
	SOUND SYSTEM TERMINAL BOX

KAREKTERISTIK

— SPEAKER 3W (DITAMBAH SPEAKER PUKUL)

--- SPEAKER 12W (DITAMBAH SPEAKER EMERGENCY)

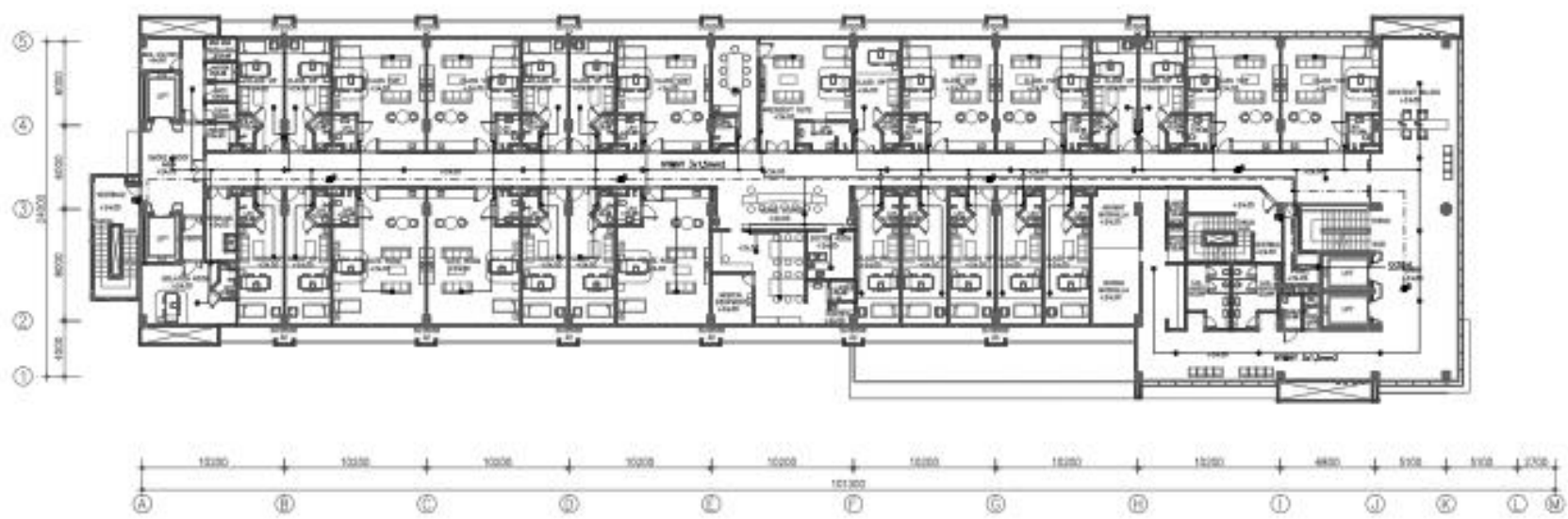


RENCANA SOUND SYSTEM LANTAI 05

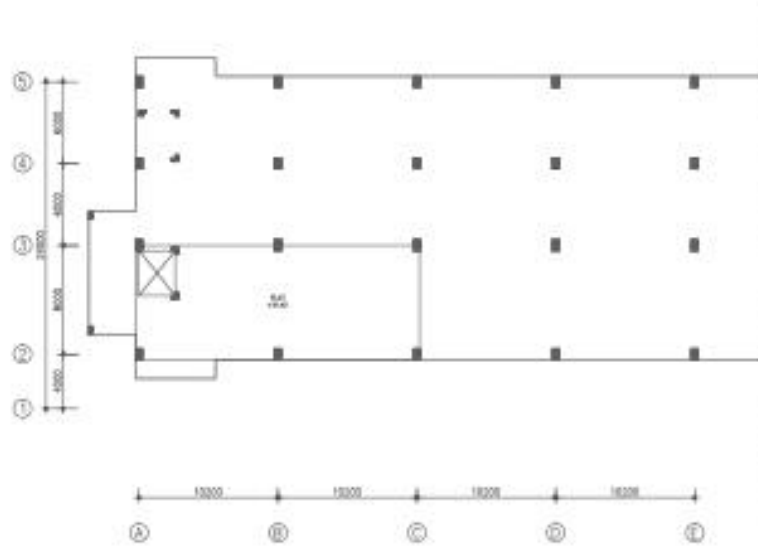
SKALA 1:200

SIMBOL & KETERANGAN	
●	CEILING SPEAKER 20
■	CEILING SPEAKER 10W
□	VOLUKE CONTROL
⊞	SPEAKER EMERGENCY
⊞	WALL SPEAKER EMERGENCY
⊞	SOUND SYSTEM SIGNAL BOX

KABEL INSTALASI:
 ——— WIRY 3x1,5mm² (SIGNAL SPEAKER PUBLIC)
 - - - - - FIBER OPTIC (SIGNAL SPEAKER EMERGENCY)



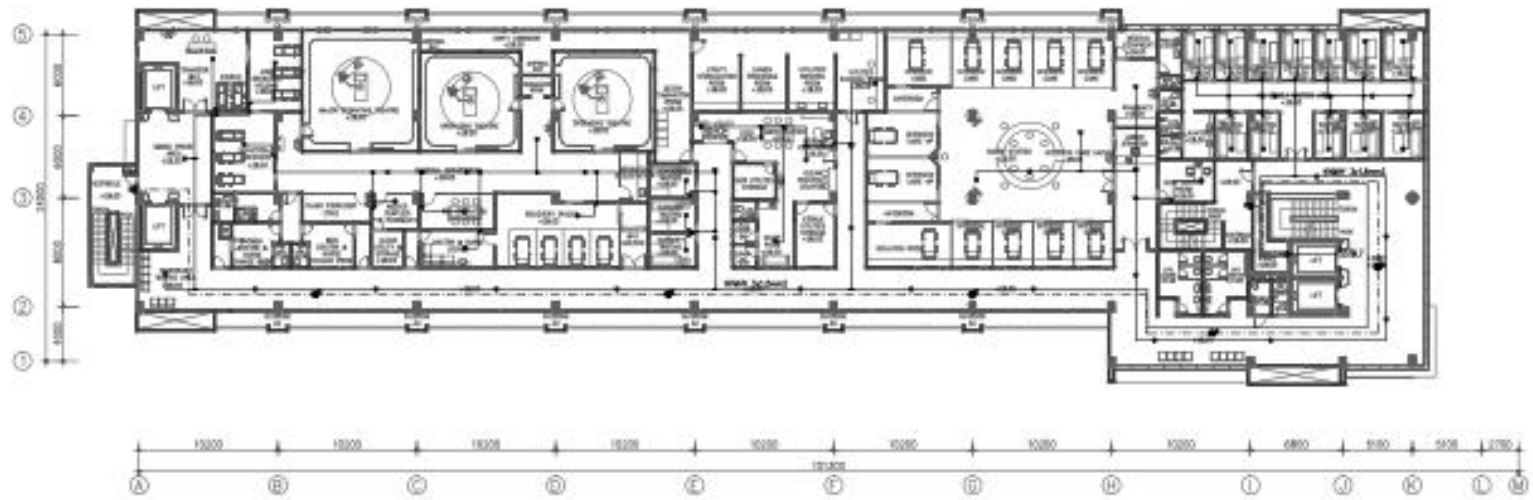
RENCANA SOUND SYSTEM LANTAI 06
 SKALA 1:200



SIMBOL & KETERANGAN	
	CEILING SPEAKER 2W
	CEILING SPEAKER 10W
	CEILING SPEAKER 15W
	CEILING SPEAKER 20W
	CEILING SPEAKER 30W
	CEILING SPEAKER 40W
	CEILING SPEAKER 50W
	CEILING SPEAKER 60W
	CEILING SPEAKER 80W
	CEILING SPEAKER 100W

KABEL SPEAKER

--- KABEL SPEAKER 2W
 --- KABEL SPEAKER 10W
 --- KABEL SPEAKER 15W
 --- KABEL SPEAKER 20W
 --- KABEL SPEAKER 30W
 --- KABEL SPEAKER 40W
 --- KABEL SPEAKER 50W
 --- KABEL SPEAKER 60W
 --- KABEL SPEAKER 80W
 --- KABEL SPEAKER 100W



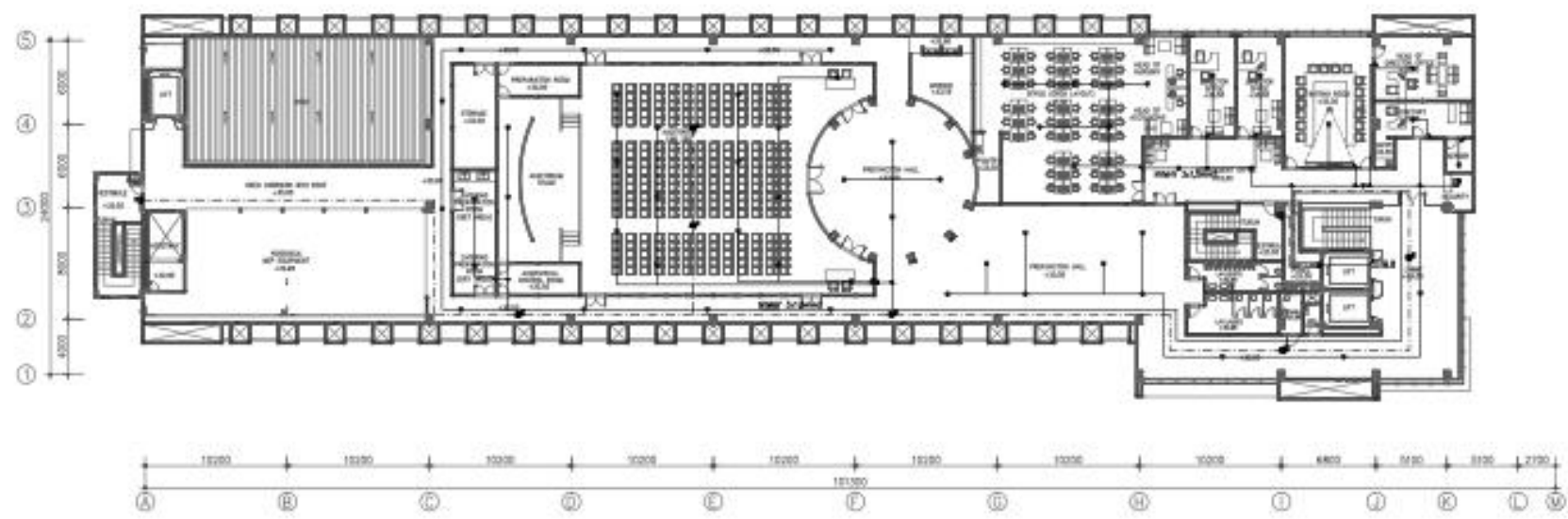
RENCANA SOUND SYSTEM LANTAI 07
 SKALA 1:200

SIMBOL & KETERANGAN	
	CEILING SPEAKER 20
	CEILING SPEAKER 100
	COLUMN SPEAKER
	SPEAKER EMERGENCY
	FIRE SPEAKER EMERGENCY
	SOUND SYSTEM TERMINAL BOX

KABEL, NOTULASI

— KABEL 2x2 (SIGNAL SPEAKER PULSA)

- - - - - KABEL 2x2 (SIGNAL SPEAKER EMERGENCY)



RENCANA SOUND SYSTEM LANTAI 08

SKALA 1:200

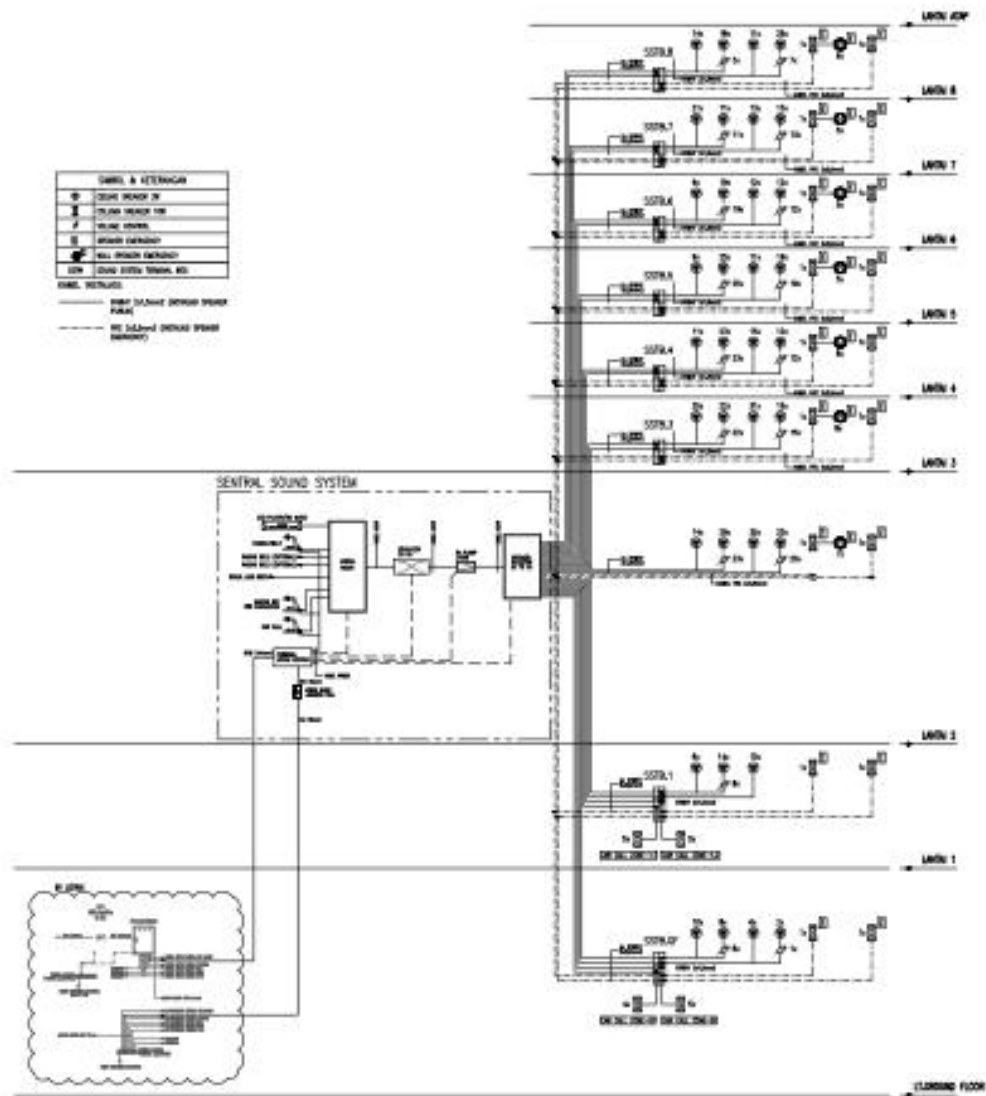
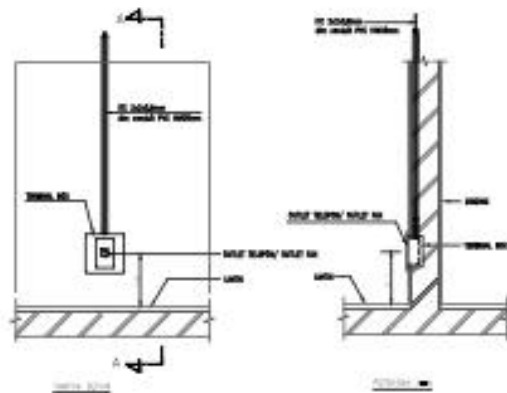
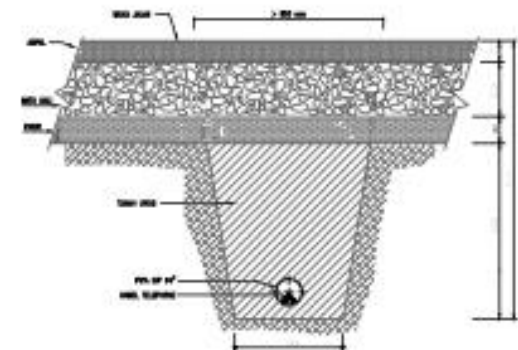


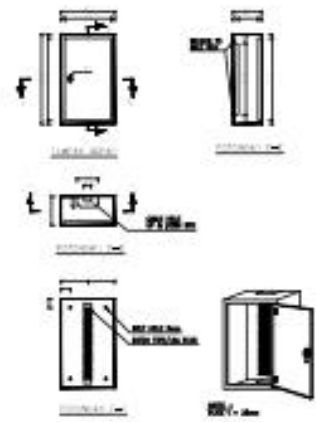
DIAGRAM SKEMATIK SOUND SYSTEM
 SKALA : NTS



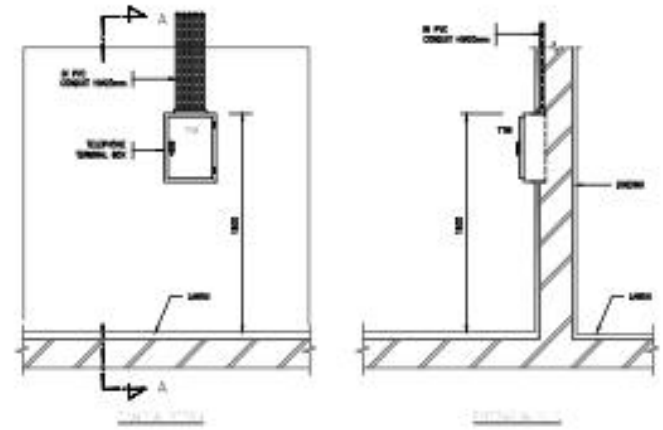
DETAIL OUTLET TELEPON/FAXSIMILE
SKALA : 1/5



DETAIL PEMASANGAN KABEL TELEPON BAWAH TANAH
SKALA : 1/5



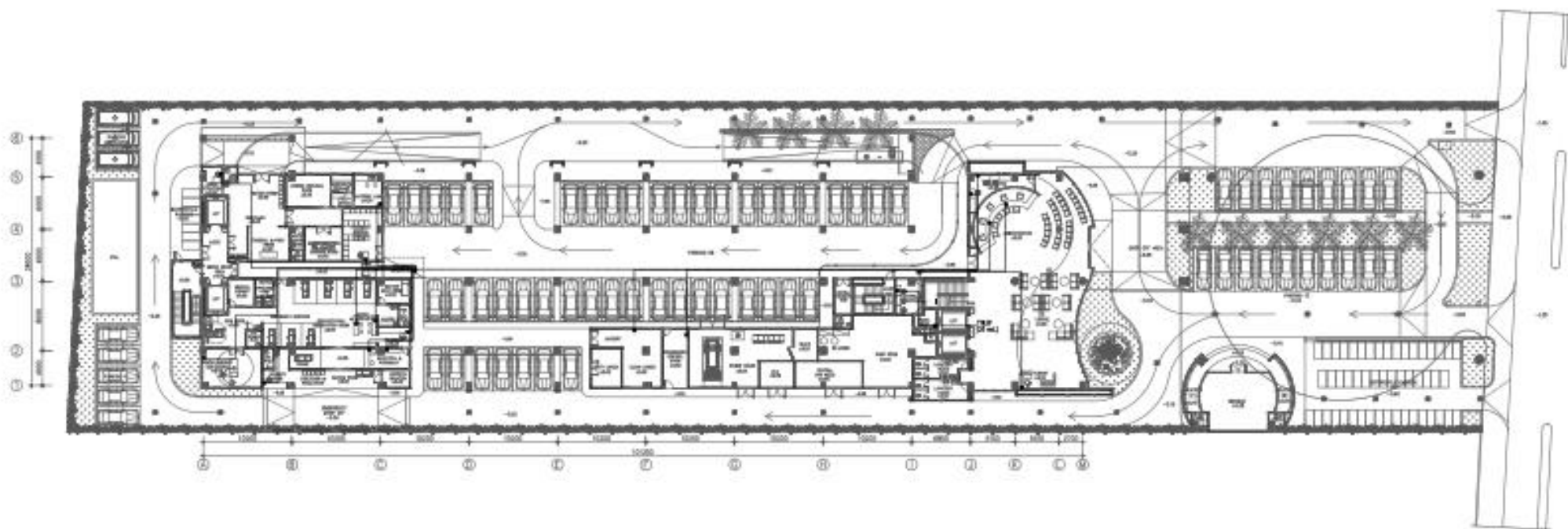
DETAIL TELEPHONE-TERMINAL BOX 10"
SKALA : 1/5



DETAIL PEMASANGAN TTR (TELEPHONE-TERMINAL BOX)
SKALA : 1/5

SAMBUL & KETERANGAN	
	INLET TELEPHONE ROOM
	INLET TELEPHONE LINE
	TELEPHONE TERMINAL BOX

RENCANA TELEFON BERDASARKAN KABEL EC 3 PAIR
(2x0.6mm) DALAM HEK IMPACT CONDUIT 60mm

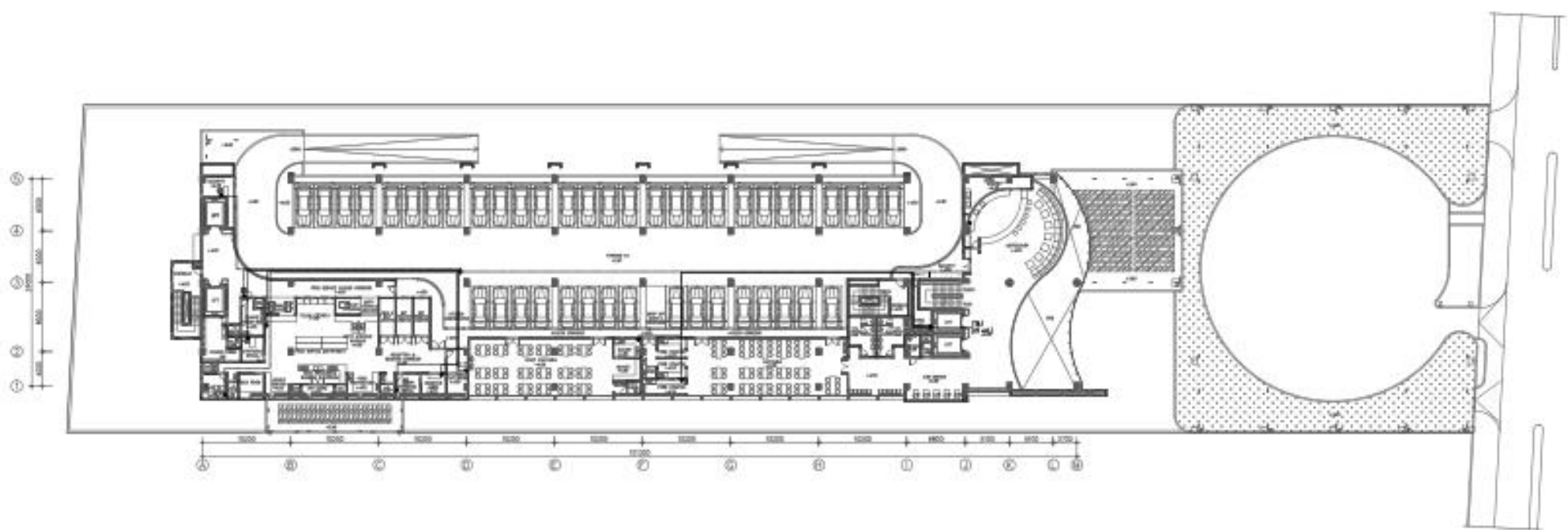


RENCANA TELEPON GROUND FLOOR

SKALA 1:250

SIMBOL & KETERANGAN	
	OUTLET TELEFON 2 INCH
	OUTLET TELEFON 1.5 INCH
	TELEFON TERMINAL BOX

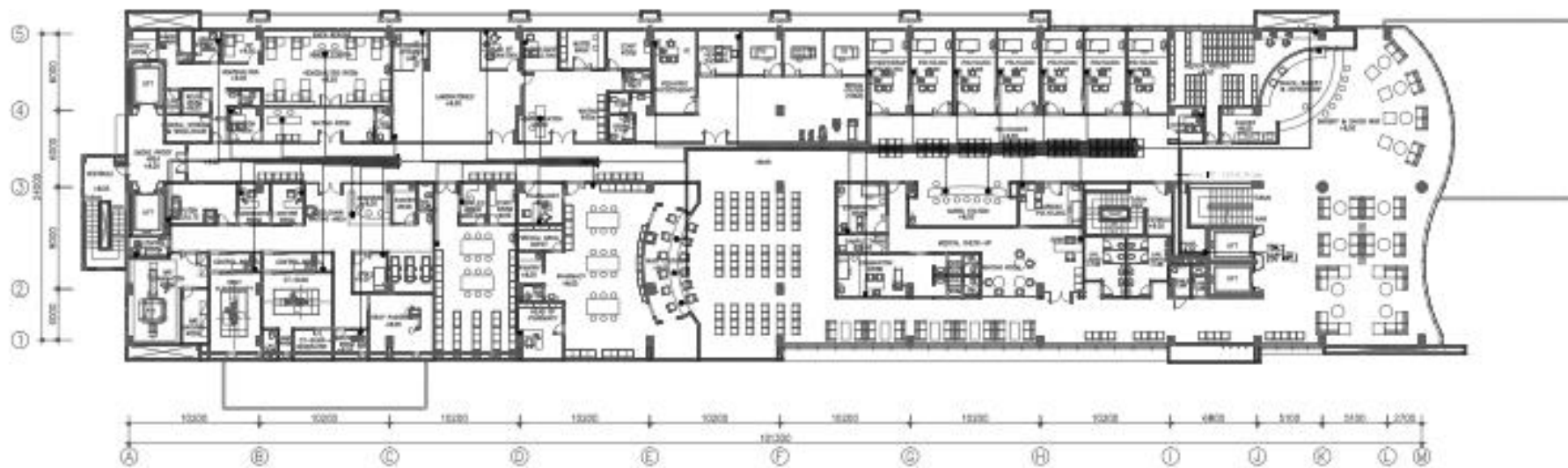
REKAMAJU TELEFON BERKONSTRUKSI RANGKAIAN PD 1 DAN (Dokumentasi) DRUM HUB IMPACT CIRCUIT 820000



RENCANA TELEPON LANTAI 01
SKALA 1:250

SIMBOL & KETERANGAN	
	OUTLET TELEPHONE DINDING
	OUTLET TELEPHONE LANTAI
	TELEPHONE TERMINAL BOX

NOTASI TELEPHONE MENGGUNAKAN KABEL FT 2 PIR (2x20,8mm) DALAM HOVI WPCV CONDUIT 42mm

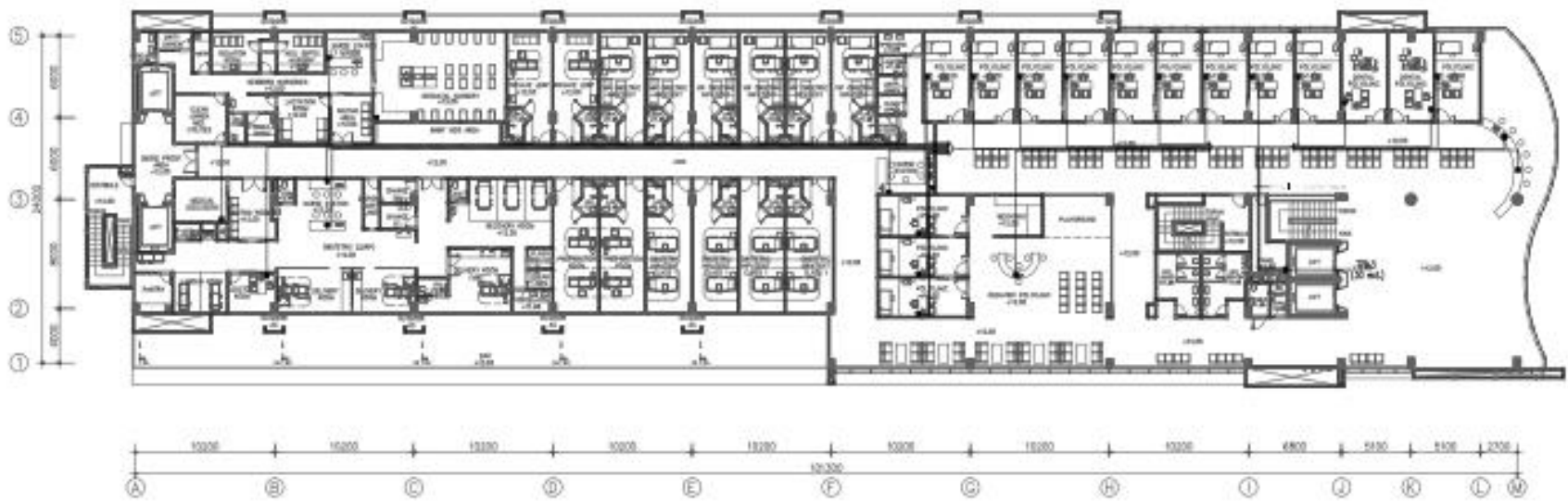


RENCANA TELEPON LANTAI 02

SKALA 1:200

SIMBOL & KETERANGAN	
	OUTLET TELEPHONE DALAM
	OUTLET TELEPHONE LANTAR
	TELEPHONE TERMINAL BOX

NOTASI TELEPHONE MENGGUNAKAN KABEL TC 2 PIR (2x0,6mm) DALAM HIGH IMPACT CONDUIT 40mm



RENCANA TELEPON LANTAI 03
SKALA 1:200

SIMBOL & KETERANGAN	
	OUTLET TELEPHONE DATA
	OUTLET TELEPHONE LAIN
	TELEPHONE TERMINAL BOX

INSTALASI TELEPHONE MENGGUNAKAN KABEL (TC 2 PIR (2x2x0,6mm)) DALAM HIGH IMPACT CONDUIT 40mm

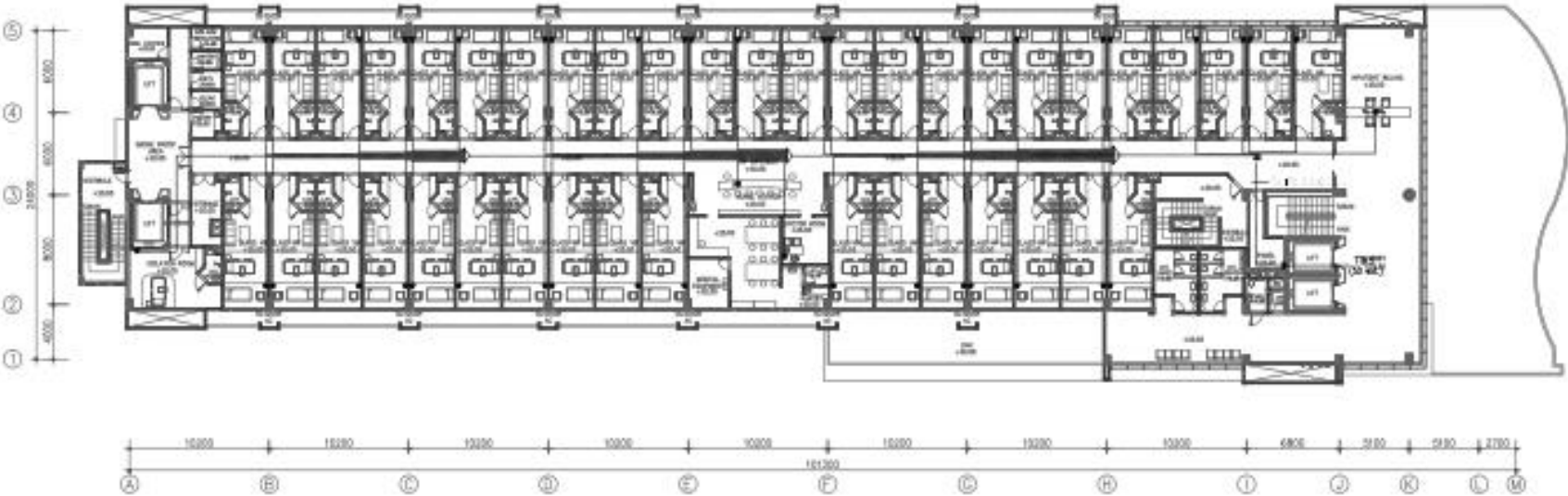


RENCANA TELEPON LANTAI 04

SKALA 1:200

SIMBOL & KETERANGAN	
	OUTLET TELEPHONE DADING
	OUTLET TELEPHONE LANTAI
	TELEPHONE TERMINAL BOX

INSTALASI TELEFONE MENGGUNAKAN KABEL TC 2 PIR (2x2x0,6mm) DALAM HIGH IMPACT CONDUIT 40mm

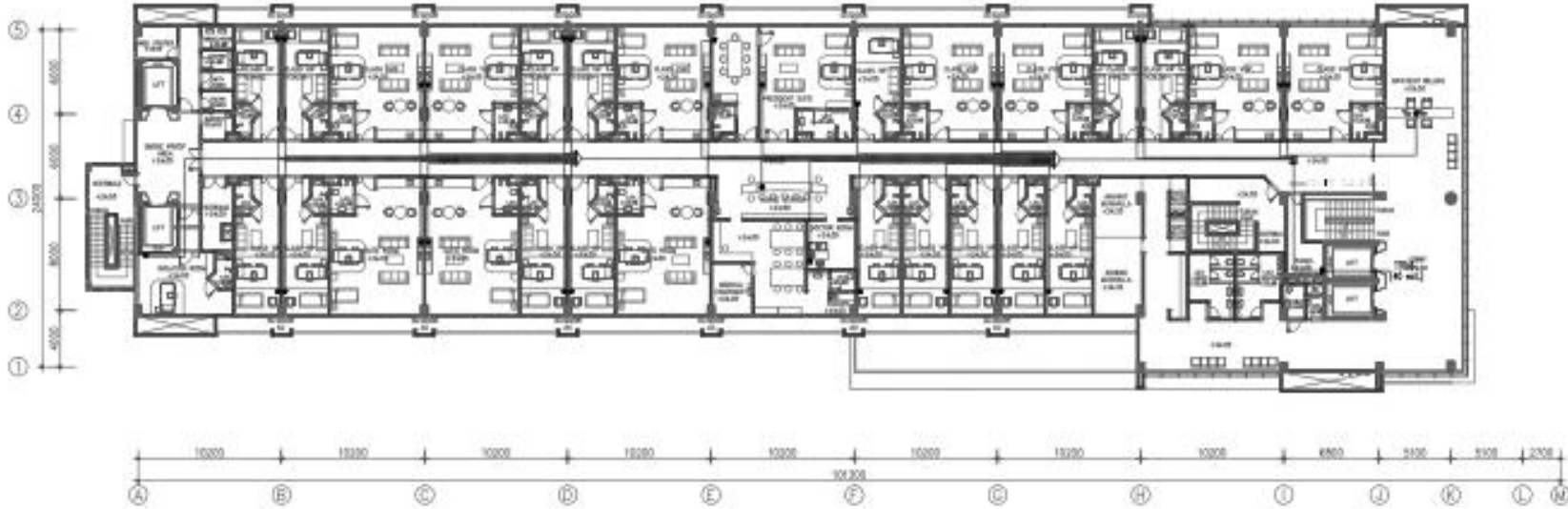


RENCANA TELEPON LANTAI 05

SKALA 1:200

SIMBOL & KETERANGAN	
	OUTLET TELEPHONE SUKSES
	OUTLET TELEPHONE DATA
	TELEPHONE TERMINAL BOX

INSTALASI TELEFON MENGGUNAKAN KABEL 10C 2 PAIR (2x0,5mm²) DALAM HIGH IMPACT CONDUIT 80mm

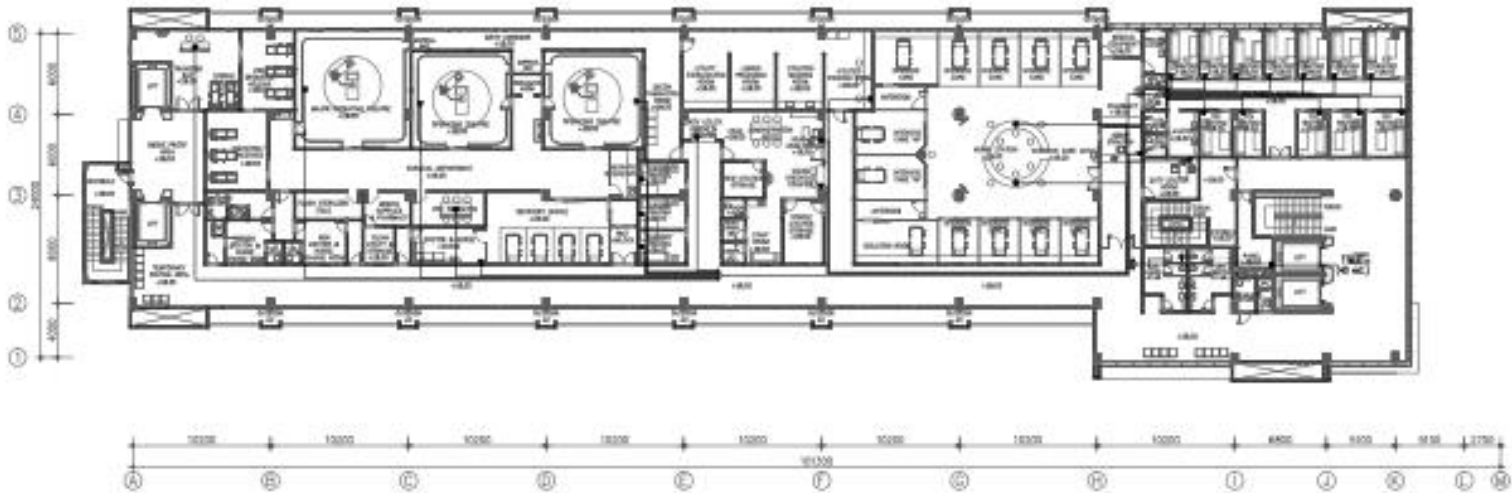


RENCANA TELEPON LANTAI 06

SKALA 1:200

SIMBOL & KETERANGAN	
☒	BUKET TELEPHONE GANDA
☐	BUKET TELEPHONE LAINA
☎	TELEPHONE TERMINAL 60%

NOTAS: TELEPHONE MENGGUNAKAN KABEL ITG 2 PAIR (20/0,4/100) DALAM HIGH IMPACT CONDUIT 65mm



RENCANA TELEPON LANTAI 07
SKALA 1:200

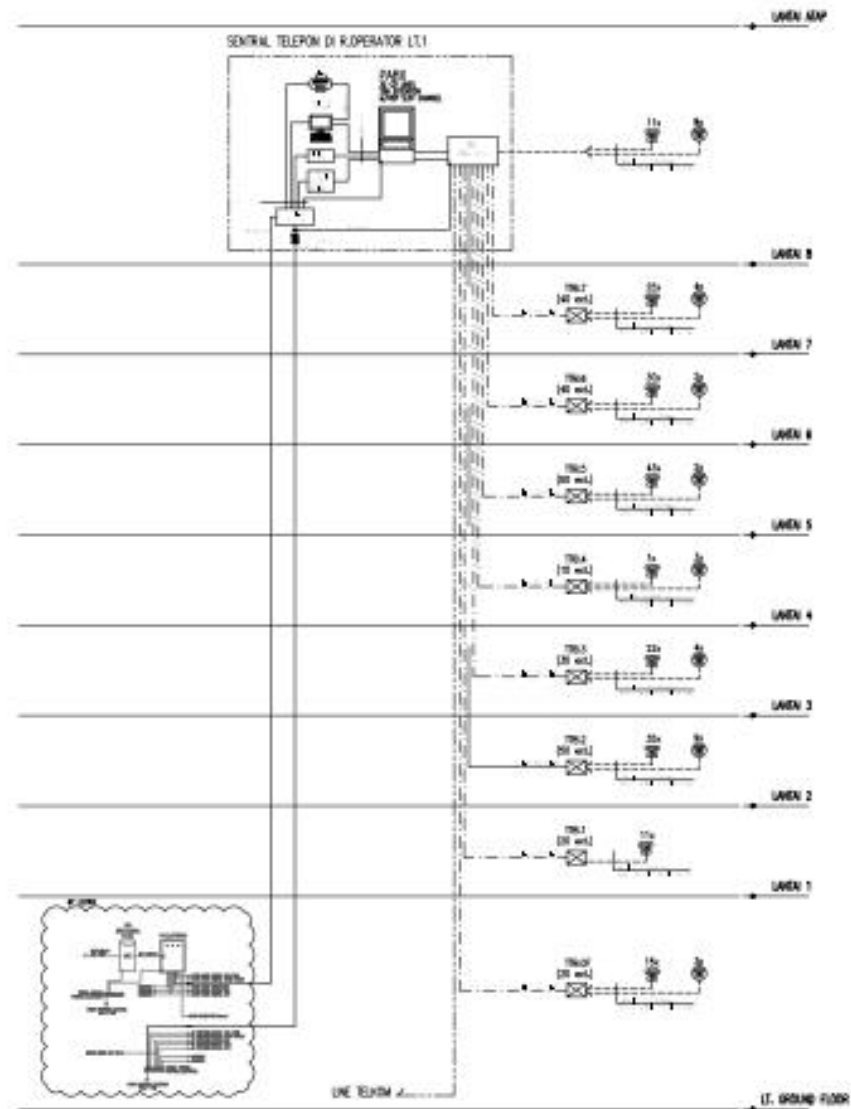
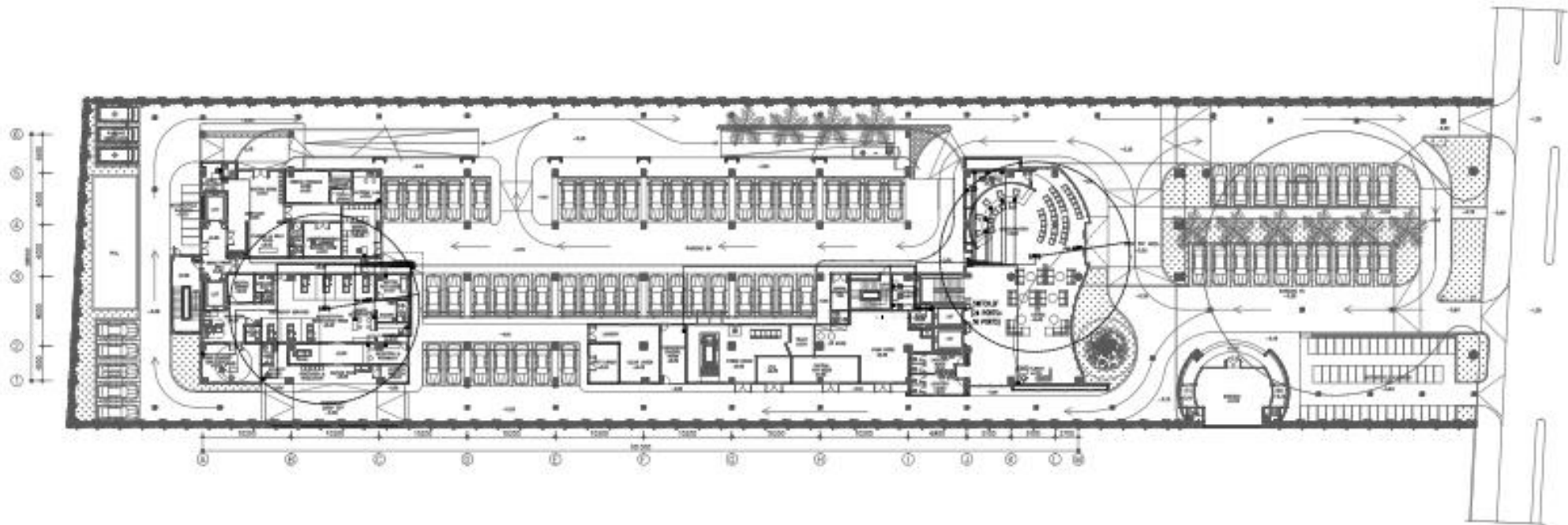





DIAGRAM SKEMATIK TELEPON

SIMBOL & PETERANGAN	
	OUTLET DATA RUMAH SAKIT
	OUTLET DATA RUMAH LAYU
	WiFi ACCESS POINT BELLIn (LAPOR/7500) - ZONE AREA KINERJA

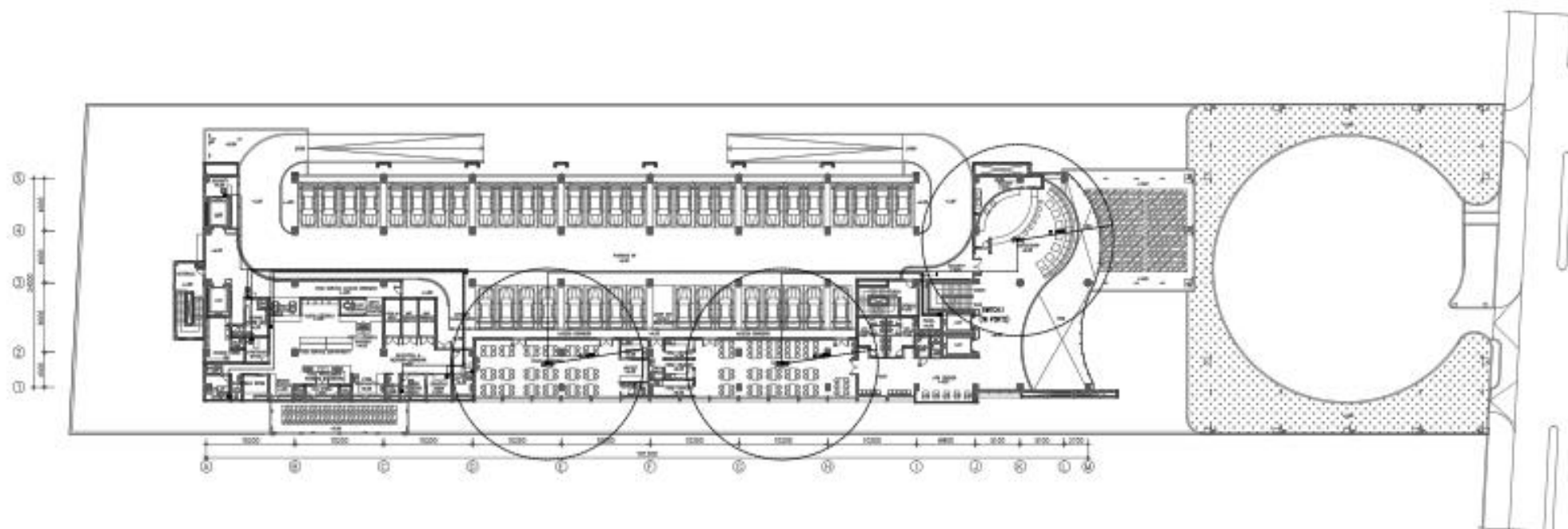
NOTASI DATA & WiFi MENYERANG AREA LIP GAN
 LAIN NER BANYU CONTOH 800cm



RENCANA DATA & WiFi GROUND FLOOR 
 SKALA 1:250

SIMPUL & KETERANGAN	
	OUTLET DATA RANG BENDUNG
	OUTLET DATA RANG LAMPA
	WIFI ACCESS POINT (AP) 11n 2.4GHz/5GHz - GIGABYTE WGA 60meter

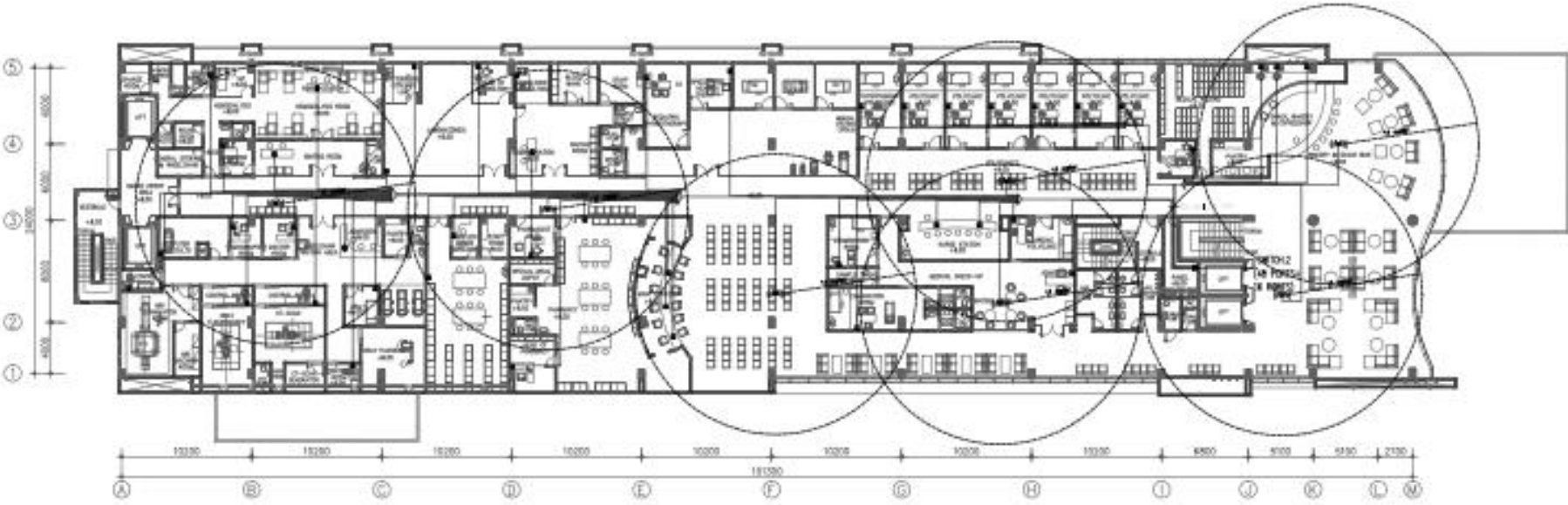
INSTALASI DATA & WIFI MENCONTOH RANG, UPTI CAN
DILAKUKAN SESUAI DENGAN KEDUDUKAN



RENCANA DATA & WIFI LANTAI 01
SKALA 1:250

SIMBOL & KETERANGAN	
	OUTLET DATA RUANG BINGKING
	OUTLET DATA RUANG LANTAI
	WIFI ACCESS POINT 802.11n 2,4GHz/5GHz-COVERAGE AREA 10meter

INSTALASI DATA & WIFI MENGGUNAKAN KABEL STP CAT5E DALAM HIGH IMPACT CONDUIT 40mm

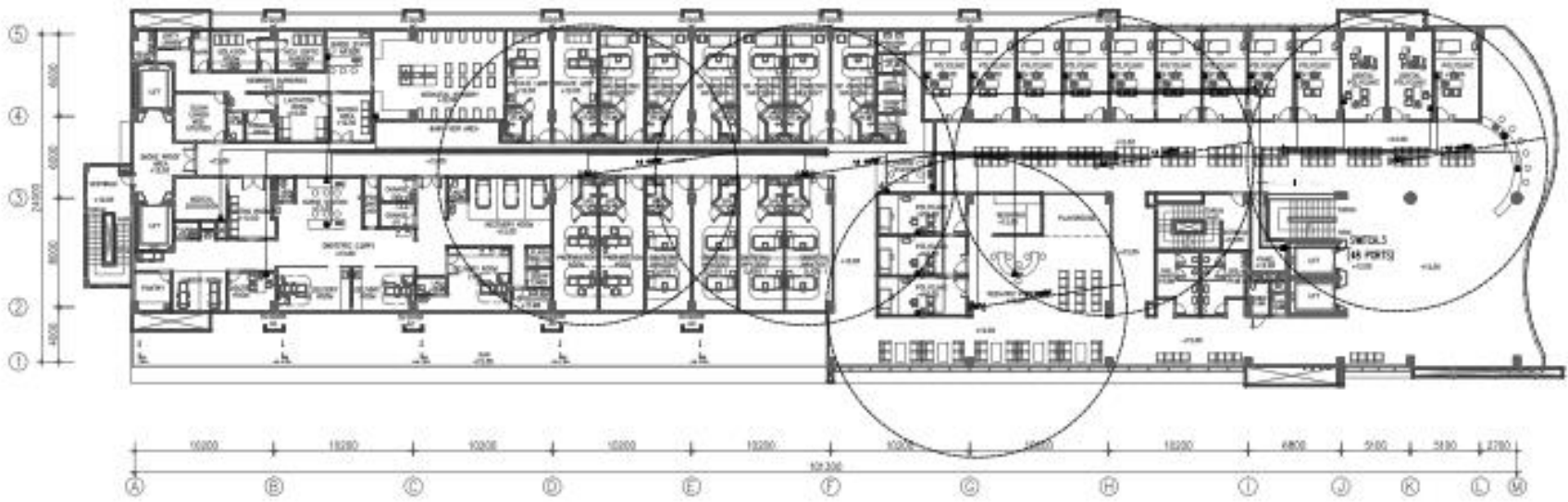


RENCANA DATA & WIFI LANTAI 02

SKALA 1:200

SIMBOL & KETERANGAN	
	SUJUT DATA RIAS DINDING
	SUJUT DATA RIAS LANTAI
	WIFI ACCESS POINT 802.11n 2,4GHz/5GHz - COVERAGE AREA 70meter

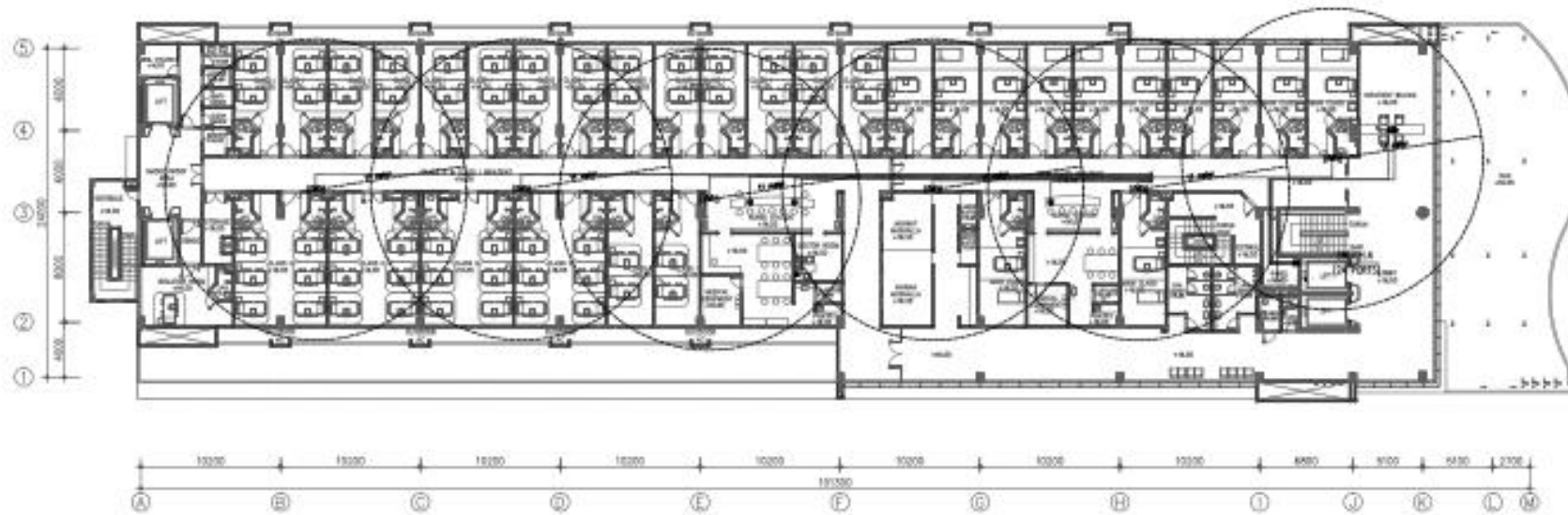
INSTALASI DATA & WIFI MENGGUNAKAN BABEL UTP DATA
DALAM HIGH IMPACT CONDUIT 40mm






RENCANA DATA & WIFI LANTAI 03
SKALA 1:200

SIMBOL & KETERANGAN	
	OUTLET DATA RANG BERING
	OUTLET DATA RANG LAMA
	WIFI ACCESS POINT 802.11n 2.4GHz/5GHz - COVERAGE AREA 45meter

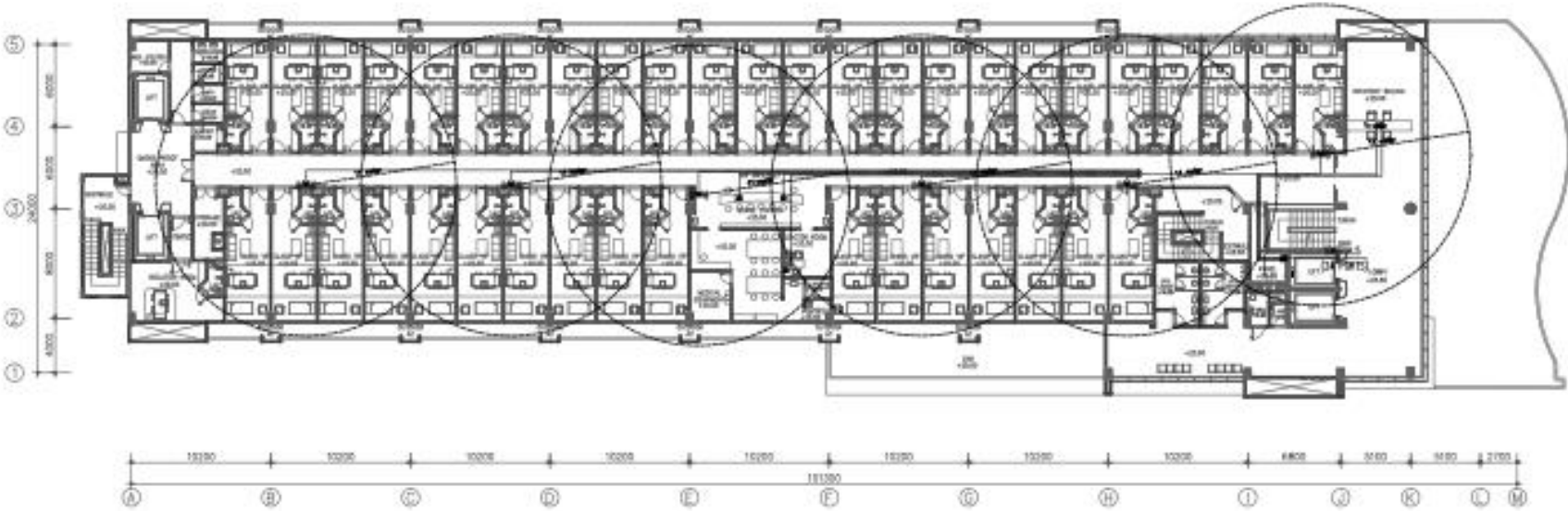
INSTALASI DATA & WIFI MENGGUNAKAN KABEL UTP CAT5
DALAM HOPE MPNET CONDUIT 40mm






RENCANA DATA & WIFI LANTAI 04 
SKALA 1:200

SIMBOL & KETERANGAN	
	OUTLET DATA PLUMBING
	OUTLET DATA PLUMBING
	WIFI ACCESS POINT 302.17m 3,404,750m-COVERAGE AREA 81meter

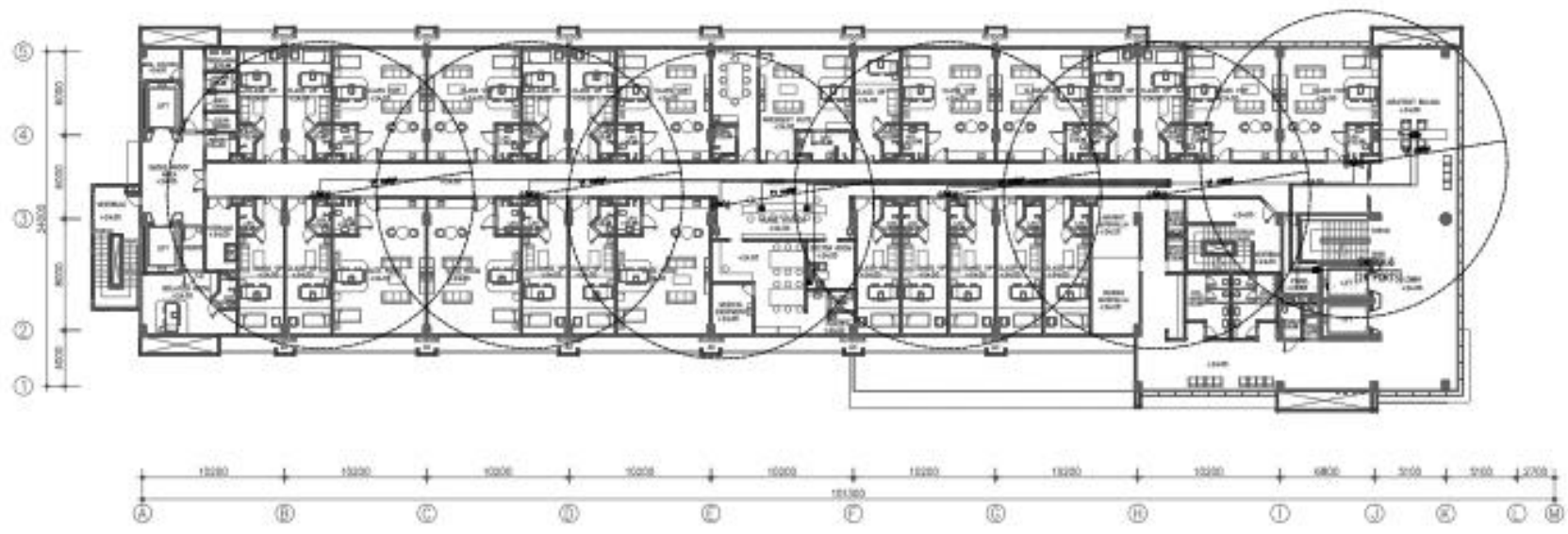
WITELAS DATA & WIFI MENGGUNAKAN KABEL UTP CAT5 DALAM HIGH IMPACT CONDUIT 125mm






RENCANA DATA & WIFI LANTAI 05
SKALA 1:200

SIMBOL & PETERANGAN	
	OUTLET DATA RUMAH DINDING
	OUTLET DATA RUMAH LAMPA
	WIFI ACCESS POINT 802.11n 2,4GHz/500m-COVERAGE AREA 60meter

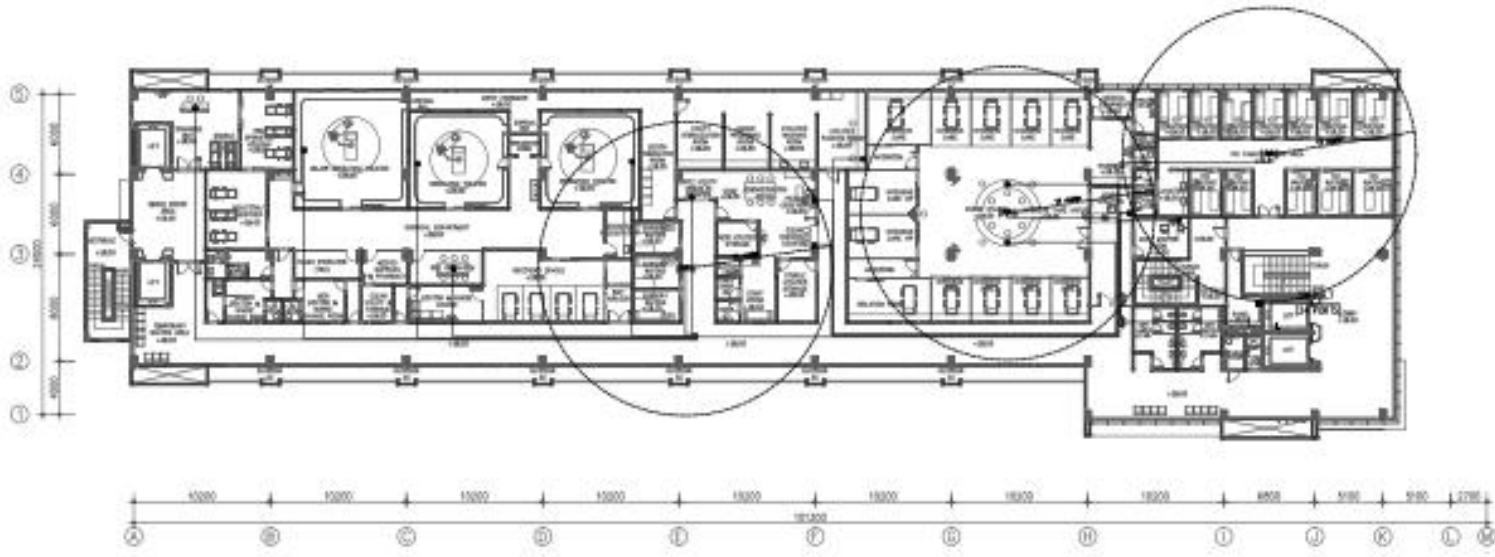
REKLAMASI DATA & WIFI MENYUNDAKAN SIMBOL LAY OUT
DALAM HIGH IMPACT CONSULT 620mm




RENCANA DATA & WIFI LANTAI 06
SKALA 1:200

SMBL. & KETERANGAN	
	OUTLET DAM RUMAH DRING
	OUTLET DAM RUMAH LAYAN
	WIFI ACCESS POINT BSL115 LAKSI/50M-COVERAGE AREA 40meter

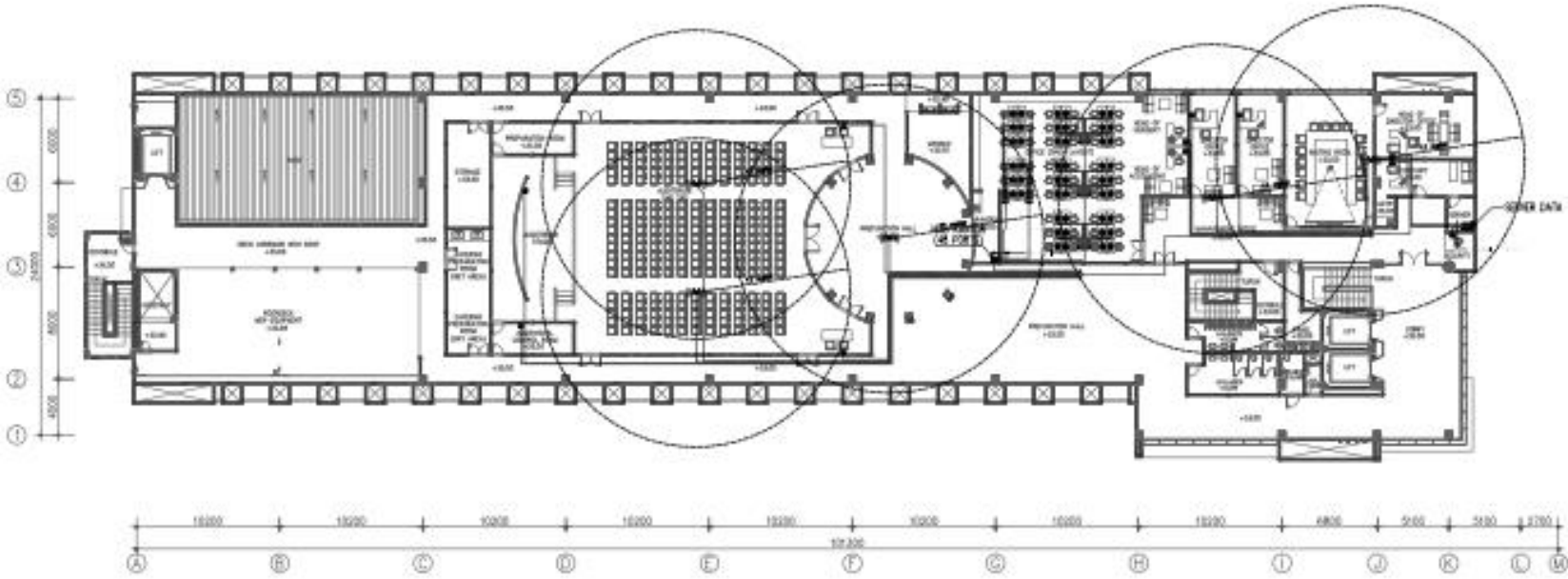
KELOMPOK DATA & WIFI MERUPAKAN PANEL 10P DATA
DALAM HIGH IMPACT CONDUIT 40mm



RENCANA DATA & WIFI LANTAI 07 
SKALA 1:200

SIMBOL & KETERANGAN	
	BULET DATA RIAS DINDING
	BULET DATA RIAS LANTAI
	WIFI ACCESS POINT 802.11n 2,4GHz/5GHz - COVERAGE AREA 10meter

INSTALASI DATA & WIFI MENGGUNAKAN KABEL UTP DATA
DALAM HIGH IMPACT CONDUIT 405mm



RENCANA DATA & WIFI LANTAI 08
SKALA 1:200

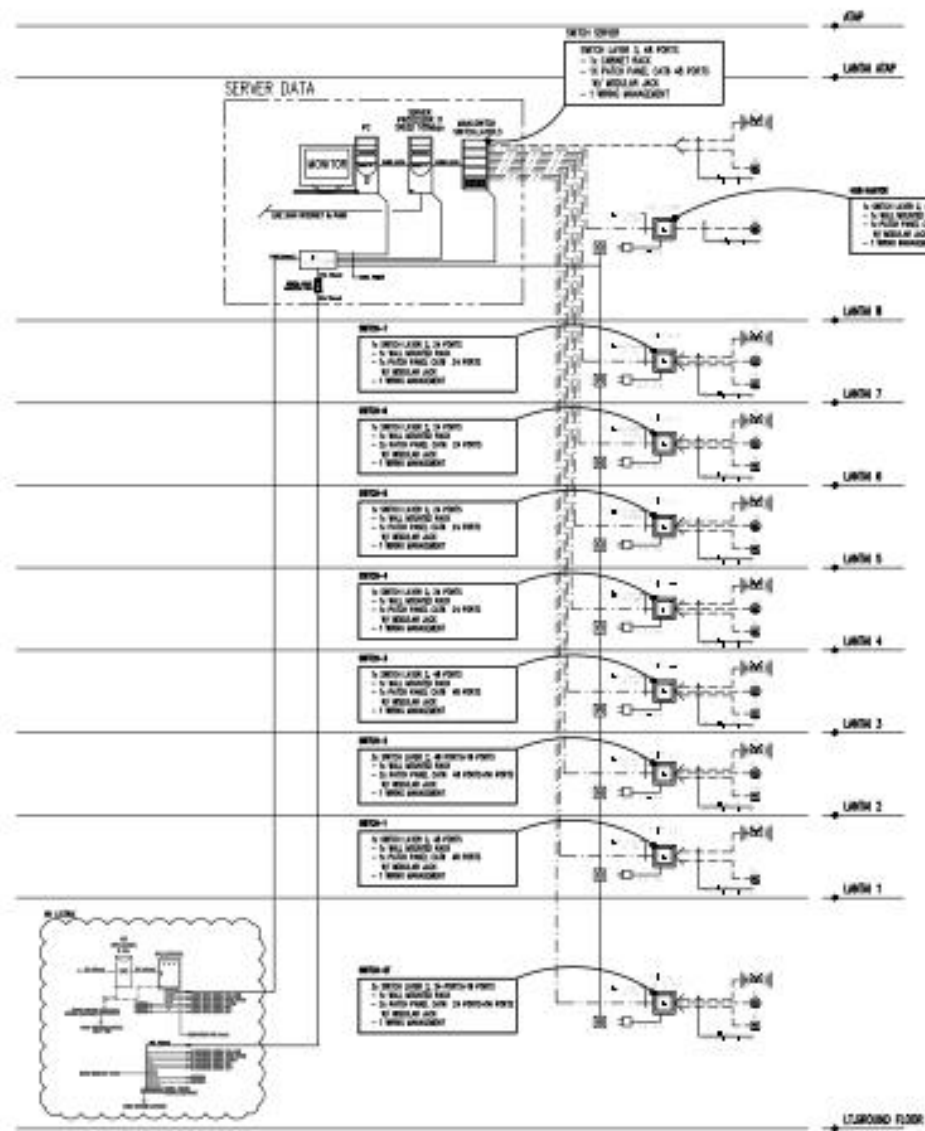
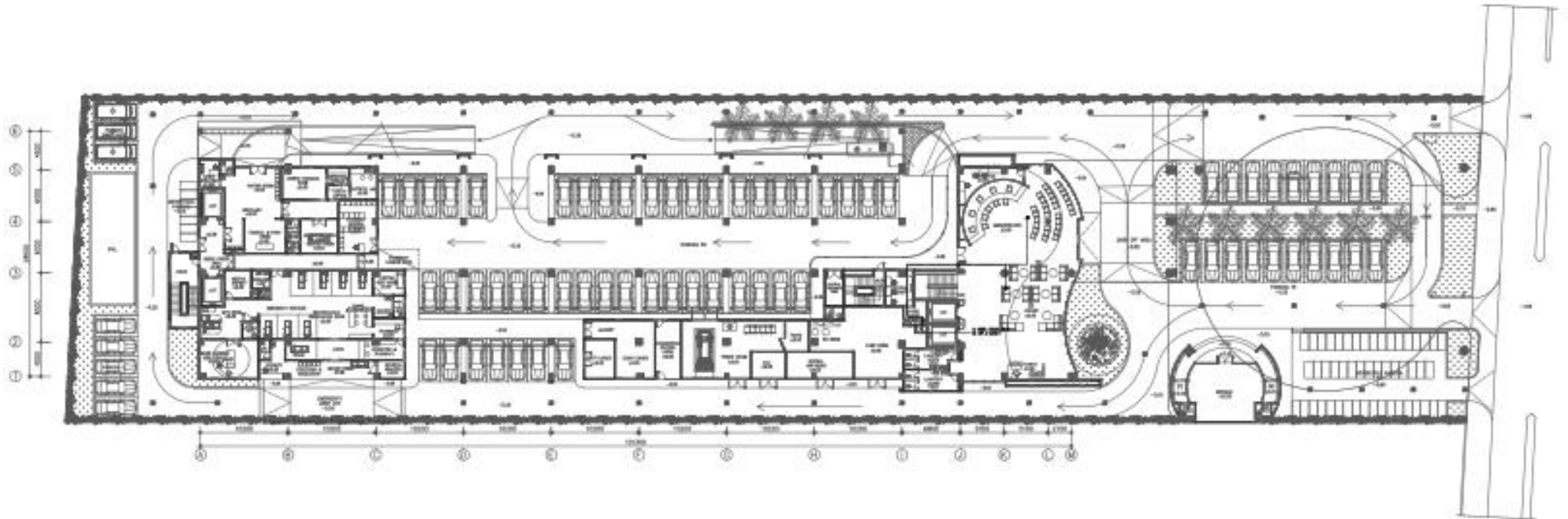


DIAGRAM SKEMATIK DATA & WIFI
SKALA : NTS

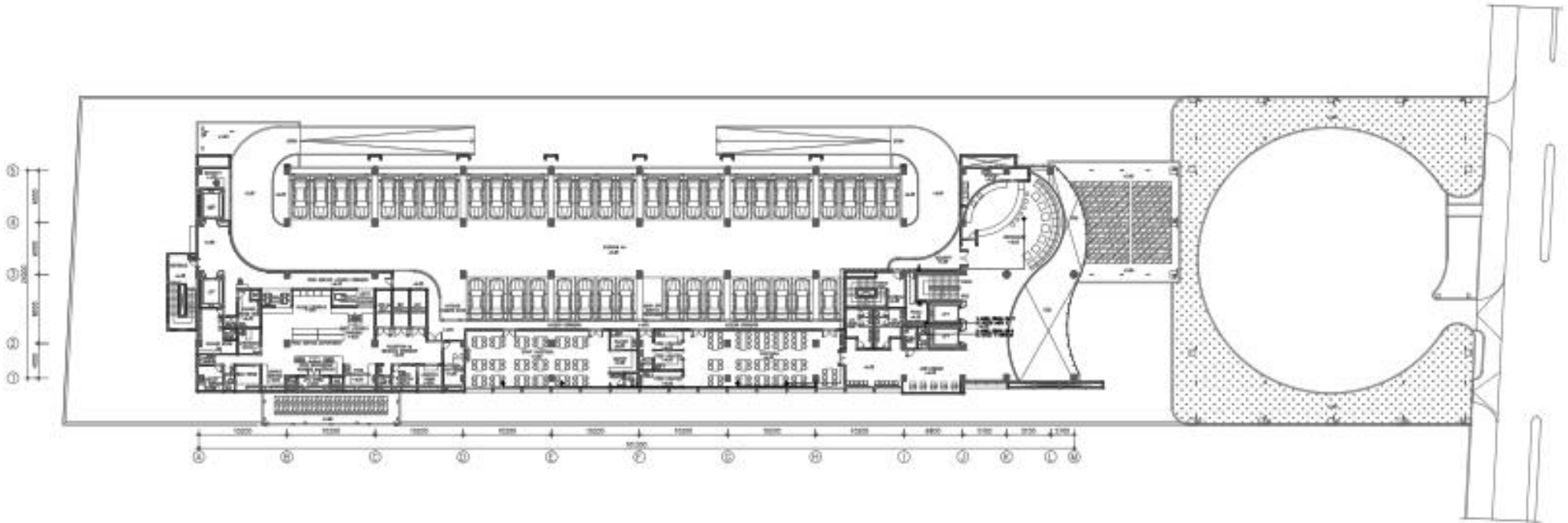
SAMBUNG & KETERANGAN	
●	LOKET TV
⊙	RUANG DWI + BINTI
⊞	LOKASI/LOKASI + BINTI
SAMBUNG KETERANGAN	
---	SAMBUNG LANTAI 100
---	SAMBUNG LANTAI 101



RENCANA MATV GROUND FLOOR 
 SKALA 1:250

SAMBUNGAN & KETERANGAN:	
●	OUTPUT TV
⊙	RUANG TV + NMT
⊞	LOKASI/SHIFTER & NMT

SAMBUNGAN INSTALASI:	
---	SAMBUNGAN COAXIAL 802
---	SAMBUNGAN COAXIAL 801

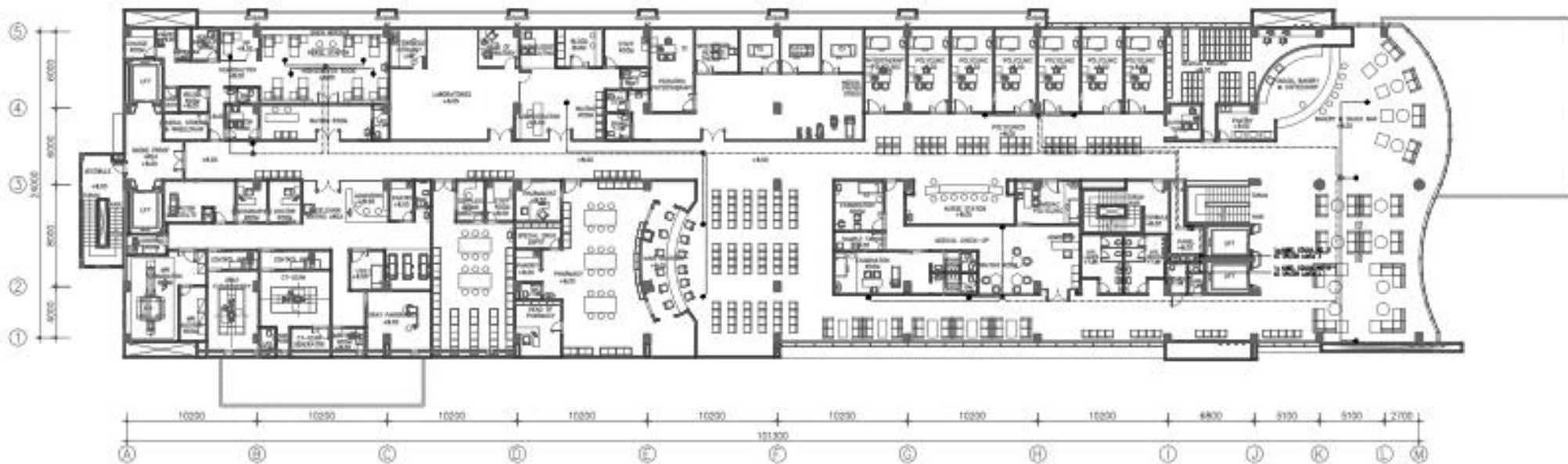


RENCANA MATV LANTAI 01
 SKALA 1:250

SMBOL & KETERANGAN	
●	OUTLET TV
①	BEKOR 3P 4 WNG
⊞	COUPLER/SPLITER 4 WNG

KABEL INSTALASI:

- KABEL COAXIAL RG6
- - - KABEL COAXIAL RG11

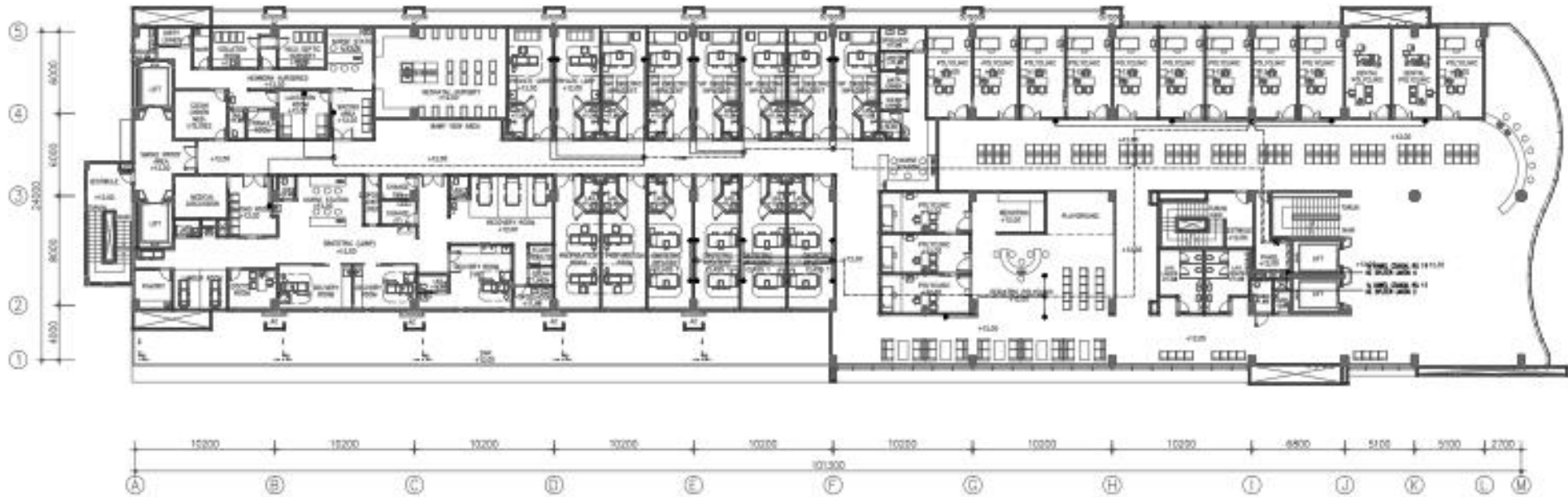


RENCANA MATV LANTAI 02
SKALA 1:200

SIMBOL & PETERANGAN	
●	OUTLET TV
⊕	INDOOR TM 4 WAYS
⊞	COUPLER/SPLITTER 4 WAYS

KABEL INSTALASI:

- KABEL COAXIAL RG6
- - - KABEL COAXIAL RG11



RENCANA MATV LANTAI 03 
 SKALA 1:200

SAMB. & KETERANGAN	
●	OUTLET TV
Ⓢ	INDOOR TAP 4 WAYS
Ⓜ	COUPLER/SPLITER 4 WAYS

KABEL INSTALASI:

- KABEL COAXIAL RG6
- - - KABEL COAXIAL RG11

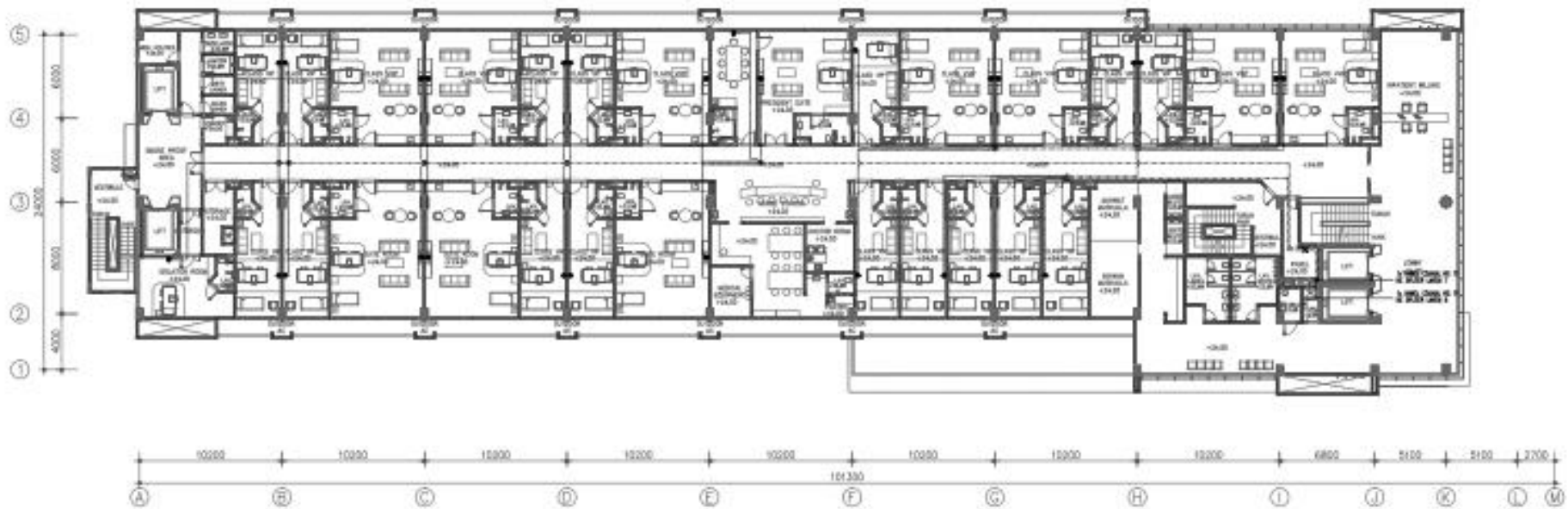


RENCANA MATV LANTAI 04 ↗
SKALA 1-200

SIMBOL & KETERANGAN	
●	OUTLET TV
⊕	INDOOR TAP & WMS
⊞	COUPLER/SPLITTER & WMS

KABEL INSTALASI:

- KABEL COAXIAL RG6
- - - KABEL COAXIAL RG11

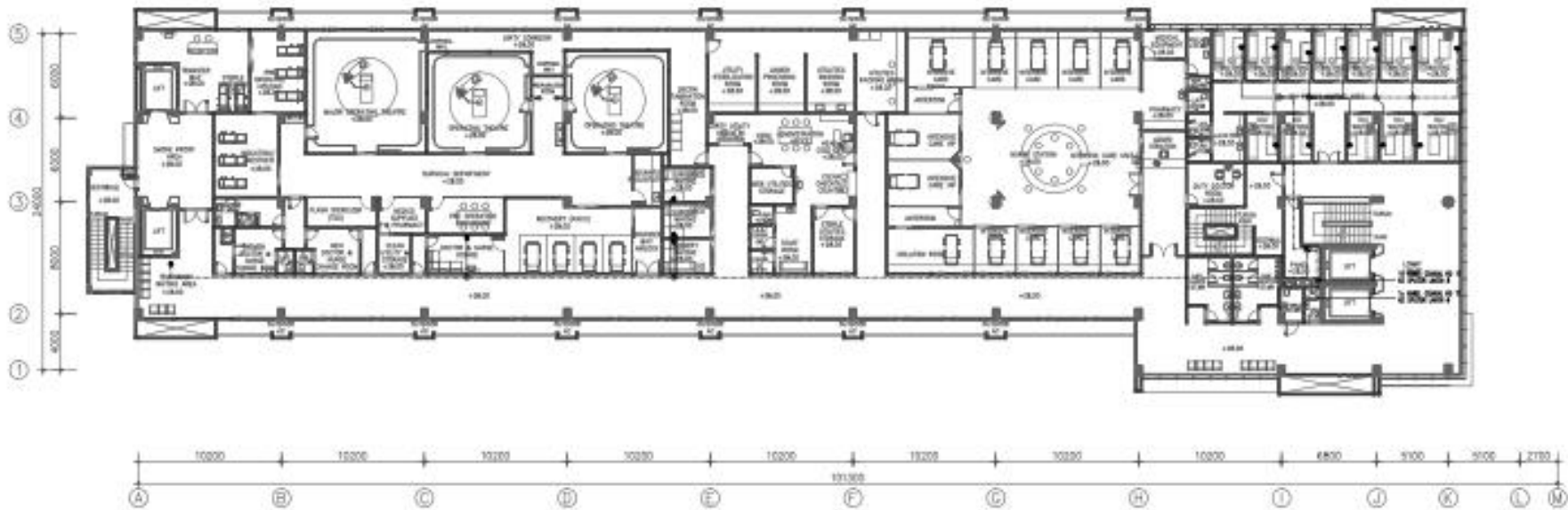


RENCANA MATV LANTAI 06
SKALA 1:200

SIMBOL & KETERANGAN	
●	OUTLET TV
⊙	INDOOR UAP 4 WAY
⊞	COUPLER/SPLITER 4 INYI

KABEL INSTALASI:

- KABEL COAXIAL RG6
- - - - KABEL COAXIAL RG11

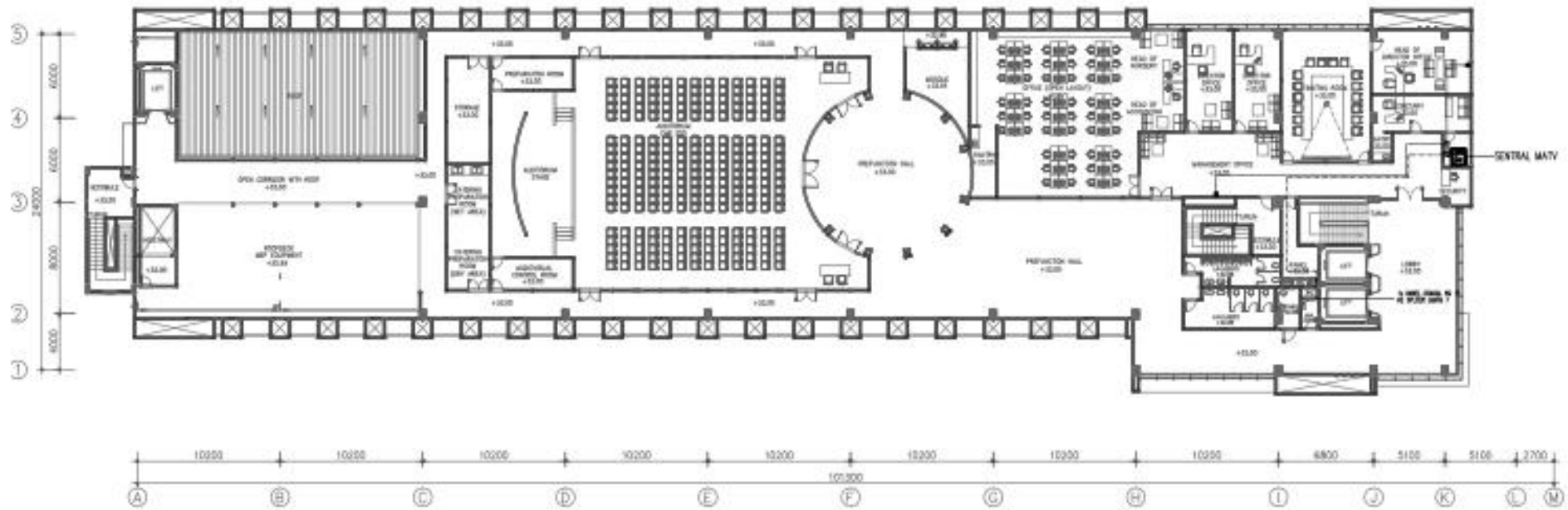


RENCANA MATV LANTAI 07
SKALA 1:200

SIMBOL & KETERANGAN	
●	OUTLET TV
Ⓛ	INDOOR INP 4 WAYS
Ⓜ	COUPLER/SPLITER 4 WAYS

KABEL INSTALASI:

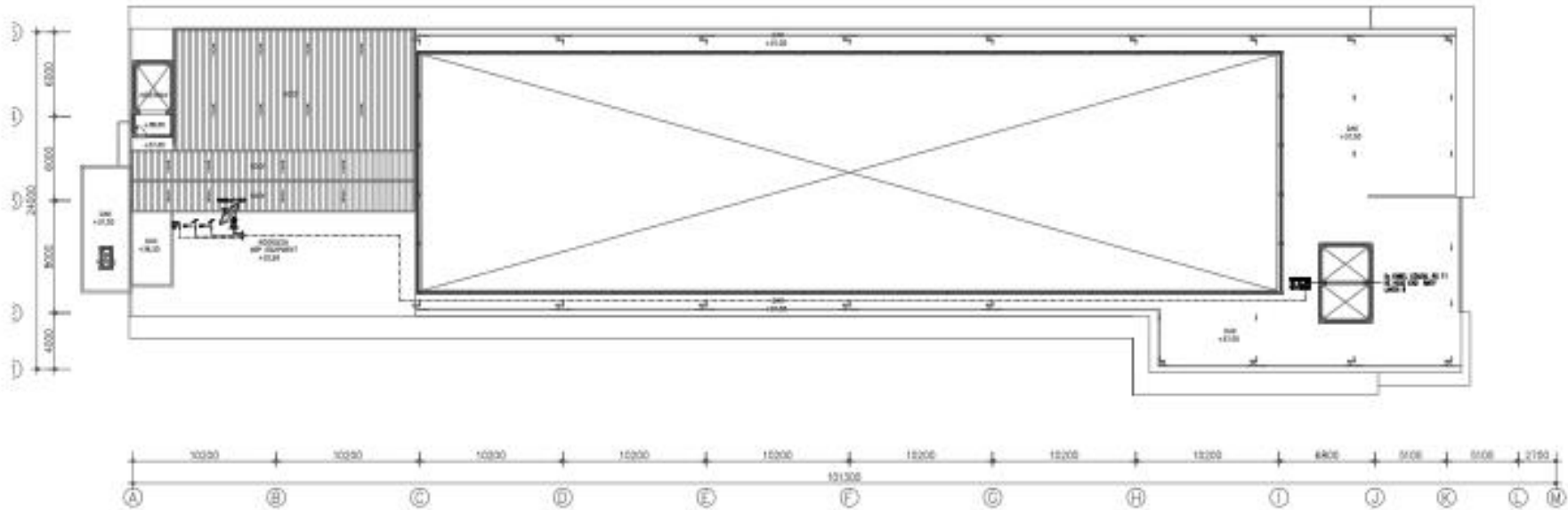
- KABEL COAXIAL RG6
- - - KABEL COAXIAL RG11



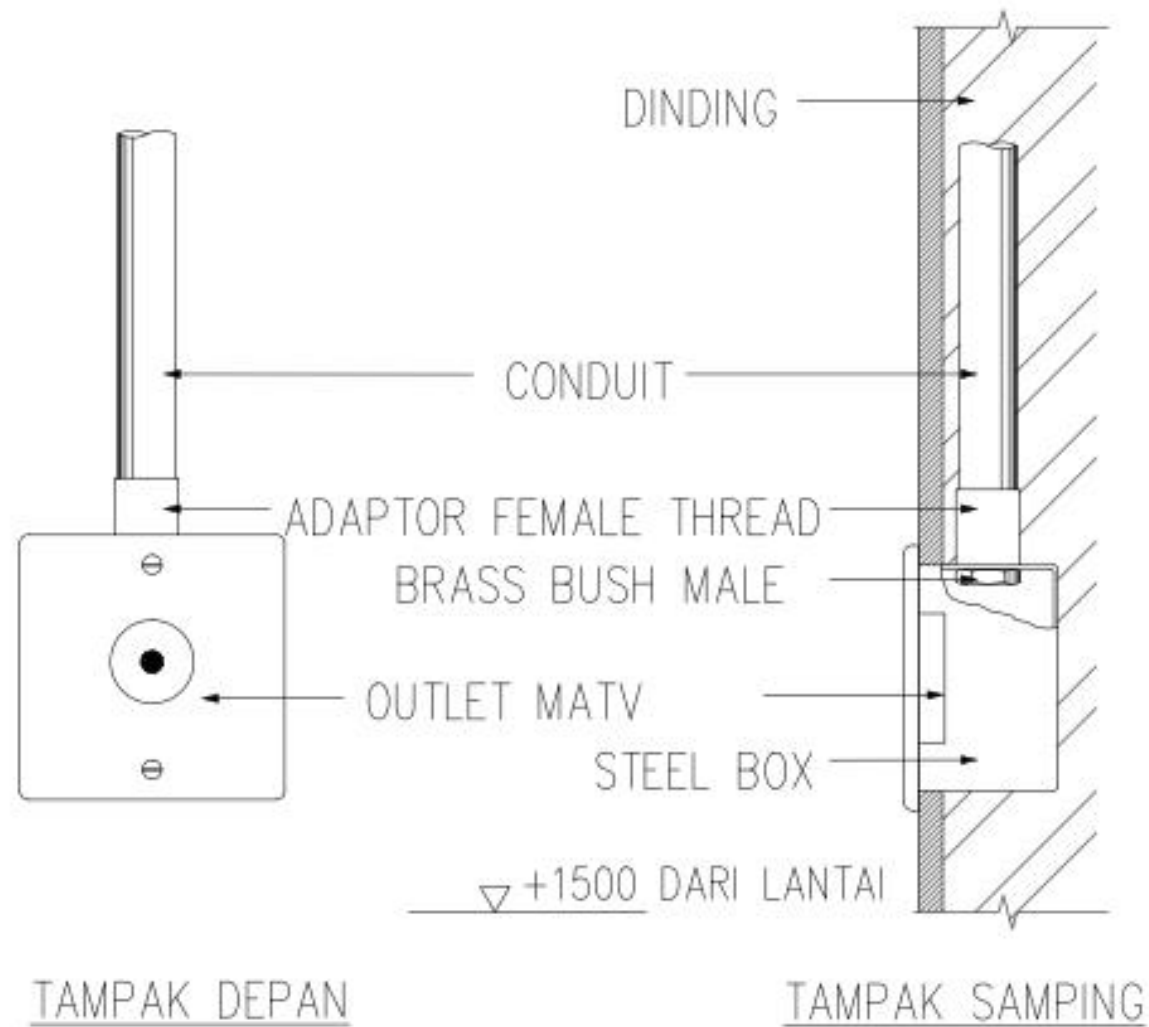
	SIGNAL & KETERANGAN
▶	BOOSTER AMPLIFIER
M	MASTER-HEAD AMPLIFIER
VF	VERY HIGH FREQUENCY
UH	ULTRA HIGH FREQUENCY
F	INTERMEDIATE FREQUENCY
PD	POWER DIVIDER
RD	RECEIVER DIGITAL
M	VSB MODE MODULATOR
PGA	PROGRAMMABLE GAIN AMPLIFIER
C	COMBINER

KABEL INSTALASI:

----- KABEL COAXIAL RG11



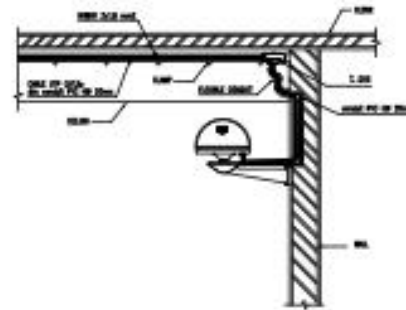
RENCANA MATV LANTAI ATAP
SKALA 1:200



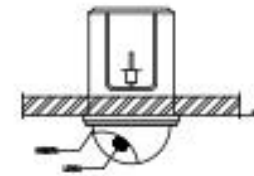
DETIL PEMASANGAN OUTLET TV DINDING

SKALA

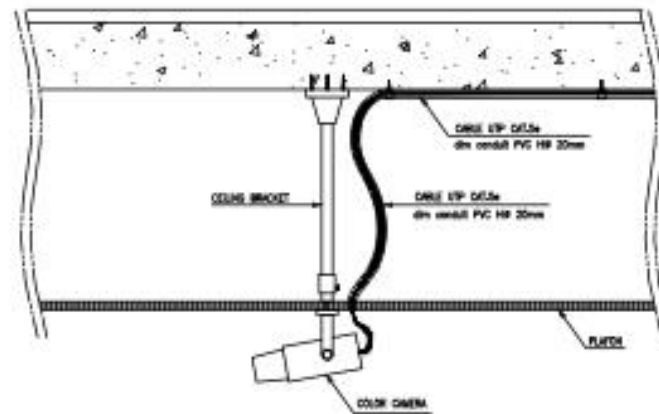
NTS



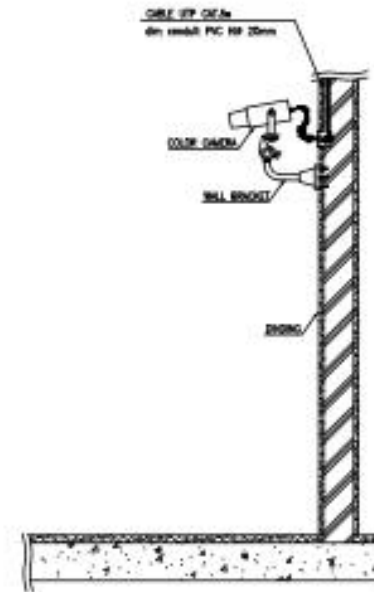
DETAIL CCTV PAN TILT & ZOOM
SCALE : N T 5



DETAIL CCTV TYPE DOME CAMERA
SCALE : N T 5



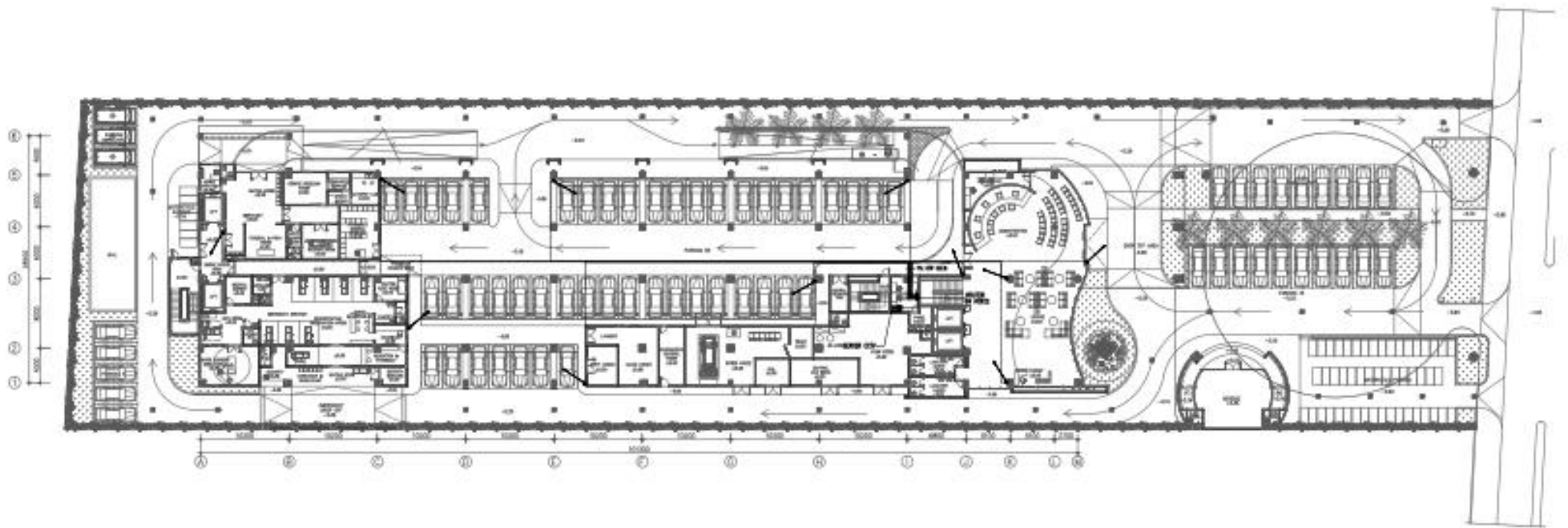
CAMERA INSTALLATION DETAIL
(CEILING MOUNTING)



DETAIL CCTV TYPE FIXED CAMERA
SCALE : N T 5

SIMBOL & KETERANGAN	
⊙	FIXED DOME COLOR IP CAMERA (FD)
⊞	FIXED BULLET COLOR IP CAMERA W/ OUTDOOR HOUSING (FB)

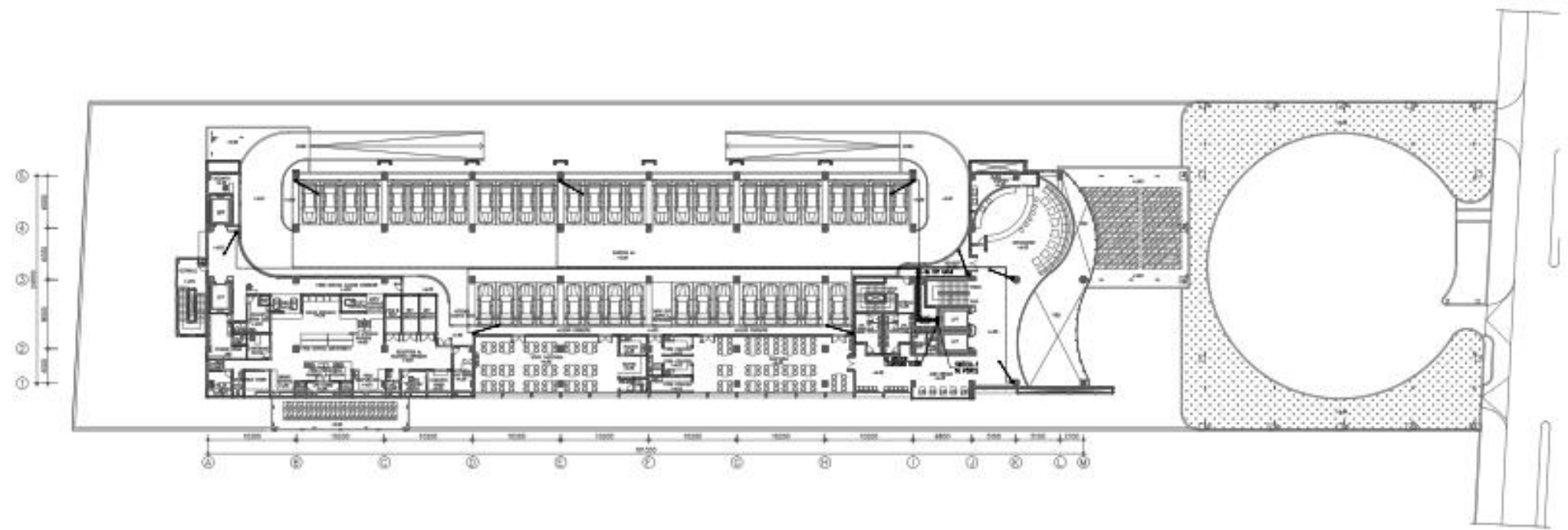
INSTALASI CCTV MENGGUNAKAN KABEL
LEIF CABLE DALAM HIGH IMPACT CONDUIT 40mm



RENCANA CCTV GROUND FLOOR 
SKALA 1:250



SIMBOL & KETERANGAN	
	FIXED DOME COLOR IP CAMERA (4E)
	FIXED BULLET COLOR IP CAMERA W/ OUTDOOR HOUSING (4C)

INSTALASI CCTV MENGGUNAKAN KABEL
UTP CAT5 DALAM HIGH IMPACT CONDUIT 40mm

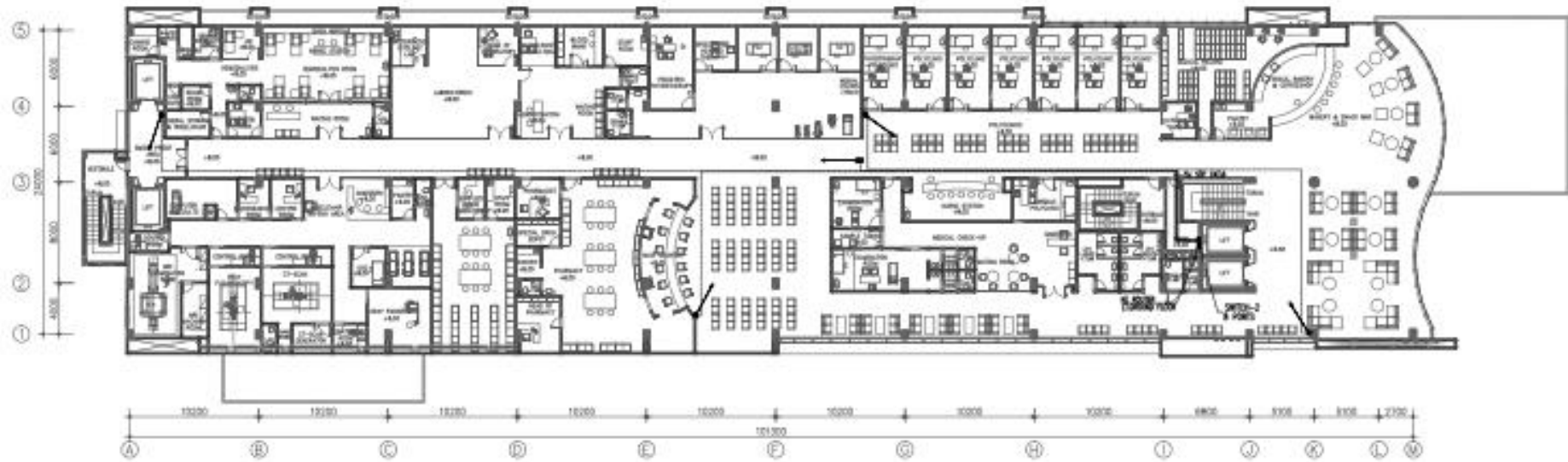


RENCANA CCTV LANTAI 01

SKALA 1:250

SIMBOL & KETERANGAN	
	FIXED DOME COLOR IP CAMERA (x4)
	FIXED BOX COLOR IP CAMERA W/ HOOD HOUSING (x2)

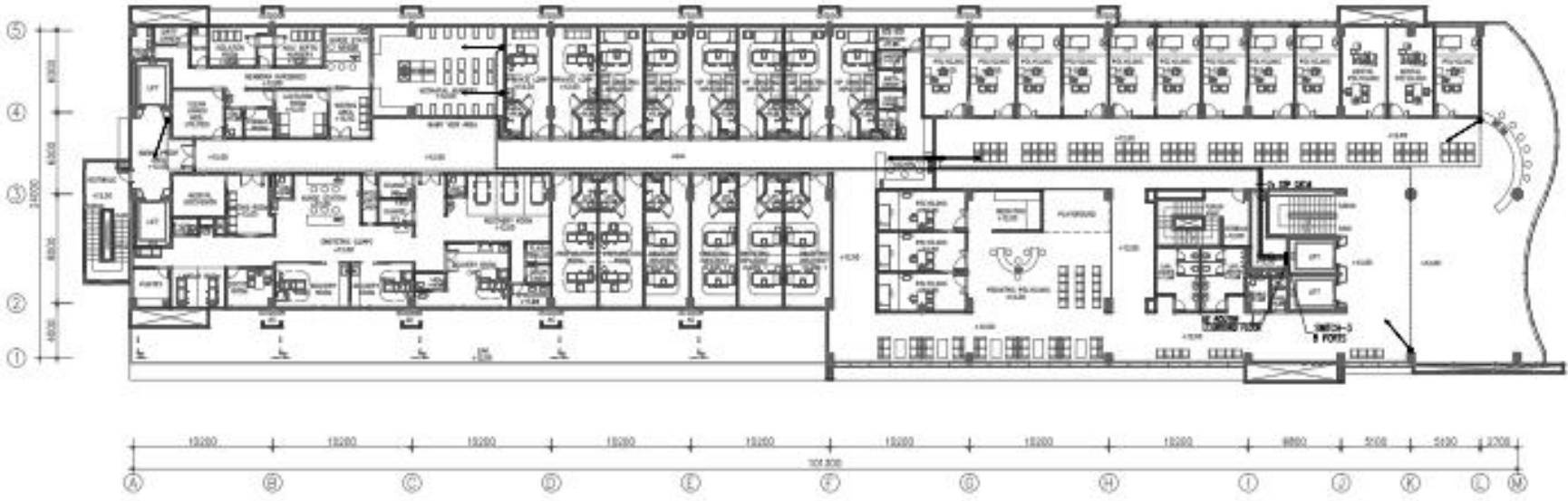
NOTELAS: CCTV MENGGUNAKAN KABEL
 87P GABUNG DALAM HIGH IMPACT CONDUIT 40mm



RENCANA CCTV LANTAI 02 
 SKALA 1:200

SIMBOL & KETERANGAN	
	FIXED DOME COLOR IP CAMERA (HD)
	FIXED BOX COLOR IP CAMERA W/ INDOOR HOUSING (HD)

INSTALASI CCTV MENGGUNAKAN ANEKA
LEF CABLE DALAM HIGH IMPACT CONDUIT 42mm




RENCANA CCTV LANTAI 03

SKALA 1:200

SIMBOL & KETERANGAN	
	FIXED DOME COLOR IP CAMERA (40)
	FIXED BOX COLOR IP CAMERA N/1 ROOM HOUSE (40)

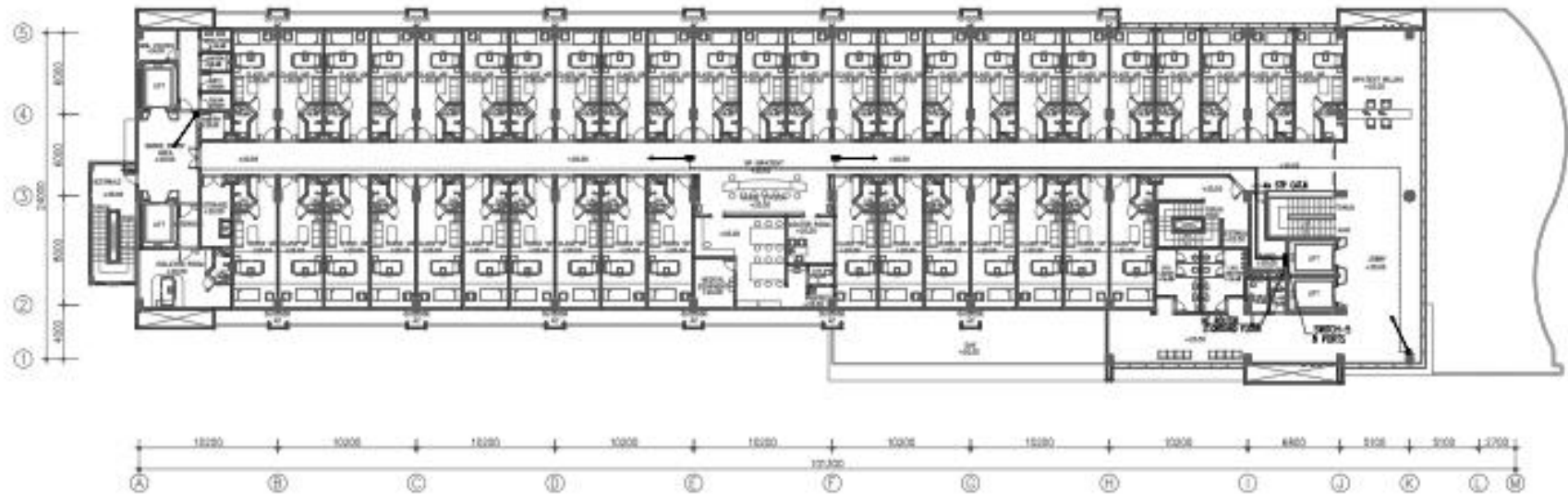
INSTALASI CCTV MENGGUNAKAN KABEL
 UTP CAT5 DALAM RIGID IMPACT CONDUIT 40mm



RENCANA CCTV LANTAI 04 
 SKALA 1:200

SIMBOL & KETERANGAN	
	FIXED DOME COLOR IP CAMERA (K1)
	FIXED BOX COLOR IP CAMERA W/ IRDOOR HOUSING (K2)

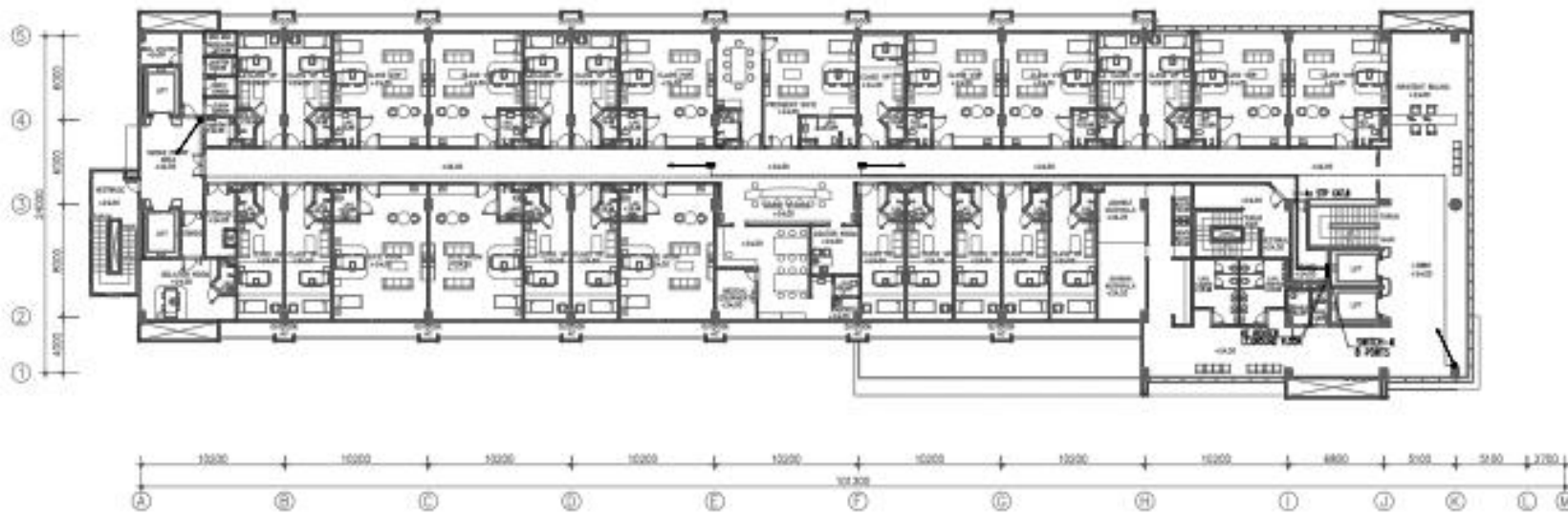
WISYATA CCTV MENGGUNAKAN KABEL UTP CAT5 DALAM RISI IMPACT CONDUIT 42mm



RENCANA CCTV LANTAI 05
SKALA 1:200

SIMBOL & KETERANGAN	
	FIXED DOME COLOR IP CAMERA (HD)
	FIXED BOX COLOR IP CAMERA w/ NIGHT HOUSING (HD)

NOTASI CCTV MENGGUNAKAN KABEL
 (TP) GAB. SALAM HIGH IMPACT CONDUIT #32mm

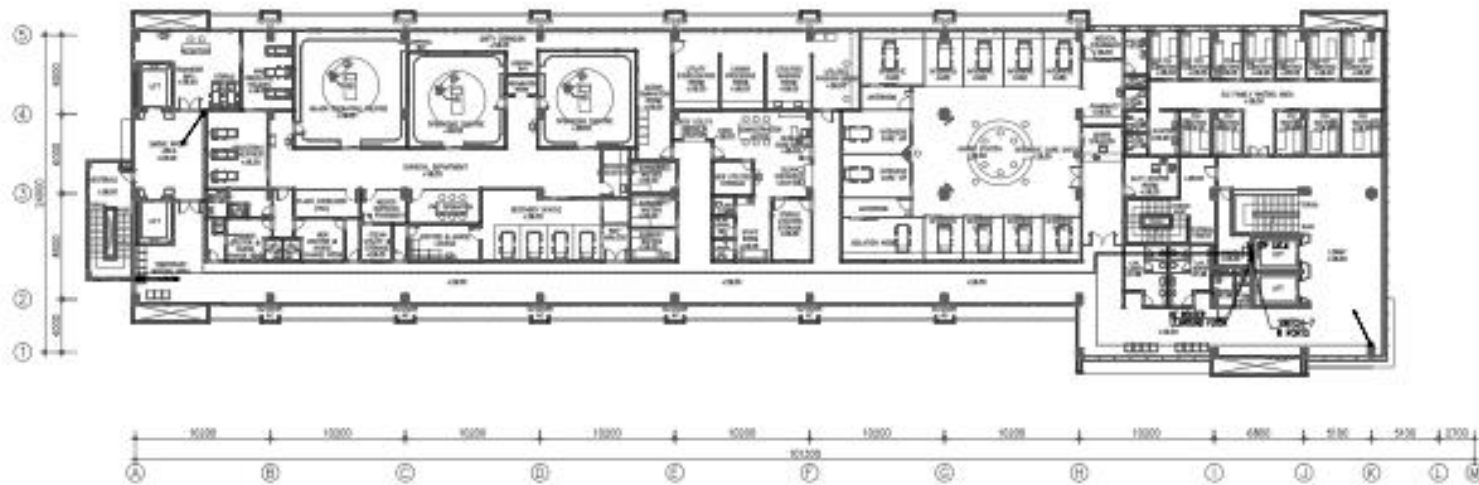


RENCANA CCTV LANTAI 06

SKALA 1:200

SMBOL & KETERANGAN	
●	TIKUP DOME COLOR W/ DOME (3x3)
■	TIKUP BOX COLOR W/ DOME W/ INDOOR HEADING (3x3)

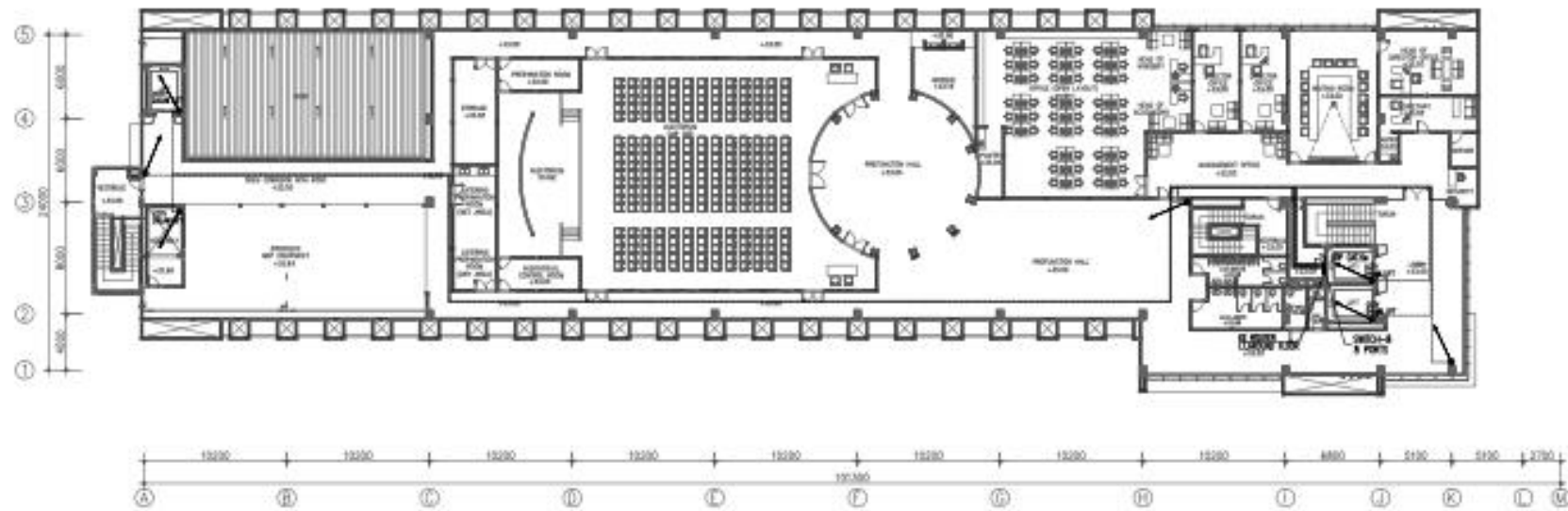
RENCANA CCTV MENGGUNAKAN KABEL
 UTP (SARIS) DAN HIGH IMPACT CONDUIT 40mm



RENCANA CCTV LANTAI 07 
 SKALA 1:200

SIMBOL & KETERANGAN	
	FIXED DOME COLOR IP CAMERA (4x)
	FIXED BOX COLOR IP CAMERA w/ NIGHT VISION (4x)

INSALASI CCTV MERIGORANGHABEL
 UPV CARS DALAM RUMAH IMPACT COMBLUT #30mm



RENCANA CCTV LANTAI 08
 SKALA 1:200

SIMBOL & KETERANGAN	
	FIXED DOME COLOR IP CAMERA (HD)
	FIXED BOX COLOR IP CAMERA W/ INDOOR HOUSING (HD)
	FIXED BULLET COLOR IP CAMERA W/ OUTDOOR HOUSING (HD)

PESTILASI CCTV MENGGUNAKAN KABEL UTP CAT6 DALAM HIGH IMPACT CONDUIT 40mm

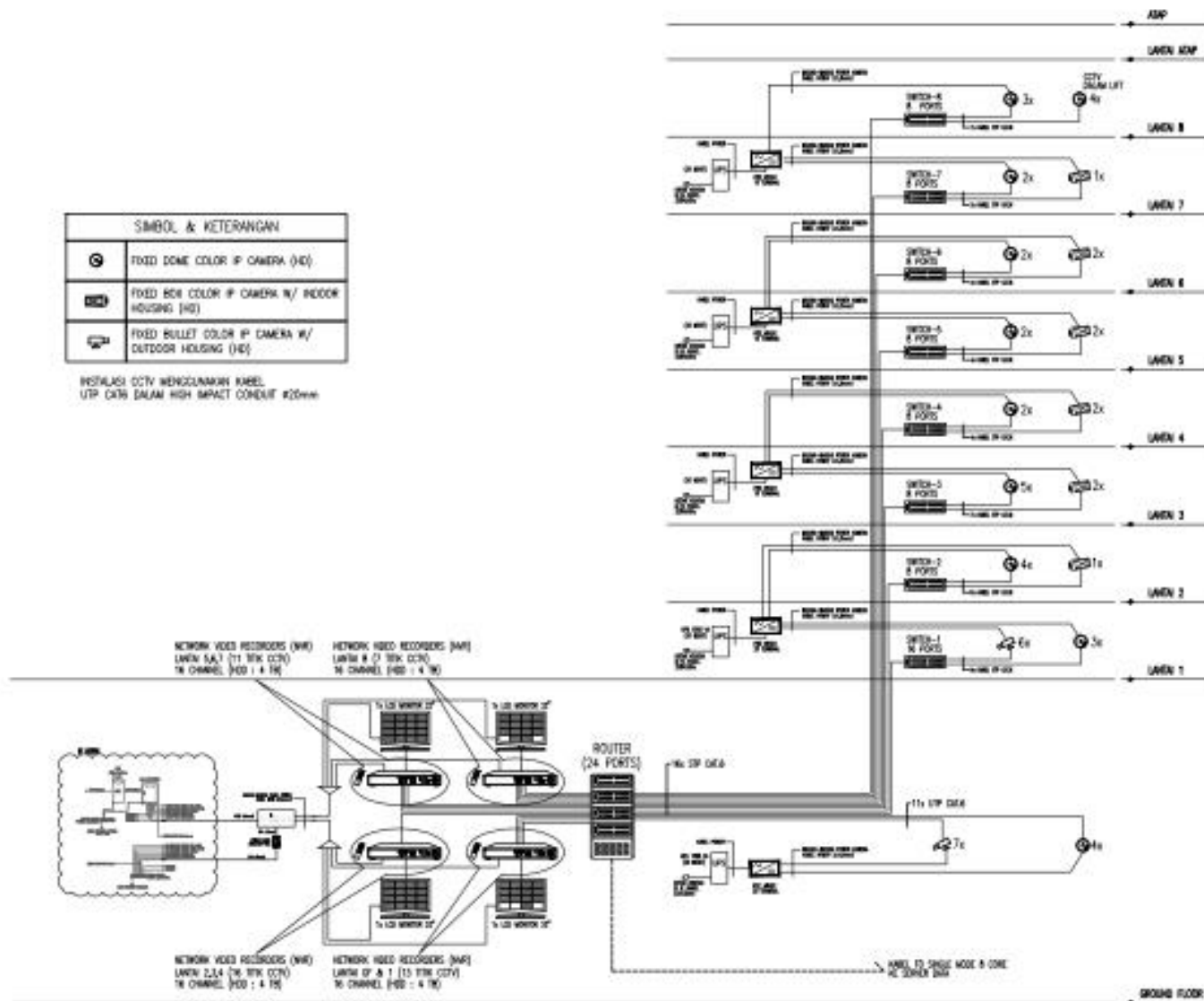
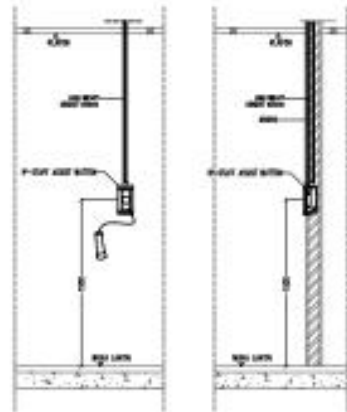
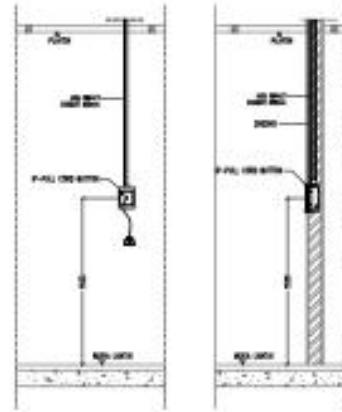


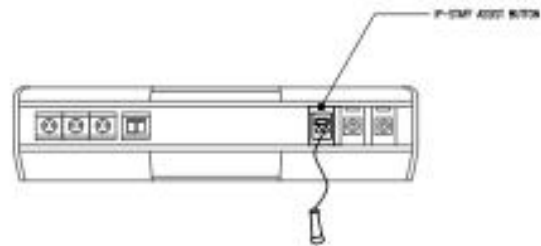
DIAGRAM SKEMATIK CCTV
SKALA : NTS



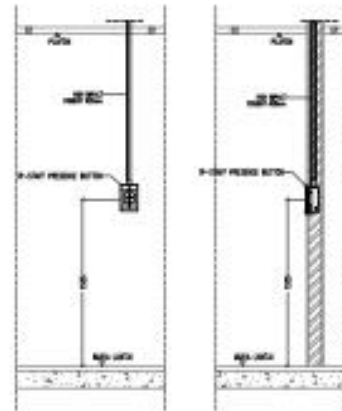
STANDAR DETIL PEMANGKAPAN
P-DEAF ASSET BUTON
1:100



STANDAR DETIL PEMANGKAPAN
P-DEAF ASSET BUTON
1:100



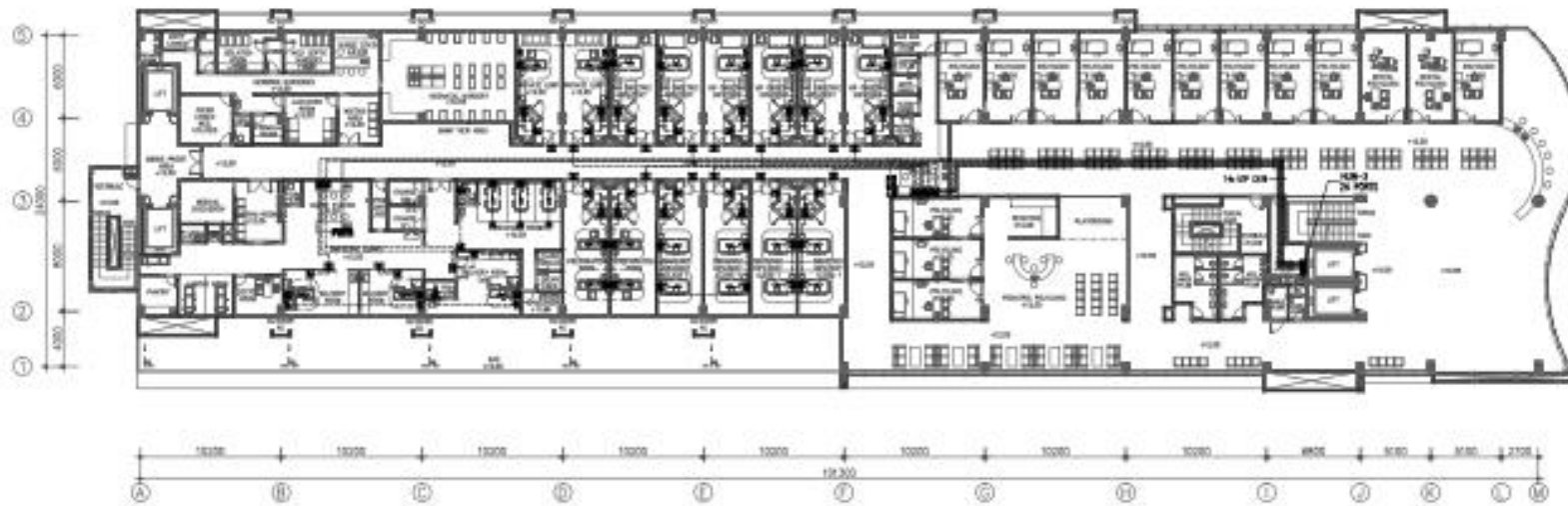
DETAILED VIEW OF THE
P-DEAF ASSET BUTON
1:100



STANDAR DETIL PEMANGKAPAN
P-DEAF ASSET BUTON
1:100

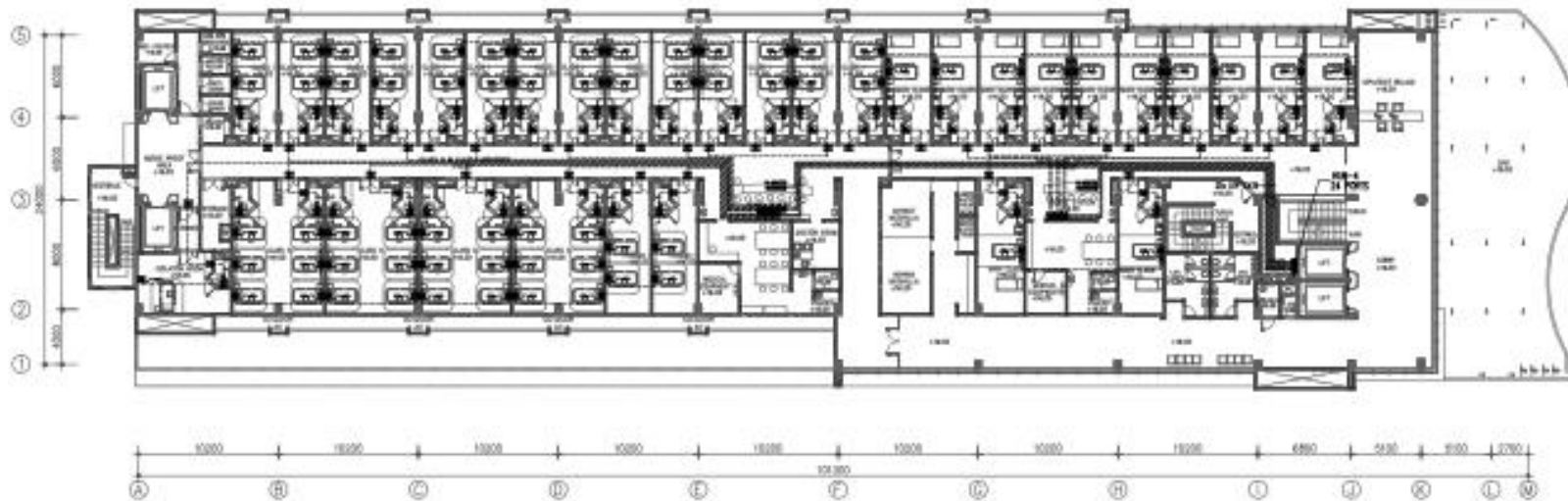
STANDAR DETIL NURSE CALL
SKALA : NTS

SIMBOL & KETERANGAN	
	F-Door Door Lamp
	F-Staff Presence Button
	F-Pull Cord Button
	F-Staff Assist Button e/Signal
	Single Color Lamp
	F-Annunciator Display
	F-CCI Router
	Ethernet Cable UTP Cable
	DC Power Cable 2x0.5mm
	AC Power Cable 3x0.5mm



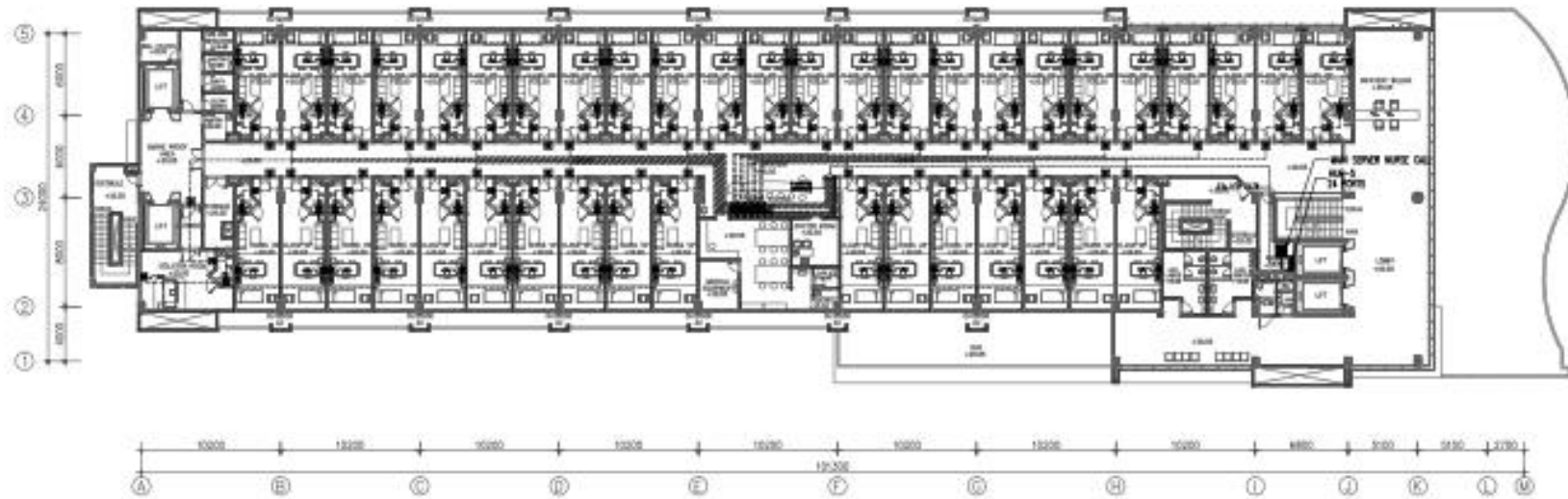
RENCANA NURSE CALL LANTAI 03
SKALA 1:200

SIMBOL & KETERANGAN	
	I-Over Door Lamp
	I-Staff Presence Button
	I-Staff Exit Button
	I-Staff Assist Button w/Socket
	I-Infrared Display
	I-CCT Router
	Ethernet Cable UTP Cat5e
	DC Power Cable 2x1.5mm
	AC Power Cable 3x2.5mm



RENCANA NURSE CALL LANTAI 04
 SKALA 1:200

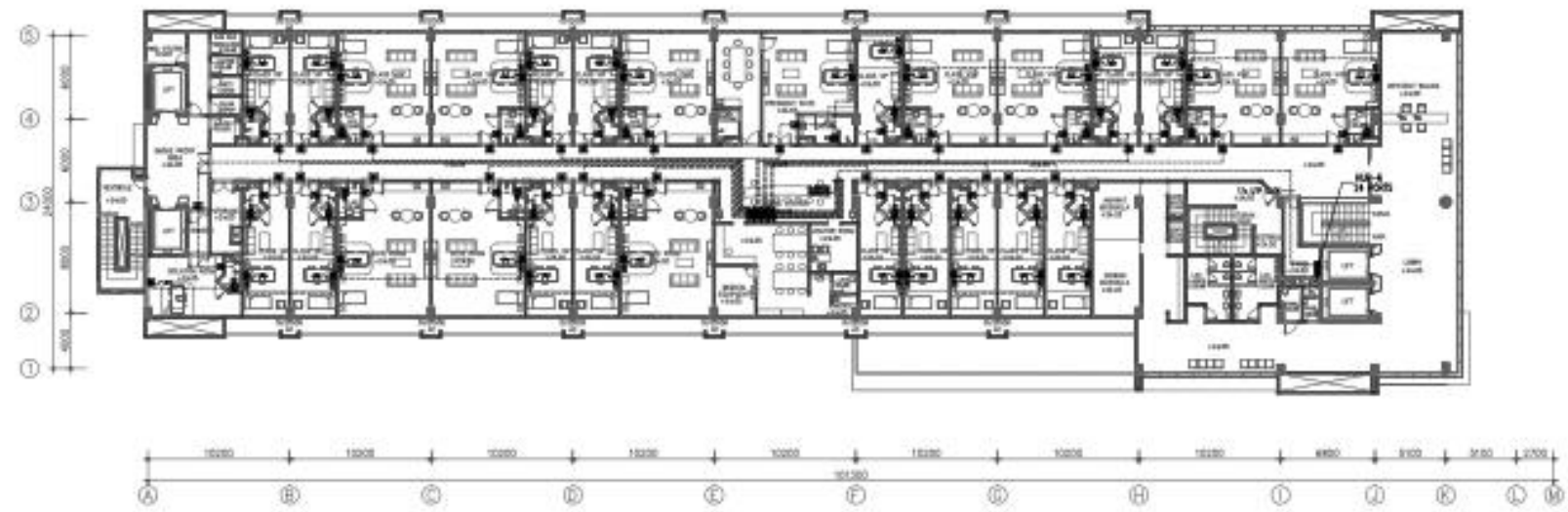
SIMBOL & KETERANGAN	
	P-Over Door Lamp
	P-Staff Presence Button
	P-Full Card Button
	P-Staff Assist Button w/Socket
	P-Annunciator Display
	P-ICU Room
	Main Server Nurse Call
	Ethernet Cable UTP Cat5e
	DC Power Cable 2x1.5mm
	AC Power Cable 3x2.5mm



RENCANA NURSE CALL LANTAI 05

SKALA 1:200

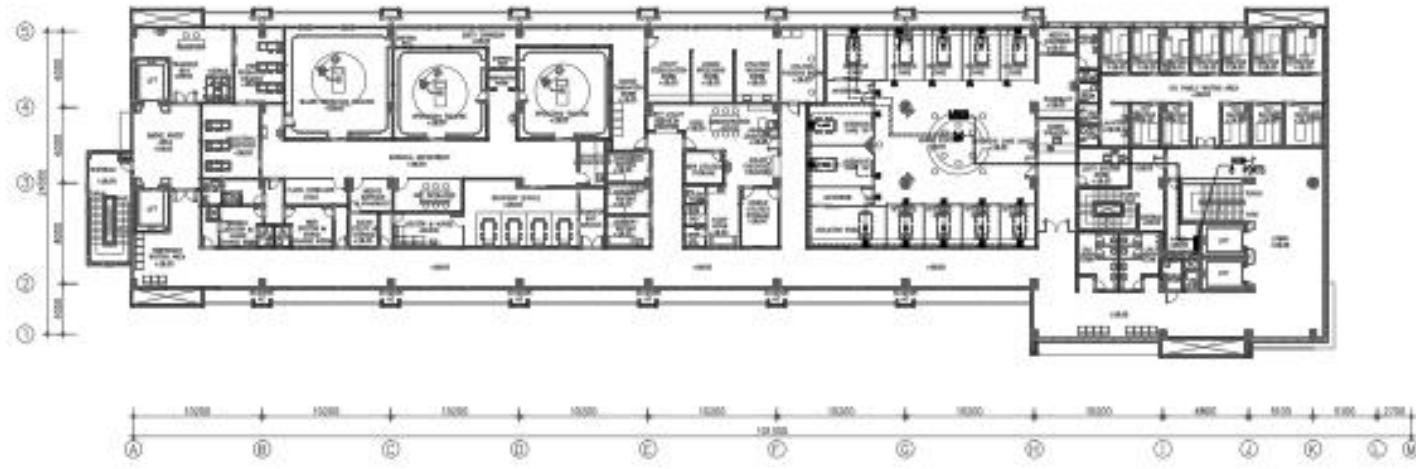
SIMBOL & KETERANGAN	
	P-Over Door Lamp
	P-Staff Presence Button
	P-Pull Cord Button
	P-Staff Assist Button w/Socket
	P-Aroundtable Display
	P-DCT Router
	Ethernet Cable UTP Cable
	DC Power Cable 2x1.5mm
	AC Power Cable 3x2.5mm



RENCANA NURSE CALL LANTAI 06

SKALA 1:200

SIMBOL & KETERANGAN	
	P-Staff Assist Button e/Socket
	Single Color Lamp
	P-accumulator Display
	P-CCU Router
	Ethernet Cable UTP Cable
	DC Power Cable 2x1.5mm
	AC Power Cable 3x2.5mm



RENCANA NURSE CALL LANTAI 07
 SKALA 1:200

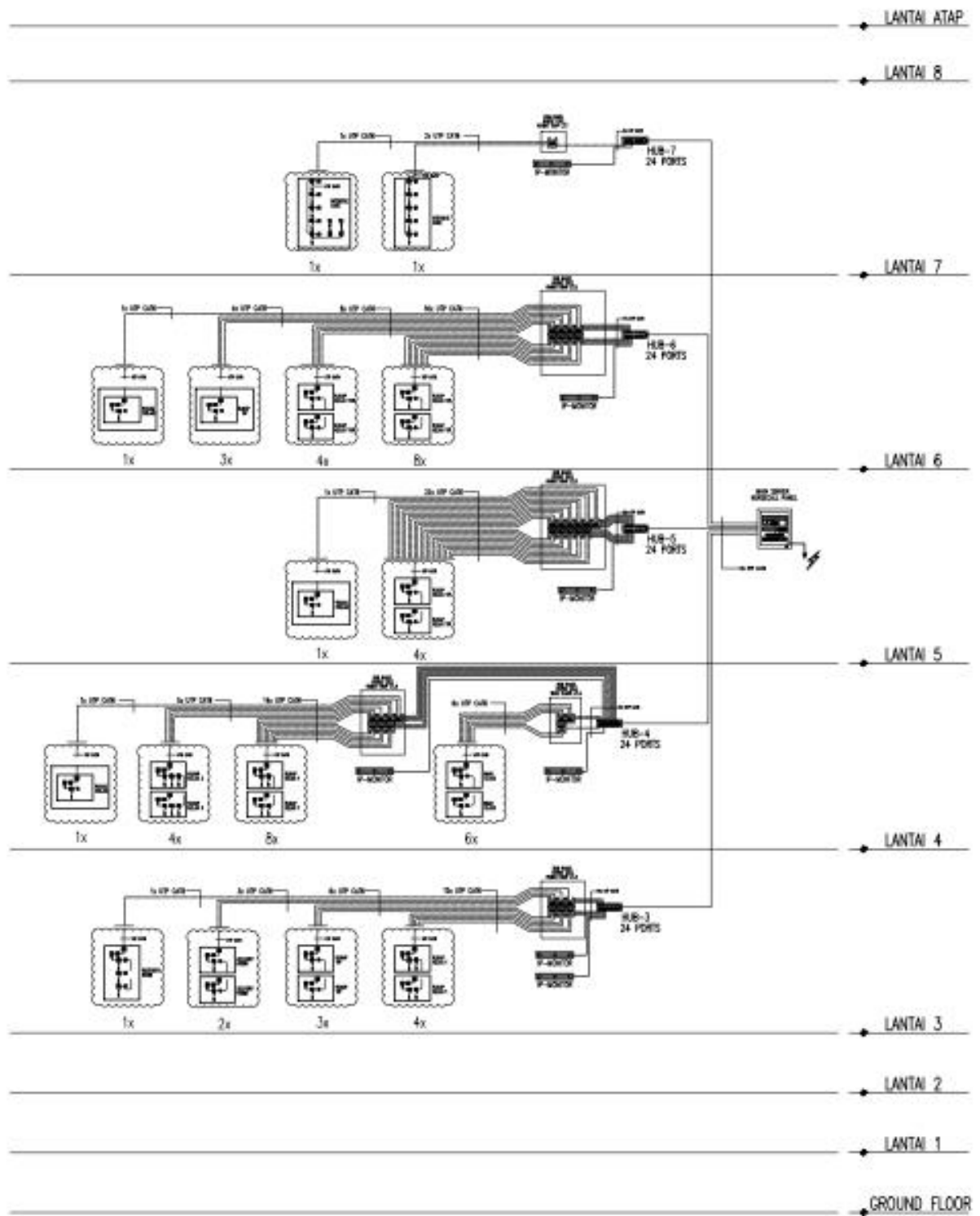


DIAGRAM SKEMATIK NURSE CALL
 SKALA : NTS 

**BROSUR &
SPESIFIKASI
PRODUK**



E-FSA

Intelligent Fire Alarm Systems
for Small Buildings

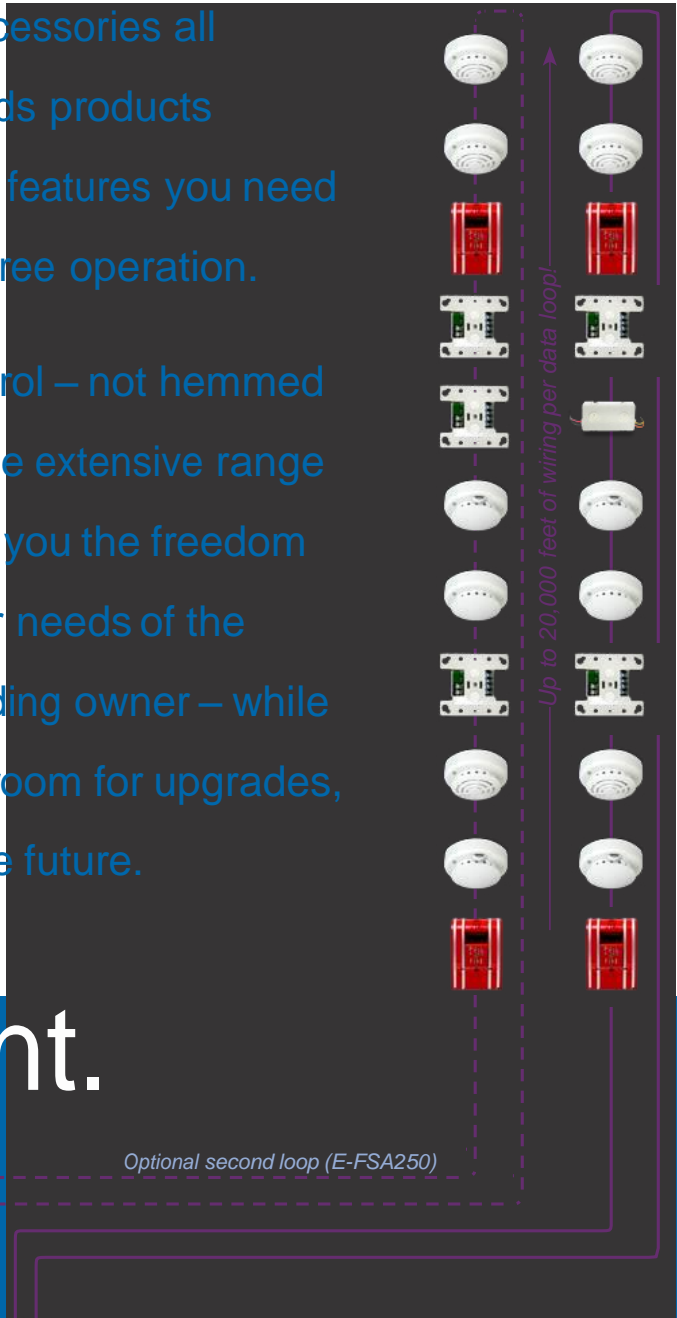


See what's possible now.

An EDWARDS brand.

With control panels, devices, and accessories all engineered to work in unison, Edwards products provide reliable performance and the features you need for successful installation and worry-free operation.

Best of all, E-FSA leaves you in control – not hemmed in by a limited product line. In fact, the extensive range of Edwards fire alarm products gives you the freedom to tailor each system to the particular needs of the building – and the budget of the building owner – while a robust feature set leaves plenty of room for upgrades, expansions, and retrofits long into the future.



Truly intelligent.

E-FSA250: one loop that supports up to 127 analog/addressable devices. Can be expanded to two loops. Each loop supports up to 127 detectors or 127 modules in any combination.

E-FSA64: one loop that supports up to 64 analog/addressable devices of any type.



EDWARDS

Trusted fire alarm solutions since 1872.



This trust, earned over many decades, is demonstrated today by the fact that Edwards fire alarm technology continues to be the number one choice to protect some of the world's most impressive structures – from Egypt's Bibliotheca Alexandrina Museum, to the modern-day sphinx at the Luxor Hotel in Las Vegas.

Now, that same rock-solid reliability built into every Edwards fire alarm system is available for small to mid-size buildings. The new E-FSA analog fire alarm system, available from Edwards Signaling, means fire alarm systems just got a whole lot smarter, more responsive, and easier to install & maintain than ever before.

From distributed intelligence and independent alarm processing that allows the use of existing wiring, to wire runs of up to 20,000 feet per device loop, and ground fault detection by device, E-FSA represents a

whole new generation of small building solutions.

This next generation fire panel offers the tremendous power and flexibility of remote diagnostics via IP Ethernet; the reliability of intelligent multi-sensor detectors with environmental compensation; and, the architecturally pleasing design of our low profile Genesis line of signals.

But these industry-leading innovations tell only a small fraction of the story. When you choose E-FSA, not only do you get outstanding value from an easy to install and simple to program fire alarm panel; you'll benefit from a whole family of "smart" control, detection, and notification appliances finely tuned to work together as one— "smart devices" engineered and tested to function as a single cohesive system. Built on a proven reputation and legacy of trust, and meeting the needs of the future--- Edwards is changing the face of small building fire detection.



*Edwards E-FSA:
a cohesive family
designed to work in
concert to deliver
the optimum level of
performance for every
application.*



Get Smart.

Intelligent analog control
for your small to mid-size applications

UL 864 9th Edition Listed

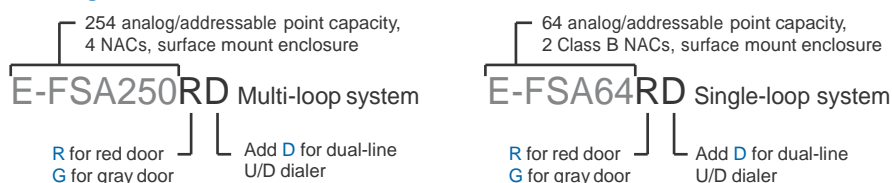
- *E-FSA250 Point Analog/addressable Life Safety Control Panels*
Data sheet S85005-0130
- *E-FSA64 Point Analog/addressable Life Safety Control Panels*
Data sheet S85005-0131

E-FSA life safety systems offer the reliability of analog/addressable fire detection for small to mid-sized applications. Built to provide years of trouble-free operation, these systems offer rotary device addressing, *PinPoint™* ground fault point ID, optional Ethernet® port, and a full line of easy-to-configure option cards and modules including a dual-line upload/download dialer.

E-FSA64 control panels provide one Class A or B device loop that supports up to 64 device addresses, and two 2.5-amp Class B Notification Appliance Circuits (NACs). Optional Class A NAC device wiring is available.

E-FSA250 control panels provide one Class A or Class B analog/addressable device loop that supports up to 127 devices. A second 127-point loop may be added to the E-FSA250 to expand total system capacity to up to 254 device addresses that can be mixed between any type of device, such as detectors and modules. The panel includes four Class B or two Class A NACs.

Ordering Information



Option Cards

SA-DACT	Dual-line upload/download dialer & modem, supports Contact ID.
SA-232	Serial Port (RS-232), for connection to printers & computers.
SA-ETH	Ethernet port for diagnostics and programming.
XAL127	Loop Expansion Module. Adds 2nd loop to E-FSA250, 254 point capacity.
SA-CLA	Class A adapter module. Provides Class A capacity on NACs. E-FSA64 only.
D16L-FA	Local LED display, 16 zones, 2 LEDs per zone. E-FSA250 only

- Ground-fault detection by module
- *WireSaver* feature enables use of existing or new solid or stranded fire wire (up to 20K ft.) for most retrofit applications
- Rotary addressing
- Optional Ethernet port for diagnostics and programming
- Supports horn silence over two wires and UL 1971-compliant strobe synchronization with Edwards low profile notification appliances
- Class A NAC wiring standard on E-FSA250 panels, optional on E-FSA64 panels
- Supports up to eight serial annunciators, (LCD, LED-only, and graphic interface)
- Upload/download remotely or locally
- Automatic drift compensation and maintenance alert reporting
- Pre-alarm and alarm verification by point
- Day/Night sensitivity detector adjustment
- 4 x 20 character backlit LCD display
- Form C contacts for alarm and trouble, Form A for supervisory

Go the distance.

The Edwards E-FSA line of analog addressable initiating devices builds-upon field-proven fire alarm technology that has been at the forefront of the life safety industry for decades. Now your small to mid-sized installations can also benefit from the same high-end technology that's protecting some of the world's most important structures.

Smoke and Heat Detectors

Data Sheet S85001-0592

E-FSA analog addressable detectors feature comprehensive self-diagnostic capability. E-PD and E-PHD optical detectors continuously adjust their sensitivity to compensate for changes in the environment such as the presence of dirt, temperature, and humidity. The detectors issue a dirty sensor warning when they reach their pre-set limit. And, with the world's only replaceable optical chamber, no other detector is as simple or as easy to service.



E-PHD	Intelligent Optical/Fixed Temperature Detector
E-PD	Intelligent Optical Smoke Detector
E-HD	Intelligent Fixed Temperature or Rate-of-Rise Heat Detector
B4U	Standard Base RB4U Relay Detector Base IB4U Isolator Detector Base
SB4U	Audible (Sounder) Detector Base
AB4G-SB	Surface Box for Audible Base
RLED	Remote alarm LED

Input-Output Modules

Data Sheet S85001-0611



Designed expressly for small buildings, E-FSA modules are addressable devices that are uniquely identified on the system by means of familiar rotary switches. Unique to E-FSA modules is ground fault detection so precise that it actually pinpoints the specific module where the wiring problem has occurred, saving hours of troubleshooting and wire tracing.

E-IDC1A	Class A Single Input Module connects a normally open, alarm, supervisory, or monitor type dry contact initiating device circuit to the E-FSA control panel.
E-IDC1B	Single Input Mini Module connects a normally open, alarm, supervisory, or monitor type dry contact Class B initiating device circuit to the E-FSA control panel.
E-2WIRE	Class A-B Two-Wire Module acts as an interface between conventional two-wire smoke detectors and E-FSA analog addressable control panels.
E-IDC2B	Dual Input Module Connects two normally open, alarm, supervisory, or monitor type dry contact initiating device circuits to the E-FSA control panel.
E-IDCWS	Dual Input Waterflow-Supervisory Module connects normally open Class B waterflow alarm and supervisory initiating device circuits to the E-FSA control panel.
E-NAC	NAC Module connects a supervised output circuit to a signal riser.
E-RLY	Contact Relay Module provides one Form C dry relay contact and can be configured to provide polarity reversal of its output. Double-gang box mount.
E-ISO	SLC Fault Isolator Module Protects a Class A SLC from total collapse due to wire-to-wire short circuits. Double-gang box mount.

Duct Detector

Data Sheet S85001-0592



The E-PDD analog addressable duct detector features a unique design that speeds installation and simplifies maintenance. Removable dust filters, conformally coated circuit boards, and optional water-resistant gaskets keep contaminants away from components, ensuring years of trouble-free service.

E-PDD	Intelligent Duct Detector
-------	---------------------------

Manual Stations

Data Sheet S85001-0612



Edwards Signaling intelligent manual pull stations are engineered to deliver high-performance features, superb reliability, and unbeatable quality.

E-270	One Stage Fire Alarm Station
E-278	Double Action Fire Alarm Station

See data sheets for complete listings of E-FSA analog/addressable detectors and modules.

Do more with less.

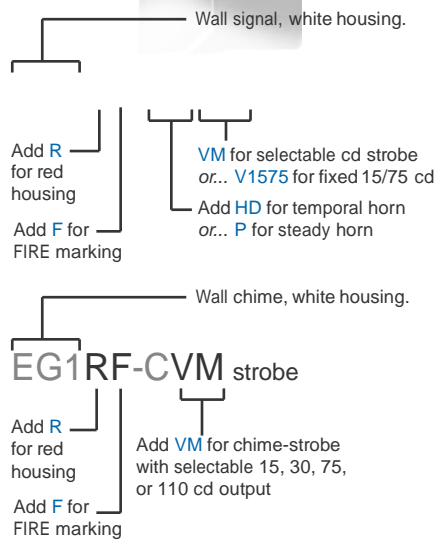
Edwards brings on-demand signaling to every application with an unparalleled range of field-configurable options like horns and chimes with high/low dB output settings, and strobes with selectable candela output and flash rate – options that put you in the driver's seat when time is short, budgets are slim, and manpower is at a premium.

Only E-FSA intelligent analog control panels work with exclusive

technology that delivers independent horn control over just a single pair of wires. This valuable feature makes it possible to silence horns while the strobes remain

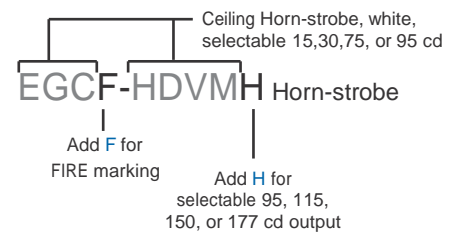
Genesis Wall Signals

Data Sheet S85001-0573



Genesis Ceiling Signals

Data Sheet S85001-0559

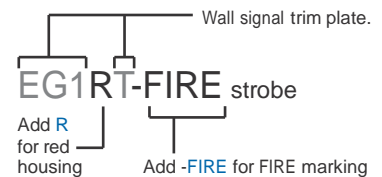


Low-profile ceiling signals are rated for wall or ceiling mount applications!



Data Sheet S85001-0573

signals are ideal for covering openings left behind during retrofits; red or white models are available with or without "FIRE" marking.



E-FSA panels come standard with the protocol necessary for connecting Edwards Genesis series strobes to meet stringent UL 1971 synchronization requirements – all without external synch modules!

Meet the family.

E-FSA represents a complete and comprehensive family of system controls and components, all finely tuned to work in concert with one another. Tested and designed to the exacting standards of Edwards quality control, these system components will reduce installation costs, extend application flexibility and provide years of trouble-free service.

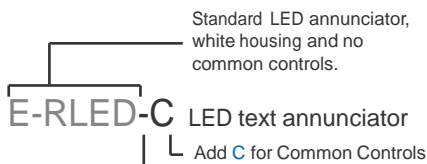
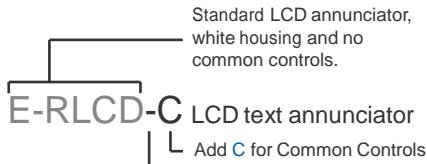
Remote Annunciators

Data sheet S85005-0128



E-FSA remote annunciators provide status indication and common controls for E-FSA Series small analog fire alarm systems. This family of annunciators offers LCD or LED annunciation.

There are three R-Series annunciator models, plus an LED-based expander. Up to two expanders can be connected to any annunciator. The expander includes 24 pairs of LEDs. All annunciator models include status LEDs and an internal sounder.



RLED 24R	24-pair LED zone expander with cable and insert. <i>Add R for red housing.</i>
RA-ENC1	One-position enclosure.
RA-ENC2	Two-position enclosure for annunciator and expander.
RA-ENC3	Three-position enclosure for annunciator and two expanders.

Remote Booster Power Supplies

Data Sheet S85005-0125



Edwards Boosters are self-contained 24 VDC UL Listed fire alarm power supplies designed to exceed today's rigorous UL 1971 ADA candela requirements. Edwards Boosters contain all of the necessary circuits to monitor and charge batteries, control and supervise four Class B or two Class A NAC circuits, and monitor two controlling inputs from external sources.

Simple switch selection provides a wide variety of operational configurations. Each remote booster power supply is supplied with its own enclosure providing ample space for additional interface modules and batteries.

Booster notification appliance circuits easily configure for either of two signaling rates: 3-3-3 temporal or continuous. California rate is also available on certain models. This makes the Booster Power Supply ideal for applications requiring more signaling power than available from the main panel. It also allows independent setup of a notification appliance circuit without interfering with the main control panel and its initiating circuits.

All Booster Power Supplies support Edwards Genesis series low profile notification appliances and offer strobe synchronization that exceed UL 1971 requirements, while providing independent horn control over a single pair of wires. This is the same synchronization protocol available on E-FSA control panels.

Edwards Booster Power Supplies are available with red cabinets only.

EBPS6A	6.5 Amp Booster Power Supply
EBPS10A	10 Amp Booster Power Supply

Magnetic Door Holders

Data Sheet S85001-0421



1501-AQN5	Floor Mount (Single Door)
1502-AQN5	Floor Mount (Double Door)
1504-AQN5	Flush Wall Mount (Long Plate)
1505-AQN5	Flush Wall Mount (Short Plate)
1508-AQN5	Surface Wall Mount
1509-AQN5	Completely Flush Wall Mount



Contact us...

Phone: 1-800-336-4206

Web: www.edwardssignaling.com

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3 Farm Glen Boulevard
Farmington, CT 06032

In Canada, contact Chubb Edwards...

Email: inquiries@chubbedwards.com

Web: www.chubbedwards.com

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Edwards: Building on a rich legacy of innovation. Focused squarely on the future.

Edwards Signaling offers powerful solutions that protect people and property with some of the most innovative fire alarm technology ever developed. From integrated life safety systems to intuitive programming and configuration, all of our products undergo rigorous scrutiny throughout their development to make sure they live up to the highest expectations of you, our customer. We invest this extra-effort with one simple goal in mind, to earn the right for our life safety solutions to be selected to maintain safe environments in some of the world's most important buildings – including yours.

When you invest in Edwards Signaling fire alarm products, you invest in a legacy that spans 138 years of innovation, and a team of dedicated people focused squarely on the future. We're already at the forefront of emerging new technologies. And we're investing heavily in fire alarm solutions that will make your world safer.

Edwards offers powerful solutions that protect people and property with some of the most innovative fire alarm technology ever developed. From integrated life safety systems to intuitive programming and configuration, all our products undergo rigorous scrutiny throughout their development to make sure they bring long-term value to every application. So it comes as no surprise that our life safety solutions can be found maintaining safe environments in some of the world's most important buildings.

See what's possible now. Call 800-336-4206
or visit www.edwardssignaling.com/fire.

Securitex Industrial Detection Division

Securitex Flammable Gas Detector

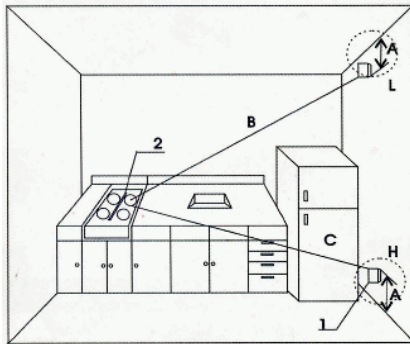
The ND-104N LPG and NG gas detector was manufactured by Shin Woo. This gas detector are widely use in commercial kitchen, factory canteen, vessel kitchen and also in home kitchen etc. The ND-104N can detect even a small leakage of gas and the designed make it very easy to install and blend in with most kitchen deco. The ND-104N was also designed to take a certain amount of water splash as such is suitable to install in area which is damp.

Model: ND-104N



Feature

- Easy to install
- Compact and Simple design
- Install on the wall in Kitchen or Boiler Room
- LP Gas, Natural Gas, Propane and Butane (Can be detected)



How to install

1. Gas detector
2. Gas range

- A: Install within 30cm
 B: Locate within 6 meter
 C: Locate within 4 meter
 L: In case of lighter gas than Air-Natural Gas and Methane
 H: In case of heavier gas than Air-LP Gas, Propane and Butane

The unit is to be install within 30cm from the bottom if you use heavy gas such as LPG, propane and 30cm from ceiling if you use light gas such as LNG, methane and the detector is to be located and install 5m from gas appliance

System Specification			
Model	ND-104N	Weight	240g
Type	Standalone Alarm	Application	Kitchen, Apartment, Office, School and factory canteen. Restaurant Kitchen and LPG storage room
Sensing Method	Catalytic bead	Operating temp	-20 ~+50 degree Celsius
Power Voltage	AC220V 50Hz, 1.3W	Operating Humidity	0 to 90% RH
Output power	NIL	Power lamp	Green Colour
Detection range	LP gas, Natural Gas 0-100%	Visual Alarm	Flashing Red LED light
Detectable gas	LPG, NG, Propane, Methane and Butane	Audio Alarm	Intermittent alarm sound 70dB at 1m
Dimension	110(L) X 70(W) X 37(H)	Recovery time	Automatic Recovery
Case material	ABS plastic	Approval	CE Mark

Specialized in industrial security, safety and automation for refinery, oil & gas, aviation and marine facilities



900 SERIES

POWER AMPLIFIERS:

P-906MK2

P-912MK2

P-924MK2

THE TOA 900 SERIES are widely recognized as the industry standard in installed sound system amplification. When reliability and performance are critical – such as in paging and music distribution for airport, hospital, and industrial sound systems – you can count on the TOA 900 Series to perform consistently, day-in and day-out.

The **P-906MK2** (60 W), **P-912MK2** (120 W) and **P-924MK2** (240 W) **Single Channel Power Amplifiers** are engineered for high performance with wide frequency response, very low noise and distortion, and excellent output regulation. A single module slot allows you to easily configure custom configurations using TOA plug-in modules with an extensive array of features and connector types. Outputs include transformer-isolated 25 V, 70 V and 8 ohm plus a direct low-impedance mode if non-transformer operation is required.

Other features include a direct input, selectable input sensitivity, low-cut switch and protection circuitry.

The 900 Series Power Amplifiers are UL and cUL Listed and carry a five year warranty.



HIGHLIGHTS

Modular Single Channel Power Amplifiers for paging, background/foreground music distribution and music/messaging-on-hold.

Proven TOA Quality and Reliability

Engineered for High Performance with wide frequency response, very low noise and distortion, and excellent output regulation.

Three Models:

P-906MK2 (60 W), **P-912MK2** (120 W), **P-924MK2** (240 W)

Input Module Slot accepts most TOA plug-in modules for custom system configurations.

25 V, 70 V and 8 Ohm Transformer-Isolated Speaker Outputs with screw terminal connector and protective cover plate.

Direct Low-Impedance Output Mode bypasses output transformer.

Direct Input for connecting an external mixer or other source.

Selectable Input Sensitivity to accommodate high or low input levels.

Master Volume Control

Low Cut Switch to limit low frequency response.

Normal, Clip, Power, Protect, and Signal Indicators provide unit status.

Rear Panel AC Convenience Outlet for powering external equipment

Turn-On Delay disconnects output during power-up.

Over-current and Thermal Protection Circuitry prevents potential damage from overload, short-circuit, or overheating.

Volume Control Security Knob Included

Optional Rack-Mount Kits

UL / cUL Listed

Five Year Warranty

OPTIONAL ACCESSORIES

Plug-in Modules (see individual module specifications)

MB-25B Rack-mount Kit (2 RU): P-906MK2 / P-912MK2

MB-35B Rack-mount Kit (3 RU): P-924MK2

PF-511 Perforated Rack Panel (2 RU)

YA-920 Volume Control Security Knob

900 Series Module Guide available from <http://www.toaelectronics.com>

SPECIFICATIONS

900 SERIES
POWER AMPLIFIERS

Tel: 800-733-7088
Fax: 800-733-9766
www.toaelectronics.com



Type	Power amplifier
Output Power RMS	P-906MK2: 60 W RMS; P-912MK2: 120 W P-924MK2: 240 W RMS
Power Bandwidth	(D) 20 - 20k Hz, 0.5% THD; (T) 50 - 20k Hz, 0.5% THD
Frequency Response	(D) 20 - 20k Hz, ± 1 dB; (T) 20 - 15k Hz, ± 1 dB (T) 20 - 20k Hz, +1 dB / -3 dB
Total Harmonic Distortion	0.01% at 1k Hz, rated output
Inputs	1 modular input port 1 direct input Use only one of direct input or modular input port.
Input Sensitivity & Impedance	Input port: 100 mV or 1000 mV (switchable)/10k Ω Direct input: 100 mV or 1000 mV (switchable)/10k Ω
Outputs balanced (T)=Transformer, (D)=Direct	Main (T): 8 Ω , 25 V & 70 V, Main (D): 4 Ω , unbalanced
Output Regulation (1k Hz)	(D): Less than 0.5 dB, no load to full load (T): Less than 1.0 dB, no load to full load
Dynamic Range (Band Pass: 20 - 20k Hz, with Tone Controls centered)	Input level switch in 0 dBV (1000 mV) position: 108 dB Input level switch in -20 dBV (100 mV) position: 90 dB
Indicators	Normal, Peak, Power, Protect, and Signal LEDs
Protection	P-906/912MK2: Self-protection, with internal AC fuse P-924MK2: Self-protection, with 2 AC fuses (1 internal) and 2 DC fuses.
Power Consumption	P-906MK2: 100 W; P-912MK2: 180 W; P-924MK2: 120V/3A
Temperature Range	12° F to 140° F (-10° C to +60° C)
Color	Black
Dimensions (W x H x D)	P-906/912MK2: 16.5" x 3.9" x 14.1" (420 x 99.1 x 358 mm) P-924MK2: 16.5" x 6.0" x 13.2" (420 x 151.3 x 334.2 mm)
Weight (without modules)	P-906MK2: 20.1 lbs (9.1 kg); P-912MK2: 24.0 lbs (10.9 kg) P-924MK2: 43.0 lbs (19.5 kg)
Other Features	Output connects approx. 5 seconds after switching power on.

APPLICATIONS

A/V Rentals
Airports
Audio/Visual
Auditoriums / Theatres
Banks
Bars / Lounges / Nightclubs
Boardrooms Business
Music Conference
Facilities
Convenience Stores
Educational Facilities
Fitness Clubs / Gymnasiums
Hotels / Hospitality
Houses of Worship
Industrial / Warehouses
Museums
Music Distribution
Offices
Public Address
Restaurants
Retail Stores
Theme Parks
Training Rooms

Visit www.toaelectronics.com to download:

900 Series Architect and Engineering Specifications
900 Series Installation Manual
900 Series CAD Files
900 Series Module Guide



900 SERIES
POWER AMPLIFIERS

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Fax: 800-733-9766
www.toaelectronics.com

MODULE SELECTION



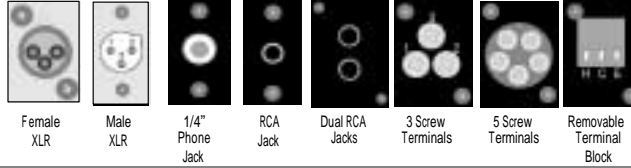
Model	Type	Description
M-01F	MIC	Microphone Input Module, Balanced, 200 Ω , Lo/Hi-Cut Filters, Female XLR
M-01M	MIC	Same as M-01F with Male XLR
M-01P	MIC	Same as M-01F with Phone Jack
M-01S	MIC	Same as M-01F with Screw Terminals
M-03P	MIC	Microphone Input Module, HiZ, Unbalanced, 50k Ω , Lo/Hi-Cut Filters, Phone Jack
M-21S	MIC	Microphone Input Module, Balanced, 200 Ω , Lo/Hi-Cut Filters, Remote Vol. Control, Screw Terminals
M-51F	MIC	Microphone Input Module, Balanced, 200 Ω , Lo-Cut Filter, Voice Gate, Female XLR
M-51S	MIC	Same as M-51F with Screw Terminals
M-61F	MIC	Microphone Input Module, Balanced, 200 Ω , Lo/Hi-Cut Filters, Compressor, Female XLR
M-61S	MIC	Same as M-61F with Screw Terminals
B-01F	LINE	Balanced Line Input Module, 10k Ω Transformer, Female XLR
B-01S	LINE	Balanced Line Input Module, 10k Ω Transformer, Screw Terminals
B-21S	LINE	Balanced Line Input Module, 10k Ω Transformer, Remote Volume Control, Screw Terminals
L-01F	LINE	Line Matching Input Module, 600 Ω Transformer, Balanced, Female XLR
L-01S	LINE	Same as L-01F with Screw Terminals
U-01F	LINE	Line Input Module, Unbalanced, 220k Ω , Female XLR
U-01P	LINE	Same as U-01F with Phone Jack
U-01R	LINE	Same as U-01F with RCA Jack
U-01S	LINE	Same as U-01F with Screw Terminals
U-03R	LINE	Stereo Line Input Module, Lo/Hi-Cut Filters, Stereo Summing Dual RCA Jacks
U-03S	LINE	Line Input Module, Lo/Hi-Cut Filters, Screw Terminals
U-21S	LINE	Line Input Module, Unbalanced, 220k Ω , Remote Volume Control, Screw Terminals
U-61S	LINE	Line Input Module, Unbalanced, 220k Ω , Compressor, Screw Terminals
E-03R	SPECIAL FUNCTION	900 Series Processor Module for F-121C/CM Speakers, Dual RCA Jacks
E-04R	SPECIAL FUNCTION	900 Series Processor Module for H-1 Speakers, Dual RCA Jacks
E-05R	SPECIAL FUNCTION	900 Series Processor Module for H-2/H-2WP Speakers, Dual RCA Jacks
E-06R	SPECIAL FUNCTION	900 Series Processor Module for H-3/H-3WP Speakers, Dual RCA Jacks
S-01S	SPECIAL FUNCTION	Signal Generator Module, 1 kHz Sine Wave, Screw Terminals
S-02S	SPECIAL FUNCTION	Signal Generator Module, Buzzer/Yelp, Screw Terminals
S-04S	SPECIAL FUNCTION	Signal Generator Module, 8 Selectable Tones, Screw Terminals
T-02S	SPECIAL FUNCTION	Line Input Module for Music-on-Hold, Unbalanced, 220k Ω Input, 600 Ω Balanced Output, Screw Terminals



TOA ELECTRONICS, INC.
 601 GATEWAY BLVD., SUITE 300
 SOUTH SAN FRANCISCO, CA 94080
 TEL: 800-733-7088
 FAX: 800-733-9766
 www.toaelectronics.com



900 SERIES POWER AMPLIFIERS



900 SERIES MODULE CHART

		Female XLR	Male XLR	1/4" Phone Jack	RCA Jack	Dual RCA Jacks	3 Screw Terminals	5 Screw Terminals	Removable Terminal Block
Microphone Input Modules	Standard with high/low cut filters	M-01F	M-01M	M-01P			M-01S		
	Voice Gate with low cut filters	M-51F					M-51S		
	Compressor with high/low cut filters	M-61F					M-61S		
	Remote Volume Control with high/low filters							M-21S	
	For high-Z mic. only w/ high/low cut filters			M-03P					
Line Input Modules*	Standard, no special features	L-01F B-01F U-01F		U-01P	U-01R		L-01S B-01S U-01S		
	Standard with high/low cut filters					U-03R			U-03S
	Remote Volume Control						B-21S U-21S		
	Compressor						U-61S		
Special	Line output						T-01S		
	Line input with Music-On-Hold (MOH) output							T-02S	
	1 kHz Sine Wave test tone						S-01S		
	Buzzer/Yelp signal tone						S-02S		
	Switch-selectable tone						S-04S		
	Equalizer for F-121C/CM Speakers					E-03R			
	Equalizer for H-1 Speakers					E-04R			
Equalizer for H-2/H-2WP Speakers					E-05R				
Equalizer for H-3/H-3WP Speakers					E-06R				

*For Line Input Modules: Use "B" modules w/ transformer isolation for balanced/unbalanced sources. Use "L" modules only for 600 ohm impedance matching. Use "U" for unbalanced sources w/ short cables (≤ 15 feet).

DESCRIPTION

The D-901 is a 19-type rack-mounted (3U high) digital mixer configured with 12 inputs, 8 buses, and 8 outputs. It features signal processing functions necessary for sound systems such as feedback suppression and auto-mixing.

Modular construction permits flexible configuration of inputs and outputs, from 2-IN/4-OUT to 12-IN/8-OUT systems.

All functional parameters can be set at the unit. Settings can be stored in the unit's internal memory as "preset memory" and can be recalled using the front panel-mounted operation keys.

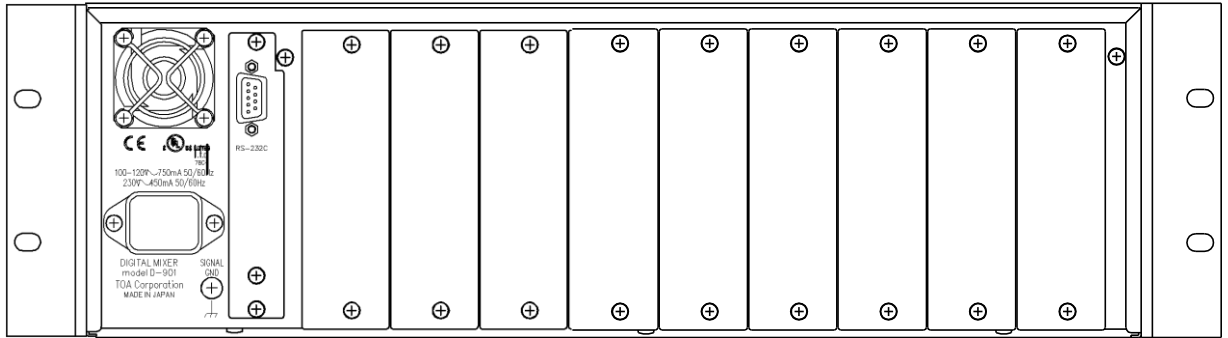
SPECIFICATIONS

* 0 dB = 0.775 V

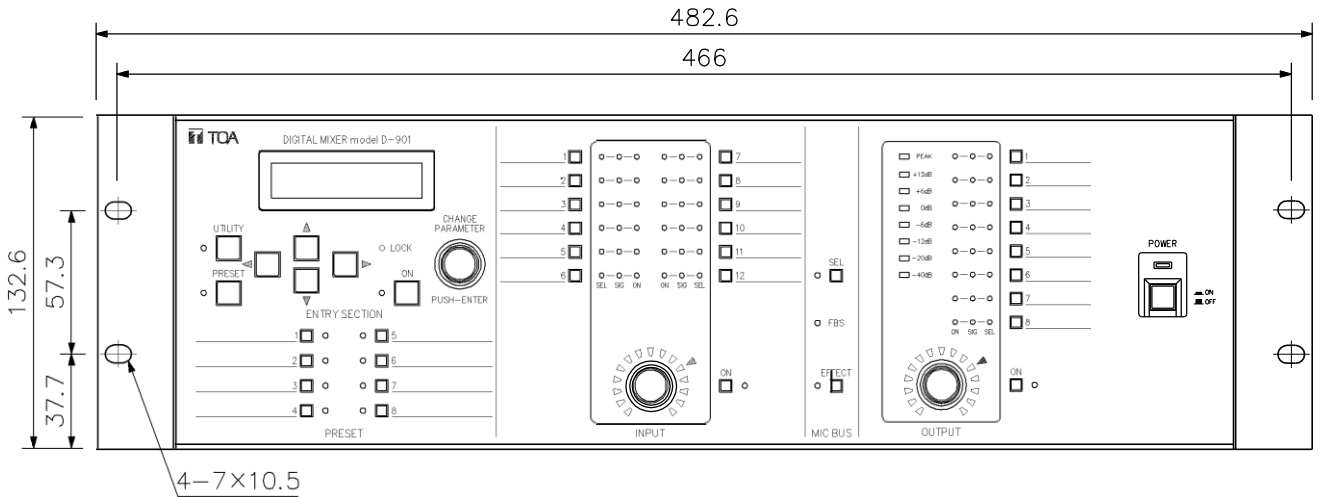
Power Source	100 - 120 V, 230 V AC, 50/60 Hz
Power Consumption	40 W
Frequency Response	20 - 20,000 Hz, ± 1 dB (+4 dB* input)
Input	Max. 12 channels, modular construction (modules optional)
Output	Max. 8 channels, modular construction (modules optional)
Signal Processing	
Feedback Suppression Function	12 filters (auto/dynamic)
Auto-Mixing Function	Ducker (automatic muting), NOM attenuation
Auto-Mixing Group	4 groups
Equalizer/Filter	Parametric equalizer: 20-20,000 Hz, ± 15 dB, Q: 0.267-69.249 Filtering: High-pass filter 20 - 20,000 Hz, 6 dB/oct, 12 dB/oct Low-pass filter 20 - 20,000 Hz, 6 dB/oct, 12 dB/oct Notch filter 20 - 20,000 Hz, Q: 8.651 - 69.249 All-pass filter 20 - 20,000 Hz, Q: 0.267 - 69.249 High shelving filter 6 - 20 kHz, ± 15 dB Low shelving filter 20 - 500 Hz, ± 15 dB Horn equalizer 20 kHz, 0 to +18 dB (1 dB steps) Crossover filter: 20 - 20,000 Hz, 6 dB/oct, 12 dB/oct, 18 dB/oct, 24 dB/oct
Compressor/Auto-Leveler	(Compressor mode) Threshold: -20 to +20 dB (1 dB steps) Ratio: 1:1, 2:1, 3:1, 4:1, 8:1, 12:1, 20:1, ∞ :1 Attack time: 0.2 ms - 5 s Release time: 10 ms to 5 s Gain: $-\infty$ to +10 dB (Auto-leveler mode) Target level: -20 to +10 dB (1 dB steps) Maximum gain: 0 to +20 dB (1 dB steps) Attack time: 10 ms - 10 s Release time: 100 ms to 10 s
Delay	Delay time: 0 - 682.6 ms (0.021 ms steps)
Matrix	12 x 8
Crosspoint Gain	$-\infty$ to 0 dB (1 dB steps)
Preset Memory	16
Auxiliary Function	System Locking function
Control	RS-232C, D-sub connector (9 pins), Remote control module (option)
Front Panel Section	Preset memory recall key: 8 LCD screen, screen shift key (up/down/left/right), setting knob Input level indicator: Dual color LED Output level indicator: Dual color LED Channel selector key: 12 (input channel selection) 8 (output channel selection) Channel volume control: 1 (input channel selection) 1 (output channel selection)
Rear Panel	Input module slot: 6 (input/output module slot: 2) Output module slot: 2 Remote control module slot: 1
Operating Temperature	+5°C to +40°C
Finish	Panel: Aluminum, hair-line finish, black Others: Pre-coated steel plate, black, 30% gloss
Dimensions	482.6 (W) x 132.6 (H) x 320 (D) mm (excluding projection)
Weight	6.9 kg
Accessory	Power cord (2 m)1, Rack mounting screw4, Rack mounting bracket (preinstalled on the unit)2, Module mounting screw (spare)4, Blank panel (preinstalled on the module slot)9

[Note] When installing the unit, never block the intake vents provided in the unit's bottom near the rear.

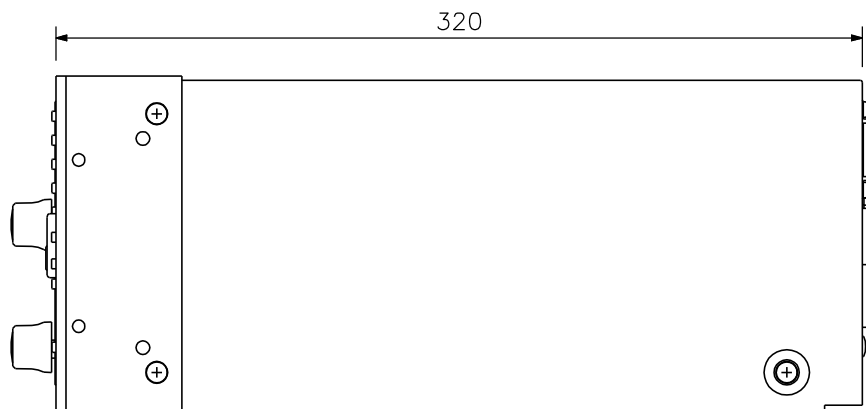
■ APPEARANCE



Rear View



Front View



Side View

UNIT: mm SCALE: 1/3



MULTI-ZONE PAGING SYSTEM



Low-cost solution for paging to a maximum of 12 speaker zones with a user-friendly remote microphone.

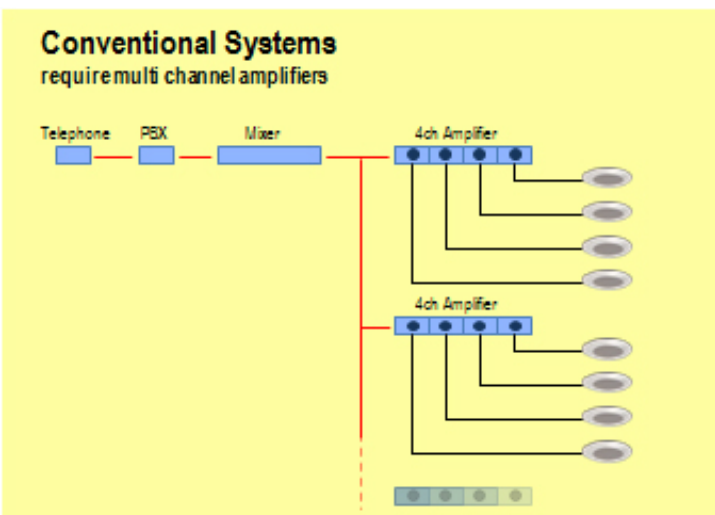
The cost-effective Multi-Zone Paging System is achieved with TOA's zone selectable remote paging microphone and speaker line selector.

TOA's multi zone paging system allows paging up to 12 zones, utilizing a single channel amplifier by activating the speaker line selector from the desktop remote microphone.



No More Multi Channel Amplifier for Multi-Zone Paging System

The Q-SS9012PS Multi-Zone Speaker Selector, has 2 amplifier inputs and 12 individual relay switches to select the amplifier connects to each 12 speaker line/zone. This allows up to 12 zones for paging and BGM distribution with a dual channel amplifier or single channel amplifier. TOA's new concept offers a real cost effective multi-zone paging system.



Q-RM9012PS

REMOTE PAGING MICROPHONE FEATURES

- Announcement to the selected zones out of a maximum of 12 zones
- Paging zones may be selected individually or in groups
- An All-call Button for selecting all zones
- A Clear Button for clearing all zone selections
- LED indicator for each selector
- Unidirectional electret condenser microphone with balanced audio output
- All connections to amp/speaker selector via shielded CAT5 cable
- AD-246 Power Supply included



Q-SS9012PS

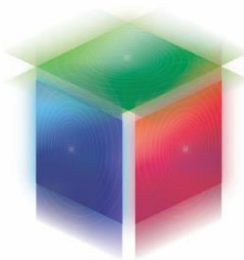
MULTI-ZONE SPEAKER SELECTOR FEATURES

- 12 contact inputs and 12 speaker outputs. Power amp input is split into 12 zones with activation via contact closure
- Can facilitate paging over BGM by switching between BGM output (amp input 2) and Page output (amp input 1)
- LED indicator for each selector
- 19" rack-mountable (using optional MB-15B)
- Supplied with AD-246 AC Adapter



Specifications	Q-RM9012PS Remote Paging Microphone
Power Source	24 V DC from AC adaptor AD-246 or equivalent
Power Consumption	80mA or less
Audio Output	0 dB, 600 Ohms, transformer balanced, RJ45 connector
Distortion	1% or less
Frequency Response	100 - 20,000Hz
S/N Ratio	60dB or more
Microphone	Unidirectional electret condenser microphone
Control Output	12 channels, open collector output, withstand voltage: 27V DC, control current: max. 50 mA, (2) RJ45 connectors
Number of Keys	12 zone selection keys, All call key, Cancel key, Talk key
Volume Control	Microphone volume control
Operating Temperature	-10C to + 40C (14F to 104F)
Finish	ABS resin, Black
Dimensions	190 W x 76.5 H X 215 D mm (Gooseneck microphone excluded)
Weight	750g
Supplied Accessory	AC Adaptor: AD-246

Specifications	Q-SS9012PS Multi-Zone Speaker Selector
Power Source	24 V DC from AC adaptor AD-246 or equivalent
Power Consumption	400mA or less
Power Handling	250W or less (70V/100V line) per channel (IN1, IN2)
Control Input	12 channels, dry (no voltage) contact closures, open voltage: 3.3V DC, short-circuit current: under 1 mA, removable terminal block (24 pins)
Speaker Terminal	Removable Terminal Block (2 pins, IN1, IN2, Zone1 - 12)
Control Terminal	Removable Terminal Block (24 pins_)
Operating Temperature	-10C to +40C (14F to 104F)
Finish	Case: Surface-treated steel plate, Black
Dimensions	420 W x 44 H x 123 D mm
Weight	1.6kg
Accessory	Removable Terminal plug (2pins) Removable Terminal Plug (12 pins) Removable Terminal Plug (14 pins)
Supplied Accessory	AC adaptor: AD-246
Options	Rack mount bracket: MB-15B, Wall mount bracket: YC-850



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Specifications subject to change without notice.

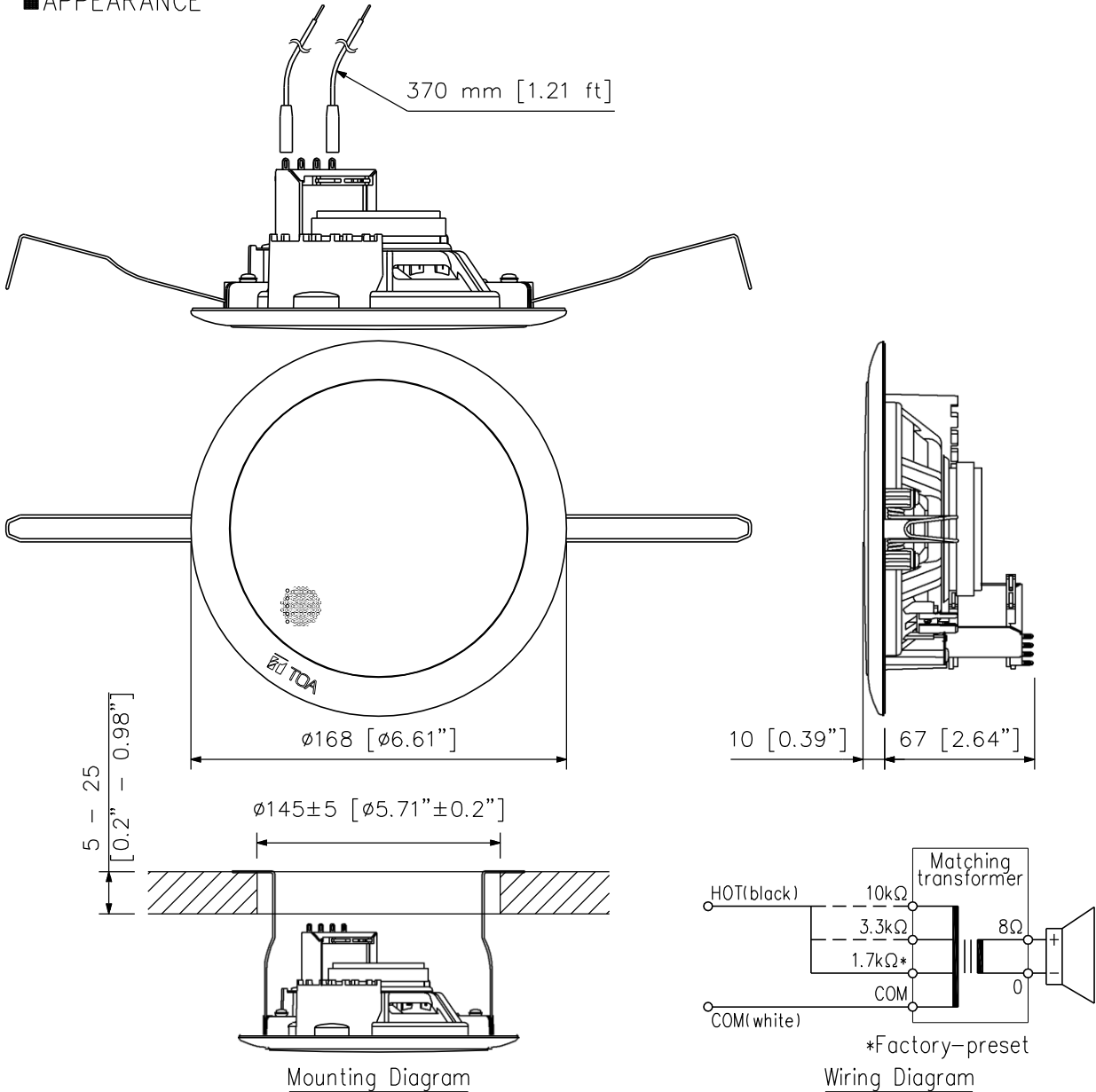
DESCRIPTION

Integrated with a resin panel and speaker frame, the PC-648R is the ceiling mount speaker with a metal attached. It features spring clamp mechanism for easy speaker mounting to the ceiling. The input impedance can be easily changed by changing the tap position of the transformer.

SPECIFICATIONS

Rated Input	6 W (100 V line), 3 W (70 V line)
Rated Impedance	100 V line: 1.7 k Ω (6 W), 3.3 k Ω (3 W), 10 k Ω (1 W) 70 V line: 1.7 k Ω (3 W), 3.3 k Ω (1.5 W), 10 k Ω (0.5 W)
Sensitivity	90 dB (1 W, 1 m) (500 - 5,000 Hz, pink noise)
Frequency Response	100 - 18,000 Hz (peak -20 dB)
Speaker Component	12 cm (5") cone-type
Dimensions for Fixing Hole	Mounting hole: $\phi 145 \pm 5$ mm ($\phi 5.71'' \pm 0.2''$) Ceiling thickness: 5 - 25 mm (0.2" - 0.98")
Speaker Mounting Method	Spring clamp
Finish	Baffle: Polypropylene resin, off-white (RAL 9010 or equivalent color) Grille: Surface-treated steel plate net, off-white (RAL 9010 or equivalent color), point
Dimensions	$\phi 168 \times 77$ (D) mm ($\phi 6.61'' \times 3.03''$)
Weight	470 g (1.04 lb)
Accessory	Paper pattern ...1

APPEARANCE



UNIT: mm SCALE: 1/3

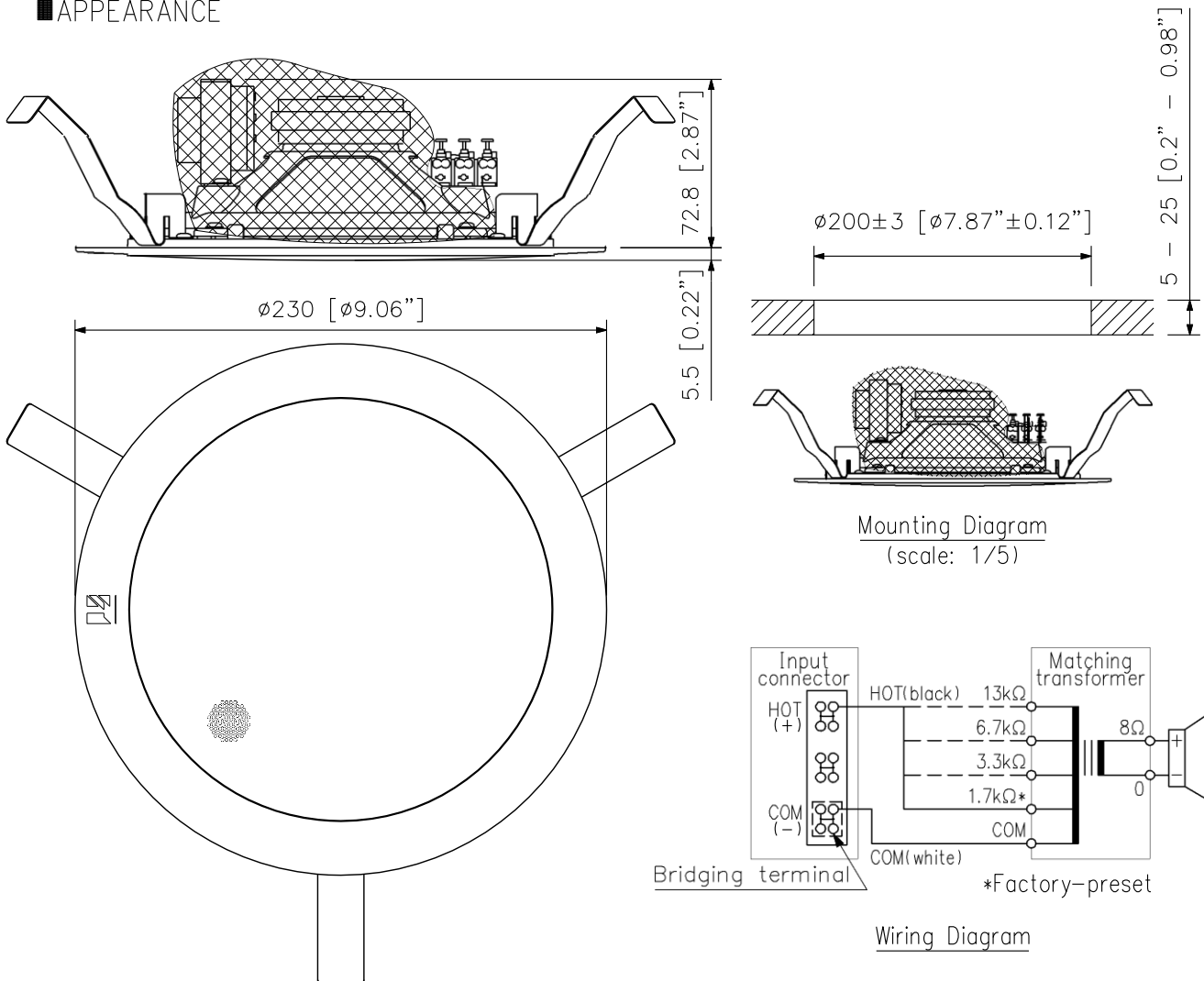
DESCRIPTION

Integrated with a speaker unit and panel, the PC-2369 Ceiling Mount Speaker is of all metallic construction and ideal for use in a voice alarm system. It features spring clamp mechanism for easy speaker mounting to the ceiling. The input impedance can be easily changed by changing the tap position of the transformer. The push-in type input terminal block makes cable connections easy and allows bridge wiring.

SPECIFICATIONS

Rated Input	6 W (100 V line), 3 W (70 V line)
Rated Impedance	100 V line: 1.7 kΩ (6 W), 3.3 kΩ (3 W), 6.7 kΩ (1.5 W), 13 kΩ (0.8 W) 70 V line: 1.7 kΩ (3 W), 3.3 kΩ (1.5 W), 6.7 kΩ (0.8 W), 13 kΩ (0.4 W)
Sensitivity	93 dB (1 W, 1 m) (500 Hz - 5 kHz, pink noise)
Frequency Response	45 Hz - 20 kHz (peak -20 dB)
Speaker Component	16 cm (6") double cone-type
Dimensions for Fixing Hole	Mounting hole: $\phi 200 \pm 3$ mm ($\phi 7.87" \pm 0.12"$) Ceiling thickness: 5 - 25 mm (0.2" - 0.98")
Speaker Mounting Method	Spring clamp
Applicable Cable	600 V vinyl-insulated cable (IV wire or HIV wire) Solid copper wire: $\phi 0.8$ - $\phi 1.6$ mm (equivalent to AWG 20 - 14) 7-core twisted copper wire: 0.75 - 1.25 mm ² (equivalent to AWG 18 - 16)
Connection	Push-in connector (bridging terminal-2 branch type)
Finish	Baffle: Steel plate, white (RAL 9016 equivalent), paint Grille: Surface-treated steel plate net, white (RAL 9016 equivalent), paint
Dimensions	$\phi 230 \times 79$ (D) mm ($\phi 9.06" \times 3.11"$)
Weight	760 g (1.68 lb)
Accessory	Paper pattern *1

APPEARANCE



UNIT: mm SCALE: 1/3

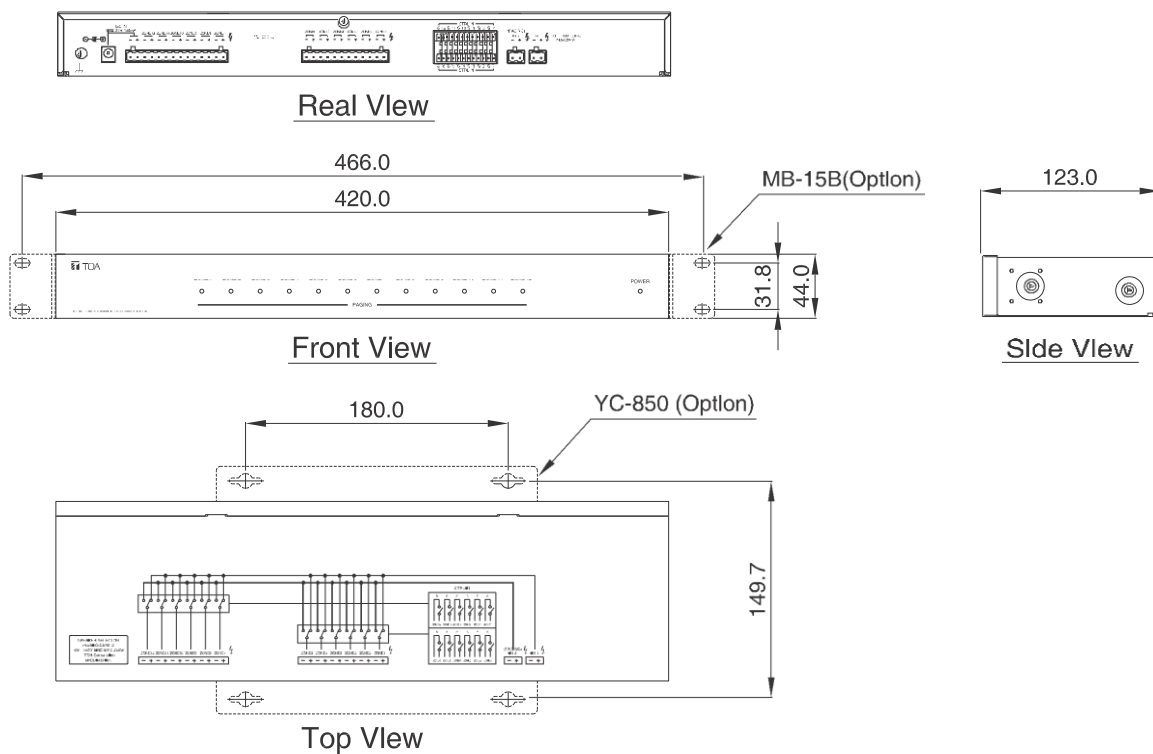
■ GENERAL DESCRIPTION:

Q-SS9012 is a speaker selector used in conjunction with 9000M2 series mixer amplifiers or other paging equipment. It selectively distributes each of 2 amplified inputs to the same 12 output zones by the status of corresponding contact closure input. It requires DC 24V power supply (AC Adaptor, AD-246 or equivalent).

■ SPECIFICATIONS:

Power Source	24 V DC from AC adaptor AD-246 or the equivalent
Power Consumption	400mA or less
Power Handling	250W or less (70V/100V line) per channel (IN1, IN2)
Control Input	12 channels, dry (no voltage) contact closures, open voltage: 3.3V DC, short-circuit current: under 1 mA, removable terminal block (24 pins)
Speaker Terminal	Removable Terminal Block (2 pins, IN1, IN2, Zone1 - 12)
Control Terminal	Removable Terminal Block (24 pins)
Operating Temperature	-10°C to +40°C (14°F to 104°F)
Finish	Case: Surface-treated steel plate, Black
Dimensions	420(W) X 44(H) X 123(D) mm
Weight	1.6kg
Accessory	Removable Terminal plug (2 pins) ...2, Removable Terminal plug (12 pins) ...3, Removable Terminal plug (14 pins) ...1
Option	AC adaptor: AD-246, Rack mount bracket: MB-15B, Wall mount bracket: YC-850

■ APPEARANCE



UNIT: mm

DESCRIPTION

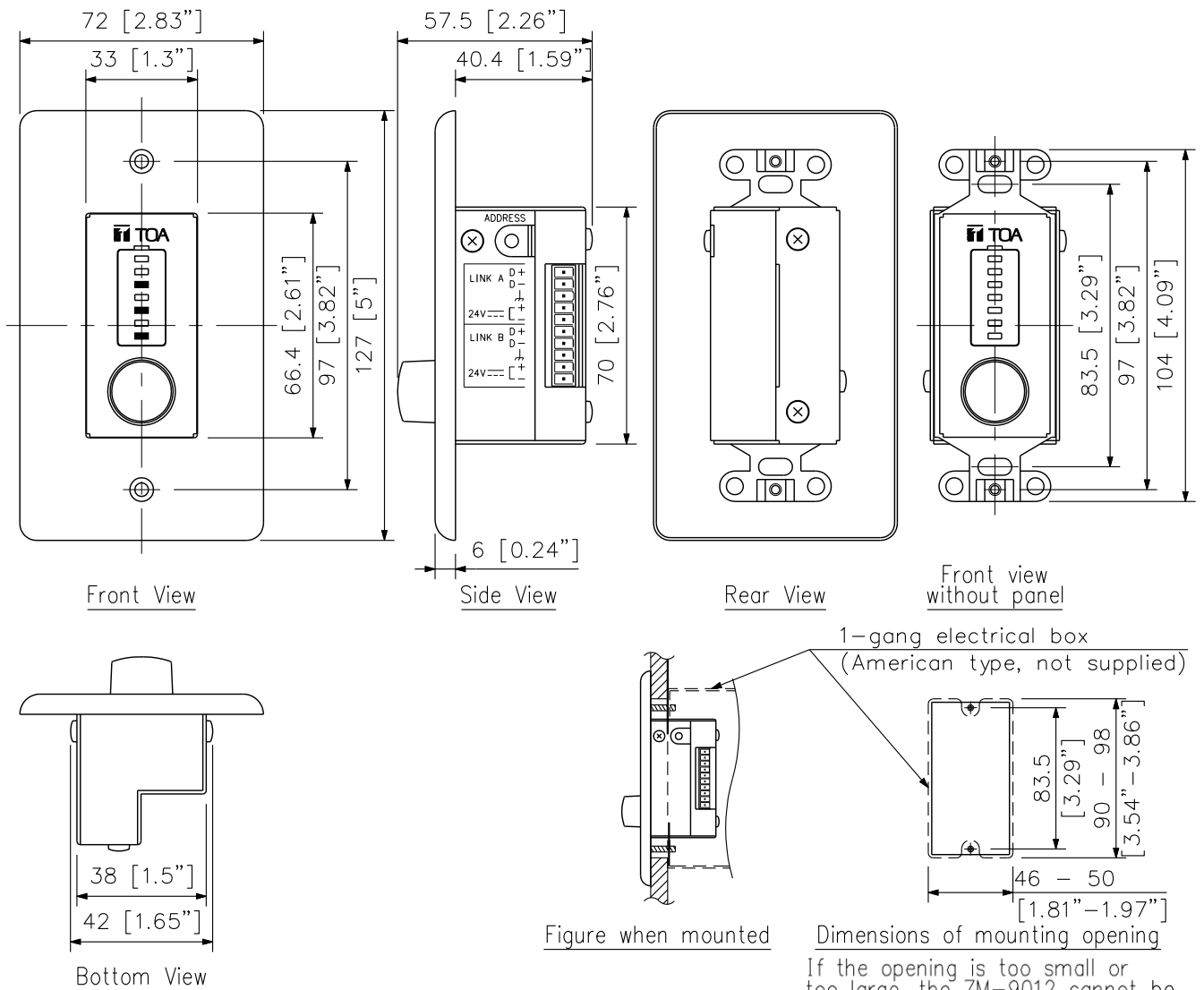
Designed for exclusive use with the 9000M2 Series amplifier or M-864D, the ZM-9012 is a wall mounted remote control panel having a volume control knob. It is used in conjunction with the RC-001T Remote control module or M-864D. It can be mounted in an American standard 1-gang electrical box in the wall.

SPECIFICATIONS

Power Source	24 V DC (supplied from RC-001T or M-864D)
Current Consumption	50 mA or less
Terminal	Removable terminal block (10 pins)
Connection Cable	Shielded CPEV cable (paired data line and paired power line) or Category 5 twisted pair cable for LAN (CAT5-STP)
Operating Section	1 volume control
Indicator	Level indicators (green LEDs)
Operating Temperature	0 °C to +40 °C (32 °F to 104 °F)
Operating Humidity	35 % to 80 %RH (no condensation)
Finish	Surface-treated steel plate, white, paint
Dimensions	72 (W) × 127 (H) × 57.5 (D) mm (2.83" × 5" × 2.26")
Weight	160 g (0.35 lb)
Accessory	Box mounting screw (No.6-32UNC × 30) ×2, Box mounting screw (M4 × 30) ×2, Panel mounting screw ×2, Removable terminal plug (10 pins) ×1

Note: Since no electrical box is supplied with the unit, prepare it separately.

APPEARANCE



If the opening is too small or too large, the ZM-9012 cannot be mounted in the wall. Be sure to make an opening with dimensions given above when mounting.

UNIT:mm SCALE:1/2

System Capacity

Maximum Trunk and Extension Cards

The following number of trunk and extension cards can be installed in the Hybrid IP-PBX for expansion.

Card Type	KX-TDA100D
Trunk Card	7*1
Extension Card	7
Total	7

*1 One T1, E1, PRI30, PRI23, or IP-GW4 card counts as 2 cards.

Maximum Terminal Equipment

The following number of items of terminal equipment can be supported by the PBX.

Terminal Equipment Type	Maximum Number
Telephone	176*1
SLT	128
KX-DT300/KX-T7600 series DPT	104
IP-PT	112
DSS console	8
CS	26
High-density CS	13
PS	128
Voice Processing System (VPS)	2
Doorphone	16
Door Opener	16
External Sensor	16
External Relay	16

*1 When the PBX is equipped with 104 DPTs (Digital XDP), 48 IP-PTs, and 24 SLTs.

Option List

Category	Model No.	Description	
DMPR Option Card	KX-TDA0196	Remote Card (RMT)	
Trunk Cards	KX-TDA0180	8-Port Analogue Trunk Card (LCOT8)	
	KX-TDA0181	16-Port Analogue Trunk Card (LCOT16)	
	KX-TDA0182	8-Port DID Card (DID8)	
	KX-TDA0183	4-Port Analogue Trunk Card (LCOT4)	
	KX-TDA0184	8-Port E & M Trunk Card (E&M8)	
	KX-TDA0187	T-1 Trunk Card (T1)	
	KX-TDA0188	E-1 Trunk Card (E1)	
	KX-TDA0189	8-Port Caller ID/Pay Tone Card (CID/PAY8)	
	KX-TDA0193	8-Port Caller ID Card (CID8)	
	KX-TDA0284	4-Port BRI Card (BRI4)	
	KX-TDA0288	8-Port BRI Card (BRI8)	
	KX-TDA0290CE/CJ	PRI Card (PRI30)	
	KX-TDA0290	PRI Card (PRI23)	
	KX-TDA0484	4-Channel VoIP Gateway Card (IP-GW4E)	
	KX-TDA0490	16-Channel VoIP Gateway Card (IP-GW16)	
	KX-TDA1180	8-Port Analogue Trunk Base Card with Caller ID (CLCOT8)	
KX-TDA1186	8-Port Analogue Trunk Daughter Card with Caller ID (CLCOT8E)		
Extension Cards	KX-TDA0143	4 Cell Station Interface Card (CSIF4)	
	KX-TDA0144	8 Cell Station Interface Card (CSIF8)	
	KX-TDA0171	8-Port Digital Extension Card (DLC8)	
	KX-TDA0172	16-Port Digital Extension Card (DLC16)	
	KX-TDA0470	16-Channel VoIP Extension Card (IP-EXT16)	
	KX-TDA1176	16-Port Single Line Telephone Extension with Caller ID and Message Lamp Card (MCSLC16)	
KX-TDA1178	24-Port Single Line Telephone Extension with Caller ID and Message Lamp Card (MCSLC24)		
Other Cards	KX-TDA0161	4-Port Doorphone Card (DPH4)	
	KX-TDA0162	2-Port Doorphone Card (German Type) (DPH2)	
	KX-TDA0164	4-Port External Input/Output Card (EIO4)	
	KX-TDA0166	16-Channel Echo Canceller Card (ECHO16)	
	KX-TDA0190	Optional 3-Slot Base Card (OPB3)	
	KX-TDA0191	4-Channel Message Card (MSG4)	
	KX-TDA0192	2-Channel Simplified Voice Message Card (ESVM2)	
	KX-TDA0194	4-Channel Simplified Voice Message Card (ESVM4)	
	KX-TDA0410	CTI Link Card (CTI-LINK)	
	Optional SD Memory Card	KX-TDA0920	SD Memory Card for Software Upgrade to Enhanced Version
Cell Stations (CSs)	DECT	KX-TDA0155	2-Channel Cell Station Unit Using a DLC Card (PT-interface CS) for DECT Portable Station
		KX-TDA0156	4-Channel Cell Station Unit Using a CSIF Card for DECT Portable Station
		KX-TDA0158	8-Channel High-density Cell Station Unit Using a DLC Card (PT-interface CS) for DECT Portable Station
Proprietary Equipment		KX-A228	Back-up Battery Cable
		KX-A258	Blank Slot Cover
		KX-T30865	Doorphone
		KX-T7765	Doorphone



KX-TDA100D

Specifications

KX-TDA100D
Control Bus: Original bus (16-bit, 8 MHz, 10 megabytes per second)
Communication Bus: H.100 bus conformity (1024 time slots)
Switching: Non-blocking
Power Input: 100 V AC to 130 V AC; 2.8 A/200 V AC to 240 V AC; 1.7 A; 50 Hz/60 Hz
External Battery: +36 V DC (+12 V DC x 3, recommended maximum capacity is 28 Ah)
Maximum Power Failure Tolerance: 300 ms (without using backup batteries)
Memory Backup Duration: 7 years
Dialling: Trunk Dial Pulse (DP) 10 pps, 20 pps Tone (DTMF) Dialling Extension Dial Pulse (DP) 10 pps, 20 pps Tone (DTMF) Dialling
Mode Conversion: DP-DTMF, DTMF-DP
Ring Frequency: 20 Hz/25 Hz (selectable)
Trunk Loop Limit: 1600 maximum
Operating Environment: Temperature 0 C to 40 C Humidity 10 % to 90 % (non-condensing)
Conference Call Trunk: From 10 x 3-party conference call to 4 x 8-party conference call
Music on Hold (MOH): 2 ports (Level Control: -11 dB to +11 dB in 1 dB steps) MOH1: External Music Source port MOH2: Selectable Internal/External Music Source port
Paging: Internal Level Control: -15 dB to +6 dB in 3 dB steps External 2 ports (Volume Control: -15 dB to +15 dB in 1 dB steps)
Serial Interface Port: RS-232C 1 (maximum 115.2 kbps) USB 1
Extension Connection Cable: SLT 1-pair wire (T,R) DPT 1-pair wire (D1, D2) or 2-pair wire (T,R, D1, D2) PT-interface CS 1-pair wire (D1, D2) PT-interface CS (High-density) 4-pair wire (D1, D2) DSS Console and Add-on Key Module 1-pair wire (D1, D2)
Dimension: 334 mm (W) x 390 mm (H) x 270 mm (D)
Weight (when fully mounted): Under 12 kg

Compatible Panasonic Proprietary Telephones

The PBX supports the following telephones:

• Digital proprietary telephones (e.g. KX-DT300 series) • IP proprietary telephones (e.g. KX-NT300 series) • Portable stations (e.g. KX-TCA355, KX-TCA256) • DSS consoles (e.g. KX-DT390) • Single line telephones (e.g. KX-T7710)

Incompatible Panasonic Proprietary Telephones

The PBX does not support the following telephones:

• KX-T7400 series digital proprietary telephones • KX-T7500 series digital proprietary telephones • Analogue proprietary telephones (e.g. KX-T7700 series) • KX-T30800 series proprietary telephones and DSS consoles

Some models will be available to limited Countries.

System Feature Capacity

Item		KX-TDA100D	Item	KX-TDA100D				
System	Absent Message-Extension	1 x 16 characters	ARS	Routing Plan Table	16 entries			
	Absent Message-System	8 x 16 characters		Leading Number Table	16 digits, 1,000 entries			
	Call Park Zone	100		Leading Number Exception Table	16 digits, 200 entries			
	Conference	3-8 parties per conference (32 parties total)		ARS Carrier	10			
	COS	64		Itemised Billing Code	10 digits			
	DID/DDI Table	32 digits, 1,000 entries		Authorisation Code for Tenant	16 digits			
	Extension Number	1-5 digits (1-4 digits for PSs)		Authorisation Code for Trunk Group	10 digits			
	Extension Personal Identification Number (PIN)	10 digits, 1 entry/extension		Outgoing Call Log - PT	100 records/extn. 1,520 records/system			
	Host PBX Access Code	10 digits, 10 entries/trunk group		Outgoing Call Log - PS	100 records/extn. 640 records/system			
	Multiple Subscriber Number (MSN)	10 entries per ISDN-BRI port		Incoming Call Log - PT	100 records/extn. 3,040 records/system			
	Number of the Characters of Name	20	Incoming Call Log - PS + Incoming Call Distribution Group	100 records/extn. or group Total 2,048 records/system				
	Printing Message	8	Call Log and Message Waiting	Message Waiting - PS + Incoming Call Distribution Group	256			
	Queuing Time Table	64		Message Waiting - PT + SLT	512			
	Ring Tone Pattern Plan	8		Outgoing Message (OGM)	64			
	Voice Message	Simultaneous Programmers		• one system programmer + 63 personal programmers • one manager programmer + 63 personal programmers • 64 personal programmers	OGM Total Recording Time	MSG4 Card: 8 minutes; ESVM2/ESVM4 Card: 20 minutes (at High recording quality)		
		SMDR Call Storage		2500 calls	Built-in Simplified Voice Message (SVM)	ESVM2/ESVM4 Card: 250 messages per card/block		
		Special Carrier Access Code		16 digits, 20 entries	SVM Total Recording Time	ESVM2/ESVM4 Card: 20, 60, or 120 minutes (depending on the recording quality)		
		Tenant		8	Hospitality and Charge Management Features	Billing items for guest rooms	2,500 records/PBX	
		Time Service Holiday		24		Hotel Operator	4	
		Verification Code		4 digits, 1,000 entries		Charge Rate	7 digits including a decimal	
Verification Code Personal Identification Number (PIN)		10 digits, 1,000 entries		Charge Denomination		3 currency characters/symbols		
Dialling		Emergency Call	32 digits, 10 entries	Networking		TIE Line Routing and Modification Table	32 entries	
		Hot Line	32 digits			Leading Number	3 digits	
		Key Pad Protocol Dial (ISDN Service Access)	32 digits			PBX Code	7 digits	
	Personal Speed Dialling	32 digits, 100 entries/extn.	NDSS: Monitored PBXs			8		
	Quick Dialling	4080 entries (80: basic memory [4 digits], 4000: expansion memory [8 digits])	NDSS: Registered Extensions for Monitor PBX			250		
	Redial	32 digits	CTI			PC Console	8	
	System Speed Dialling	32 digits, 1,000 entries/tenant			PC Phone	64		
	Groups	Broadcasting Group			8 (32 members/group)	Password	System Password for Installer	4 - 10 characters
		Call Pickup Group			64		System Password for Administrator — for PC Programming	4 - 10 characters
		Idle Extension Hunting Group			64 (16 extensions/group)		System Password for User — for PC Programming	4 - 10 characters
Incoming Call Distribution Group		128 (32 extensions/group)		System Password for Administrator — for PT Programming	4 - 10 digits			
Paging Group		32		System Password for User — for PT Programming	4 - 10 digits			
PS Ring Group		32		Manager Password	4 - 10 digits			
Trunk Group		64		Installer Level Programmer Code	4 - 16 characters			
VM (DPT) Group		2 groups x 12 ports (24 channels)		Administrator Level Programmer Code	4 - 16 characters			
VM (DTMF) Group		2 groups x 32 channels	User Level Programmer Code	0 - 16 characters				
TRS/Barring Level		7	Pro-grammer Code					
TRS/Barring Denied Code	16 digits, 100 entries/level							
TRS/Barring Exception Code	16 digits, 100 entries/level							

Features List

1. Call Handling Features

Incoming Call Features

Incoming Trunk Call Features

- Direct In Line (DIL)
- Direct Inward Dialling (DID)/Direct Dialling In (DDI)
- Multiple Subscriber Number (MSN) Ringing Service
- Calling Line Identification (CLI) Distribution
- Intercept Routing
- Intercept Routing-No Destination
- Internal Call Features
- Internal Call Block
- Incoming Call Indication Features
- Ring Tone Pattern Selection
- Call Waiting

Receiving Group Features

- Idle Extension Hunting
- Incoming Call Distribution Group Features
- Group Call Distribution
- Outside Destinations in Incoming Call Distribution Group
- Queuing Feature
- VIP Call
- Overflow Feature
- Log-in/Log-out
- Supervisory Feature

Call Forwarding (FWD)/

Do Not Disturb (DND) Features

- Call Forwarding (FWD)
- Do Not Disturb (DND)
- FWD/DND Button, Group FWD Button

Answering Features

- Line Preference-Incoming
- Call Pickup
- Hands-free Answerback

Making Call Features

- Predialling
- Automatic Extension Release
- Intercom Call
- Trunk Call Features
- Emergency Call
- Account Code Entry
- Dial Type Selection
- Reverse Circuit
- Trunk Busy Out
- Pause Insertion
- Host PBX Access Code (Access Code to the Telephone Company from a Host PBX)
- Special Carrier Access Code
- Seizing a Line Features
- Line Preference - Outgoing
- Trunk Access

Memory Dialling Features

- One-Touch Dialling
- KX-T7710 One-touch Dialling
- Last Number Redial

- Speed Dialling - Personal/System
- Quick Dialling
- Hot Line

Primary Directory Number (PDN)/

Secondary Directory Number (SDN) Features

Busy Line/Busy Party Features

- Automatic Callback Busy (Camp-on)
- Executive Busy Override
- Call Monitor
- Second Call Notification to Busy Extension
- Call Waiting Tone
- Off-hook Call Announcement (OHCA)
- Whisper OHCA

Toll Restriction (TRS)/

Call Barring (Barring) Features

- Budget Management
- Extension Dial Lock
- Dial Tone Transfer
- Walking COS
- Verification Code Entry

Automatic Route Selection (ARS) Features

- Conversation Features
- Hands-free Operation
- Off-hook Monitor
- Mute
- Headset Operation
- Data Line Security
- Flash/Recall/Terminate
- External Feature Access (EFA)
- Trunk Call Limitation
- Paralleled Telephone
- Calling Party Control (CPC) Signal Detection
- Transferring Features
- Call Transfer
- Holding Features
- Call Hold
- Call Park
- Call Splitting
- Music on Hold
- Conference Features
- Conference
- Privacy Release
- Paging Features
- Broadcasting Features
- Optional Device Features
- Doorphone Call
- Door Open
- Trunk Answer From Any Station (TAFAS)
- Background Music (BGM)
- Outgoing Message (OGM)
- Direct Inward System Access (DISA)
- Automatic Fax Transfer
- Built-in Simplified Voice Message (SVM)
- External Sensor
- External Relay Control

Caller ID Features

- Caller ID
- Incoming Call Log

Message Features

- Message Waiting
- Absent Message

Proprietary Telephone (PT) Features

- Fixed Buttons
- Flexible Buttons
- LED Indication
- Display Information

Integrated Services Digital Network (ISDN) Service Features

- Calling/Connected Line Identification Presentation (CLIP/COLP)
- Advice of Charge (AOC)
- Call Forwarding (CF) - by ISDN (P-MP)
- Call Forwarding (CF) - by ISDN (P-P)
- Call Hold (HOLD) - by ISDN
- Call Transfer (CT) - by ISDN
- Three-party Conference (3PTY) - by ISDN
- Malicious Call Identification (MCID)
- Completion of Calls to Busy Subscriber (CCBS)
- ISDN Extension
- ISDN Service Access by Keypad Protocol

E1 Line Service Features

T1 Line Service Features

- Voice Mail Features
- Voice Mail (VM) Group
- Voice Mail DTMF Integration
- Voice Mail DPT (Digital) Integration

Portable Station (PS) Features

- Portable Station (PS) Connection
- PS Ring Group
- PS Directory
- PS Feature Buttons
- Wireless XDP Paralleled Mode
- Virtual PS

Administrative Information Features

- Station Message Detail Recording (SMDR)
- Printing Message
- Call Charge Services

Hospitality Features

- Room Status Control
- Call Billing for Guest Room
- Extension Controlling Features
- Extension Personal Identification Number (PIN)
- Extension Feature Clear
- Walking Extension
- Timed Reminder

Audible Tone Features

- Dial Tone
- Confirmation Tone

Networking Features

- TIE Line Service
- Voice over Internet Protocol (VoIP) Network
- Virtual Private Network (VPN)
- QSIG Standard Features
- Calling/Connected Line Identification Presentation (CLIP/COLP) and Calling/Connected Name Identification Presentation (CNIP/CNPP) - by QSIG
- Call Forwarding (CF) - by QSIG
- Call Transfer (CT) - by QSIG
- Completion of Calls to Busy Subscriber (CCBS) - by QSIG
- QSIG Enhanced Features
- Network Direct Station Selection (NDSS)
- Centralised Voice Mail
- Network ICD Group
- PS Roaming by Network ICD Group

IP Proprietary Telephone (IP-PT) Features

- IP Proprietary Telephone (IP-PT)

Computer Telephony Integration (CTI) Features

- Computer Telephony Integration (CTI)
- PC Phone/PC Console

Cellular Phone Features

2. System Configuration and Administration Features

System Configuration - Hardware

- Extension Port Configuration

System Configuration - Software

- Class of Service (COS) Group
- Tenant Service
- Time Service
- Operator Features
- Manager Features

System Data Control

- PC Programming
- PT Programming
- Password Security
- Quick Setup
- Automatic Setup
- Flexible Numbering/Fixed Numbering
- Floating Extension
- Software Upgrading

Fault Recovery/Diagnostics

- Power Failure Transfer
- Power Failure Restart
- Local Alarm Information

Some models will be available to limited Countries. Design and specifications subject to change without notice.

Cisco RV215W Wireless-N VPN Router

Simple, Secure Connectivity for the Small Office and Home Office

Figure 1. Cisco RV215W Wireless-N VPN Router



The Cisco® RV215W Wireless-N VPN Router provides simple, affordable, highly secure, business-class connectivity to the Internet from small and home offices and remote locations.

The Cisco RV215W has a USB port to enable 3G and 4G WAN connectivity that is perfect for remote regions or temporary connectivity. The RV215W delivers connectivity for small offices and remote workers with a high-speed 802.11n wireless access point; a 4-port 10/100 Mbps Fast Ethernet switch; an intuitive, browser-based device manager; and support for the Cisco FindIT Network Discovery Utility, all at a very affordable price. Its combination of business-class features, support for virtual networks that enable highly secure guest access, simple installation, and top-quality user experience takes basic connectivity for small businesses with five or fewer employees to a new level, delivering support for the latest technologies. See Figure 1.

Product Overview

The Cisco RV215W Wireless-N VPN Router features:

- High-speed, standards-based 802.11n wireless connectivity with fast throughput and broad coverage allows people to remain productive while away from their desks
- Integrated 4-port 10/100 switch easily connects computers, printers, IP phones, cameras, and other devices to your network
- Proven firewall with access rules and advanced wireless security keeps your business assets safe from predators
- Quality of service (QoS) support prioritizes voice, video, and data traffic to keep your business moving
- Separate “virtual” networks limit access to sensitive information and deliver highly secure wireless access to guests
- IP Security (IPsec) and Point-to-Point Tunneling Protocol (PPTP) VPN provides highly secure remote connectivity for Windows and Mac OS computers

- USB port allows 3G and 4G wireless Internet connectivity anywhere (USB data card required)
- IPv6, the latest version of the Internet Protocol, lets you take advantage of the newest technologies
- An intuitive, browser-based device manager gets you up and running quickly, so you can get back to your business
- Support for the Cisco FindIT Network Discovery Utility

Figure 2. Back Panel of the Cisco RV215W Wireless-N VPN Router

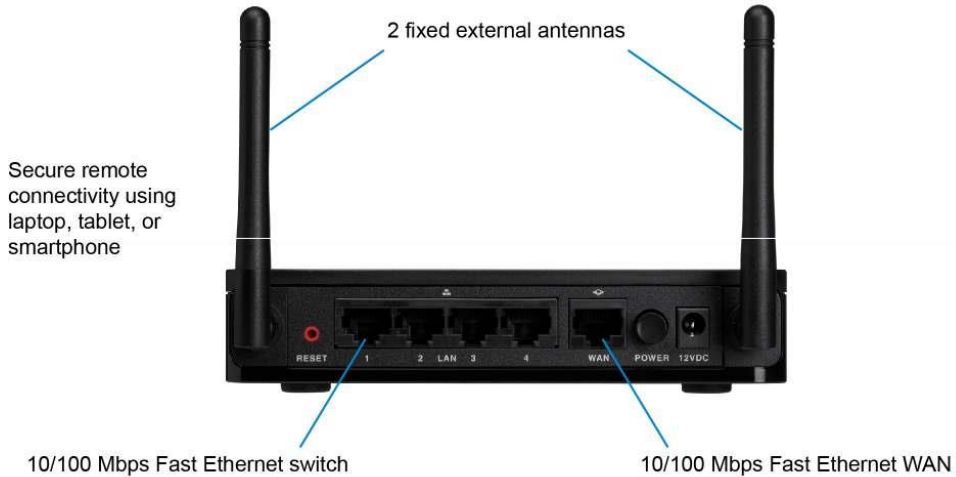
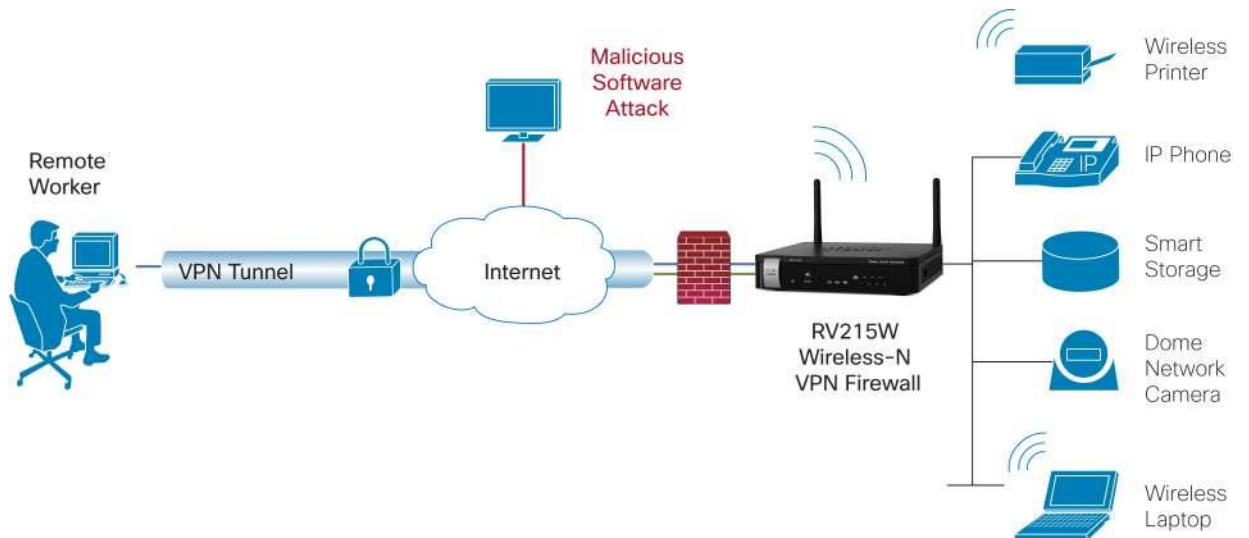


Figure 3. Typical Configuration for Cisco RV215W Wireless-N VPN Router



Product Specifications

Table 1. Product Specifications for the Cisco RV215W

Feature	Description
Routing	<ul style="list-style-type: none"> • Static routing • Dynamic routing • Routing Information Protocol (RIP) v1 and v2 • Inter-VLAN routing
Layer 2	<ul style="list-style-type: none"> • 802.1Q-based VLANs • 4 active VLANs (3 to 4094 range)
Network	<ul style="list-style-type: none"> • Dynamic Host Configuration Protocol (DHCP) server • Point-to-Point Protocol over Ethernet (PPPoE) • Point-to-Point Tunneling Protocol (PPTP) • Layer 2 Tunneling Protocol (L2TP) • DNS proxy • DHCP relay agent • IGMP Proxy and multicast forwarding • Rapid Spanning Tree Protocol (RSTP) • Dynamic DNS (DynDNS, TZO, no-ip.com, 3322.org) • Network Address Translation (NAT), Port Address Translation (PAT) • Port management • Port mirroring • Software-configurable network edge (DMZ) to any LAN IP address
IPv6	<ul style="list-style-type: none"> • Dual-stack IPv4 and IPv6 • 6-to-4 tunneling • Multicast Listener Discovery (MLD) for IPv6 (RFC 2710) • Stateless address auto-configuration • DHCP v6 Server for IPv6 clients on LAN • DHCP v6 client for WAN connectivity • Internet Control Message Protocol (ICMP) v6 • Static IPv6 Routing • Dynamic IPv6 Routing with RIP for IPv6 (RIPng) • IPv6 Rapid Deployment
Security	<ul style="list-style-type: none"> • Stateful packet inspection (SPI) firewall • Port forwarding and triggering • Firewall access control lists and content filtering • Denial-of-service (DoS) prevention • MAC-based wireless access control • Static URL blocking or keyword blocking • Schedule-based Internet access policy • HTTPS web access to the device manager • Username/password complexity enforcement • Self-signed SSL certificate • Import and export certificate using Privacy-Enhanced Mail (PEM) format
VPN	<ul style="list-style-type: none"> • 5 IPsec client sessions using Cisco QuickVPN client • 5 PPTP client sessions for remote client access • Triple Data Encryption Standard (3DES) • Support for VPN pass-through of PPTP, L2TP, and IPsec • 1 IPsec site-to-site tunnel for branch office VPN support
Quality of service (QoS)	<ul style="list-style-type: none"> • 802.1p port-based priority on LAN port, application-based priority on WAN port • 4 priority queues • Differentiated Services Code Point (DSCP) support • Class of Service (CoS) • Bandwidth management for service prioritization

Feature	Description
Management	<ul style="list-style-type: none"> • Simple Network Management Protocol (SNMP) v3 • Event logging: local, syslog, email alerts • Firmware updates through a web browser • Imported/exported configuration files in simple text format • Simple browser-based configuration (HTTP/HTTPS) • Bonjour and Universal Plug and Play (UPnP) • Network diagnostics: Ping, traceroute, and DNS lookup
Performance	<ul style="list-style-type: none"> • NAT throughput: 90 Mbps • Concurrent sessions: 5000 • VPN throughput: 5 Mbps

Wireless LAN Specifications

Table 2. Wireless LAN Specifications for the Cisco RV215W

Feature	Description
WLAN hardware	<p>IEEE 802.11n standard-based access point with 802.11b/g compatibility</p> <p>Radio and modulation type:</p> <ul style="list-style-type: none"> • 802.11b: direct sequence spread spectrum (DSSS) • 802.11g/n: orthogonal frequency division multiplexing (OFDM) • 2 omnidirectional 1.8 dBi gain fixed external antennas <p>Operating channels:</p> <ul style="list-style-type: none"> • 11 in North America • 13 in most of Europe • Automatic channel selection <p>Transmit power:</p> <ul style="list-style-type: none"> • 802.11b: 17 dBm +/- 1.5 dBm • 802.11g: 15 dBm +/- 1.5 dBm • 802.11n: 12.5 dBm +/- 1.5 dBm <p>Receiver sensitivity:</p> <ul style="list-style-type: none"> • -87 dBm at 11 Mbps • -71 dBm at 54 Mbps • -68 dBm at msc15, HT20 / -66dBm at mcs15, HT40°
Wireless Domain Services (WDS)	<ul style="list-style-type: none"> • Wireless signals can be repeated by up to 3 compatible devices
Wi-Fi Multimedia (WMM)	<ul style="list-style-type: none"> • WMM with QoS (802.11e), WMM power save (WMM-PS)
Active WLAN clients	<ul style="list-style-type: none"> • Up to 32 clients
Service Set Identifiers (SSIDs)	<ul style="list-style-type: none"> • Up to 4 separate wireless networks
Wireless isolation	<ul style="list-style-type: none"> • Wireless isolation between clients
WLAN security	<ul style="list-style-type: none"> • WPS (Wi-Fi Protected Setup), Wired Equivalent Privacy (WEP), Wi-Fi Protected Access (WPA) personal and enterprise, WPA2 personal and enterprise

System Specifications

Table 3. System Specifications for the Cisco RV215W

Feature	Description
WAN	One 10/100 Mbps Fast Ethernet WAN port
LAN	Four 10/100 Mbps Fast Ethernet LAN ports
WLAN	Built-in 802.11n wireless access point
LEDs	Power, WPS, WAN, Wireless, LAN (ports 1-4)
Switch	Power button (on/off)
Physical dimensions (W x D x H) and weight	<ul style="list-style-type: none"> • 5.91 in. x 5.91 in. x 1.18 in. (150 mm x 150 mm x 30 mm) • 0.61 lb (0.3 kg)

Feature	Description
Power	12V 1.67A
Certifications	<ul style="list-style-type: none"> • FCC Class B • CE • IC • UL • cUL • Wi-Fi • C-Tick
Environmental operating range	<ul style="list-style-type: none"> • Operating temperature: 0° to 40°C (32° to 104°F) • Storage temperature: -20° to 70°C (-4° to 158°F) • Operating humidity: 10% to 85% noncondensing • Storage humidity: 5% to 90% noncondensing

Configuration Requirements

Table 4. Configuration Requirements for the Cisco RV215W

Feature	Description
Network adapter	PC with network adapter and Ethernet cable
Web-based configuration	Web browser

Ordering Information

Table 5. Ordering Information for the Cisco RV215W

Part Number	Product Name
RV215W-A-NA-K9	Cisco RV215W Wireless-N VPN Router (USA)
RV215W-E-G5-K9	Cisco RV215W Wireless-N VPN Router (Europe)
RV215W-A-AU-K9	Cisco RV215W Wireless-N VPN Router (Australia)

Warranty Information

Find warranty information at Cisco.com on the [Product Warranties](#) page.

For More Information For more information, visit

www.cisco.com/cisco/web/solutions/small_business/products/routers_switches/small_business_routers/index.html



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Televes®



Product Guide

► Introduction

The path initiated with the deployment of DTT will take a step further with the development of the digital dividend a process which will establish the technical conditions for the allocation of the 800 MHz band (channels 61- 68) in the EU for the introduction of advanced mobile phone services and mobile Internet (Long Term Evolution - LTE).

The use of channels 61 to 68 for mobile services responds, on one hand, to an intent to harmonize the use of this band across Europe and, on the other, to reduce the cost of the network infrastructure (less cells required, better penetration and better coverage at these frequencies).

Mobile phone connections will represent 80% of the broadband connection in the year 2014. This spectrum must be harmonized in the 800 MHz band in order to develop the maximum potential of LTE technology and make it available to societies growing demand for services.

The release of the digital dividend must be completed in Europe before the 1st of January 2015. Some governments, like the UK, have already announced that these frequencies will be released during the first half of 2013.

In some countries, the release of the digital dividend could face an added complexity since DTT channels will need to be relocated to channels between 21 and 60. So during this transition retuning will be required by the end user and maybe adaption of the installation. The planification for the relocation of frequencies is normally regulated by a government agency and will be part of an on going plan; in the UK the regulator is OFCOM.

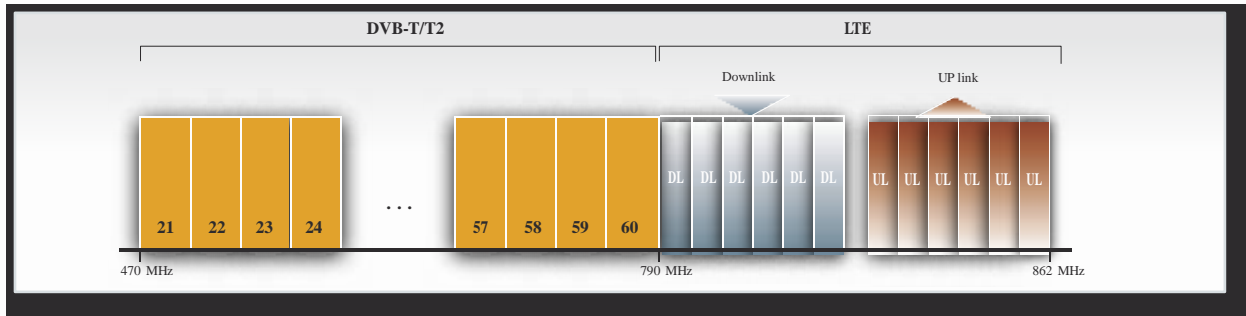
For the installers of domestic and commercial TV reception systems, the digital dividend is a challenge. As an industry leader, Televes has worked hard to give the professional installer all the support required, not only with products but also with technical support.



The radioelectric spectrum

uHf-SPEctruM

The UHF band is currently exclusively used by broadcasted DVB-T/T2 transmissions. However, this will change with the release of the radioelectric spectrum between channels 61 and 68 for the allocation of mobile broadband services, also known as 4G.



LtE SPEctruM

The frequency spectrum between 790 and 862 MHz will be allocated to the new LTE services. LTE development reserves only a 1 MHz guard band between LTE and the possible DVB-T/T2 services located at channel 60.

We should be able to differentiate between LTE downlink signals and LTE uplink signals.

u LTE downlink signals

These are the download transmissions from the mobile network to the mobile terminal and can be received by DTT aeriels.

Depending on the amplification system being used in the installation (broadband amplification, programmable amplifiers or single channel amplifiers) a protection ratio can be established for channels 60 and 59 plus the rest of the channels, bearing in mind the small guard interval (1 MHz) between LTE and DTT.

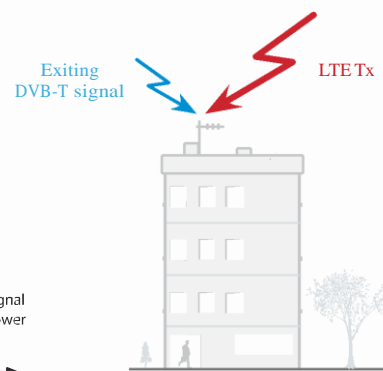
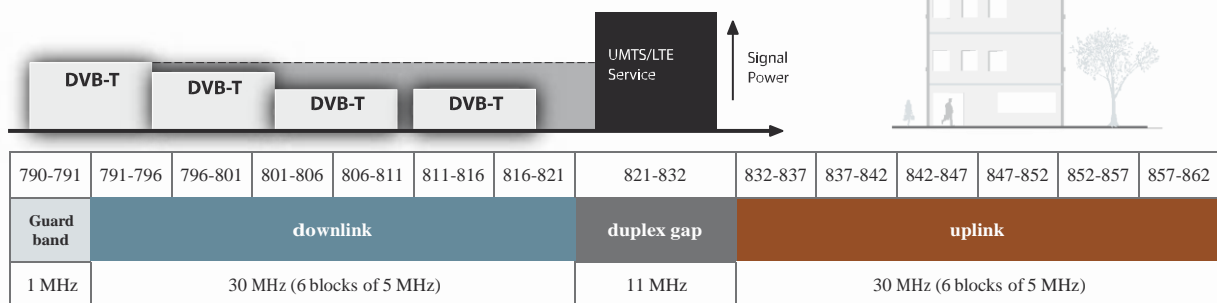
Domestic systems will present similar problems, as they are exposed to LTE downlink signals that can reach the amplification, these will normally be broadband and hence more sensitive to interference.

u LTE uplink signals

Signals being transmitted from the LTE user terminal that will be received as interfering signals by the receivers integrated in the TV's or the stand alone set top boxes.

Both for domestic and communal system the uplink signals could filter into the distribution system through a poorly screened cable, outlet plate or connector, the interference could even cause pixelization.

Influence of LTE over DTT





The deployment of LTE transmitters will, presumably, be done using the same locations as the current UMTS (3G) and/or GSM networks, so they will be in proximity with TV reception systems, most of these TV systems will have broadband amplification. In this scenario, the TV reception systems will simultaneously receive DTT and LTE transmissions. This will generate intermodulation signals to a greater or lesser extent depending on many different factors (level of the received signals, amplification, DTT channels received, etc.). The intermodulation interference will travel through all the distribution components until it reaches the set top box.

In anticipation to LTE deployment, Televes has participated in trials and has done in depth analysis of the implications that this technology will have on the reception of broadcasted TV.

As the result of the work carried out by our R&D team a company leader in the industry, Televes has developed a **complete range**



of products specifically designed to minimize the potential of **LtE interference** over DTT services. All these products will carry the **LtE ready** stamp, registered by Televes.

RANGE OF PRODUCTS SPECIFICALLY DESIGNED FOR LTE

filTErS

403101	LTE FILTER "F" 470...774MHz (Ch21-58)
403401	LTE FILTER "F" 5...790MHz (Ch21-60) SELEC.
404411	BLIST. LTE FILTER "IEC" 470...774MHz (Ch21-58)
404412	BLIST. LTE FILTER "IEC" 5...790MHz (Ch21-60) SEL.
405101	LTE FILTER "EasyF" 470...774MHz (Ch21-58) OUTDOORS
405401	LTE FILTER "EasyF" 5...790MHz (Ch21-60) SELEC. OUTD.
403301	LTE MICROCAVIT. FILTER "F" 5...790MHz SEL.

AntEmNAS

149901	DAT HD BOSS 790 ANT.(Ch21-60) G32dBi BOXED
149101	V HD 790 TERR.ANT. UHF(Ch21-60) G15dBi BOXED
130201	IINNOVA BOSS ANT. (Ch21-69 or Ch21-60) G25dBi

Q-BoSS

561901	Q-BOSS 790 "EasyF" Ch21-60 G15dB Vo102
562001	Q-BOSS 774 "EasyF" Ch21-58 G12dB Vo100

MAStHEAd AMPLiFIErS

561501	MAST AMP.12..24V 3I/10 B3/U-FMmx-SATmx USOS
561601	MAST AMP. 12..24V 3I/10 U-Vmix-SATmix USOS
561701	MAST AMP.12..24V 3I/10 U-U-Vmix
561801	MAST AMP. 12..24V 3I/10 BIII-U-FMmix USOS
562701	DOM.AMP.10 VHF/UHF G13/24dB USOS + DC
562711	DOM.AMP.10 V/U G13/24dB USOS+DC W/O PSU
562702	DOM.AMP.20 VHF/UHF G10/21dB USOS + DC
562712	DOM.AMP.20 V/U G10/21dB USOS +DC W/O PSU
562703	DOM.AMP.20+TV VHF/UHF G9/20dB USOS + DC
562713	DOM.AMP.20+TV V/U G9/20dB USOS + DC W/O PSU

562302	MINIKOM AMP.5/1 "EasyF" FM-V-U-21..32-36..60/69
562401	MINIKOM AMP.MATV 4I/10 "EasyF" FM-V-U-U
562501	MINIKOM AMP.MATV 3I/10 "EasyF" FM-V-U
562601	MINIKOM AMP.SMATV 4I/10 "EasyF" FM-V-U-SAT

ProGrAMMABLE AMPLiFIErS

532740	AVANT3
532840	AVANT HD

SiNGLE cHAnnEL AMPLiFIErS

508012	IF BAND AMPLIFIER T12	SAT
508112	BI BAND AMPLIFIER T12	BI
508212	FM BAND AMPLIFIER T12	FM
509912	DAB BAND AMPLIFIER T12	DAB
508312	BIII BAND AMPLIFIER T12	BIII
508712	LOW S BAND AMPLIFIER T12	SB LOW
508812	HIGH S BAND AMPLIFIER T12	SB HIGH
508912	HYPERBAND AMPLIFIER T12	HYPERB.
509812	SELECTIVE SINGLE CHANNEL AMPLIFIER	UHF
508612	SINGLE CHANNEL AMPLIFIER	UHF
549812	SWITCHED PSU T12	
509512	SEL. SINGLE CHANNEL AMP WITH AGC T12	UHF
509712	SINGLE CHANNEL AMP. WITH AGC T12	UHF

outLEt PLATES

522610	OUTLET PLATE,47..2150MHz 1-1,5dB+DC
523110	THROUGH OUTLET PLATE 5...790MHz TV-FM 11-29dB

431001	COAX LEAD "IEC" ELBOW.M-F WHITE 1,5M
431002	COAX LEAD "IEC" ELBOW.M-F WHITE 2,5M

SPeCtrUM AnALYZEr

5960	H60 ADVANCE (FULL HD + CI+FO.+EXTENDED SPECTRUM 5...3300 MHz)
596005	H60 ADVANCE (FULL HD + CI+EXTENDED SPECTRUM 5...3300 MHz+SELECTIVE F.O)

LTE FILTERS 58 and 60

Televes has designed two types of filters with different rejection and performance depending if there are TV services over channel 58 or not. Once decided the type of filter based on the location of the channels, we will need to choose the format.

PLUG-IN INDOORS (F & IEC)



403101
403401

EASY F OUTDOORS

The most reliable and quick connection

Reduces the installation time by 50%

✓ Built-in system

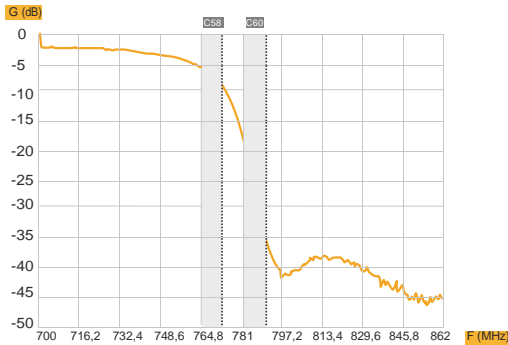
You will never require extra connectors



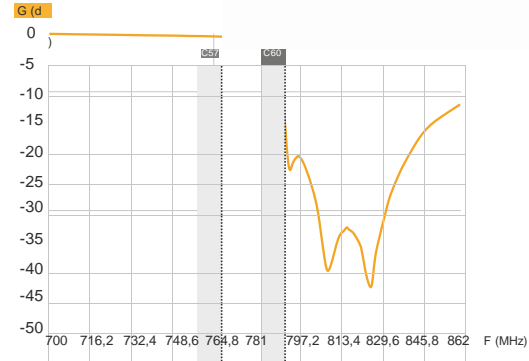
405101
405401

REF	FILTERS	Pass band (MHz)	Rejected band (MHz)	Pass band attenuation (dB)	Rejected band attenuation (dB)
405101	LTE 1I/1O EasyF Ch 21-58				
403101	LTE 1I/1O F Ch 21-58	470 - 774	791 - 862	<3 (7@774MHz)	>25
404411	LTE 1I/1O IEC Ch 21-58				
405401	LTE 1I/1O EasyF Ch 21-60				
403401	LTE 1I/1O F Ch 21-60	5 - 790	793 - 821	<1 (5@790MHz)	>20
404412	LTE 1I/1O IEC Ch 21-60				
403301	CAVITIES 1I/1O F Ch 21-60			<0,5 (2@790MHz)	

The quality in the filter's response can only be appreciated with graphs as the ones below, where the performance of the filter in the high UHF channels can be seen in detail.



c58 LTE filter rejects signals from 774MHz onwards. Specifically recommended for DTT installations with multiplex below channel 58.



c60 LTE filter rejects signals from 782MHz onwards. Specifically recommended for DTT installations with multiplex channels 59 or 60.

Grafica 2

the filters for LTE can be designed using different technologies:

■ **LC.** Using discrete components (L, C) important rejection to the interference band could be achieved but it will increase the insertion losses in the DTT band. Its use could lead to having to readjust the amplifiers in the system.

■ **ceramic resonators.** The ceramic resonating filters resolve the problems with the insertion losses of the LC filters. If the resonators are not of high quality, variations in temperature will cause variations in the rejection and insertion losses in the DTT channels near LTE (channels 59 and 60).

■ **SAW filters.** The surface wave filtering (SAW) achieves high rejection in small frequency intervals. It generates high insertion losses and why they need to be combined with an amplifier, which complicates its design and increases its cost.

■ **cavity filters.** They are formed by three coupled transmission lines, which are located resonant metal cavities. They achieve optimum rejection characteristics (25-30 dB and even more), whilst maintaining minimum insertion losses (< 1 dB in the DTT band with 2 dB typical in the high UHF channels 59, 60).

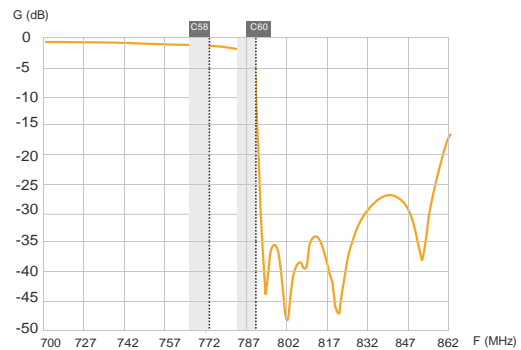


MicrocAVitiES filTEr (F FORMAT)

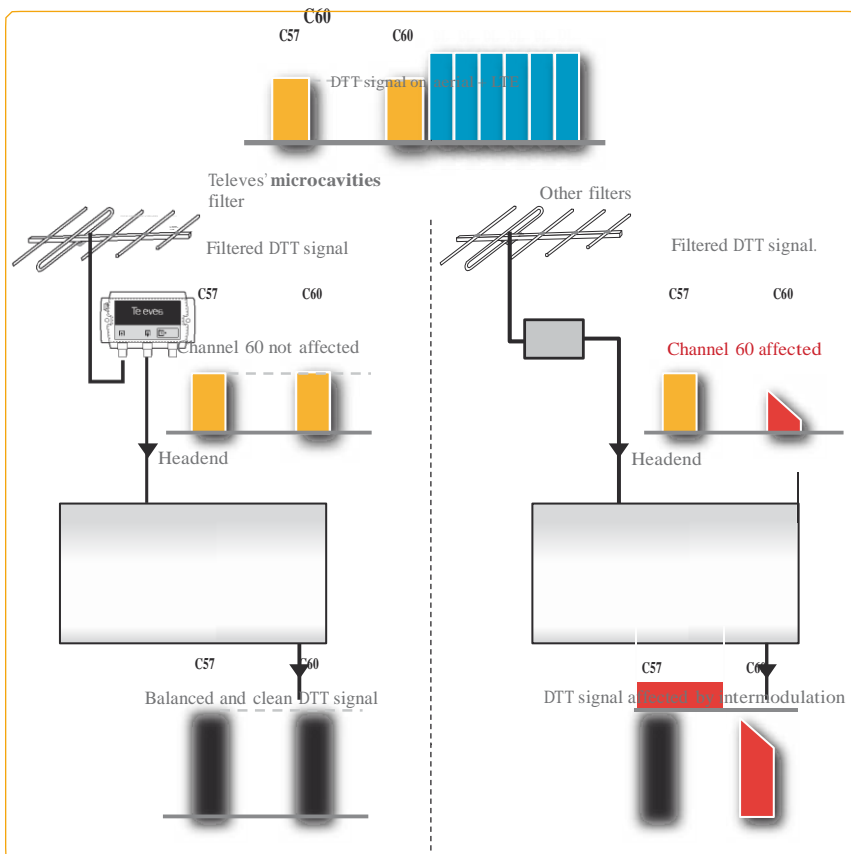
Normally these types of filters are bulky and heavy, hence the reason why they were never used in MATV solutions, restricting their use to broadcasting solutions or very high end MATV headends.

Televés has achieved it with its **microcavities filter** (patented system) and is implementing the technology in a small chassis (10 cm x 5 cm) and with a weight of less than 250 grams, which makes it suitable for internal or external use. In order to achieve this, Televés uses what is called micro-cavities, in which the resonant elements of high quality factor (Q) are allocated.

The **microcavities filter** achieves outstanding performance with temperature variation and its robust construction makes it very resistant to vibration, the whole comprising the reception of DTT. They could be used either as a preventive measure or a mitigation solution.



It rejects signals above 780MHz with minimum insertion losses
Microcavities LTE C60 filter



In the presence of channel 60, depending on the chosen filter, it could be that the headend (amplifier) is unable to equalize the output level of all the available channels.

In the example figure we show channel 60 being received by the aerial and balanced with respect to the rest of the available channels. If the filter used is not a micro-cavities filter ref.403301, it is more likely that the headend will be unable to achieve the same output level for channel 60 as it does for the rest of the channels.

Both for broadband amplifiers or single channel amplifiers, the increase in gain that an amplifier results in the generation of intermodulation products.

▶ Intelligent antennas

Evolution of the species

Conventional electronic antennas are nothing more than basic ACTIVE AERIALS, this is an aerial with an amplifier which in many cases has an unacceptable noise figure.

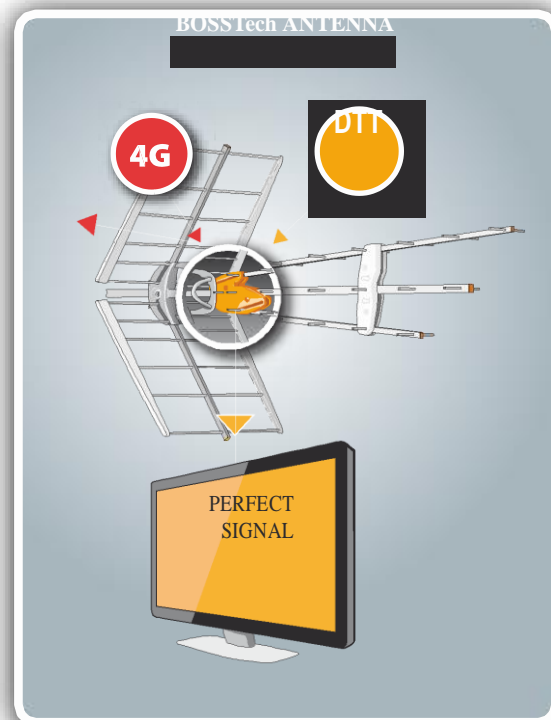
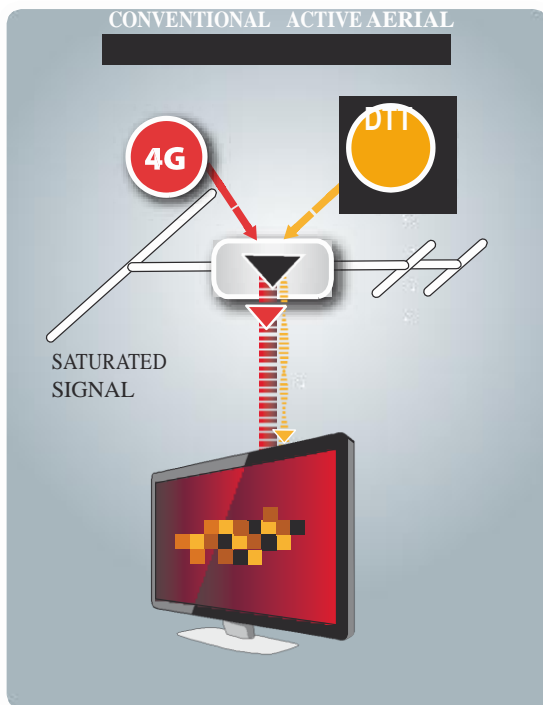
Televes' antennas with BOSSTech are not active aerials. The intelligent device built into the antenna which can be activated or not depending on the requirements of the installation, it automatically regulates the gain to provide the TV with the best signal quality.

ACTIVE aerials could cause problems that render them useless in the current scenario with DTT and in the future for co-existence of DTT with LTE/4G.

Whilst **an active aerial will saturate in the presence of a LTE/4G signal**, the BOSSTech will regulate its gain to avoid saturation, several radiated test where DTT and 4G coadjacent signals were received by a BossTech antenna. The option of blocking the power to the antenna can also be used in extreme cases.



The BOSSTech device allows the installer and the end user to completely forget about the signal level in reception, resolving those problems caused by level adjustment or the signal fluctuation that could occur during the life span of the installation.



Installing a Televes BOSSTech antenna assures the continuity in quality of service and the best possible performance of the system, even with LTE/4G.

INTELLIGENT ROOF TOP ANTENNA DAT HD BOSS 790

NEW

DAT HD BOSS 790

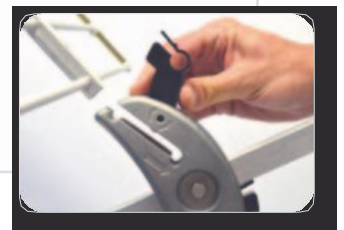
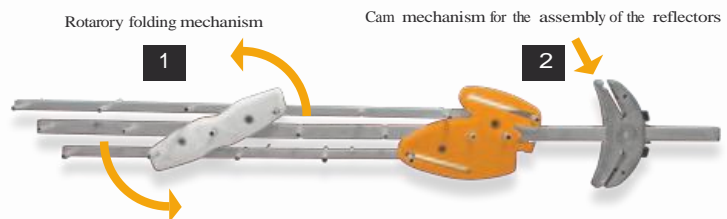
This antenna has been designed to optimize rejection to the LTE band whilst keeping the reception characteristics in the UHF TV band, it is an evolution of the DAT HD BOSS antenna with angular triple array patented by Televes.

the antenna incorporates the BoSStech device, with improved electronic performance.

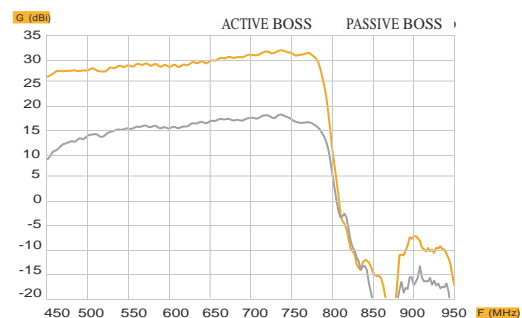
NEW ASSEMBLY SYSTEM

The new DAT incorporates a new **folding mechanism of the directors** and a **cam mechanism in the reflector**

the new folding mechanism of the directors not only simplifies the assembly of the antenna but also optimizes its transport and storage.

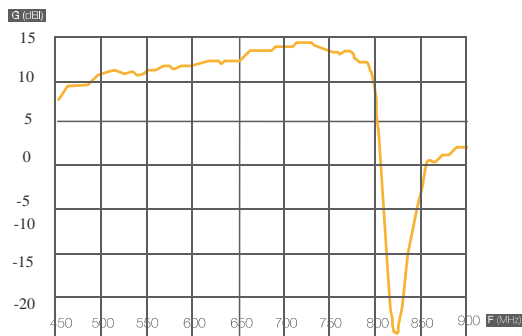


REF.149901		SPECIFICATIONS	
Mode		Passive	Active
Bandwidth	MHz	470-790 (Ch 21-60)	
Maximum gain	dBi	17	32 max
Noise figure	dB	-	1.2 typ
Output level		-	Self adjustable
Recommended input level	dB μ V	>75	<75
Powering	V	0	12-24
Maximum consumption	mA	0	45 (24V)/35(12V)
Lobe width	°	30	
Wind load	N	120 (130km/h)	165 (150 km/h)



ROOF TOP ANTENNA V HD 790

Antenna specifically designed to optimize the reception of channels 21 to 60 whilst achieving maximum out of band rejection for the 4G/LTE band. Its clever design allows the antenna to achieve high levels of out of band rejection with no built-in filtering.



Made of high grade aluminium and plastics and very easy to assemble, the V790 has been designed to withstand the test of time.

V^{HD}790



caï
LTE Ready benchmark
Standard F

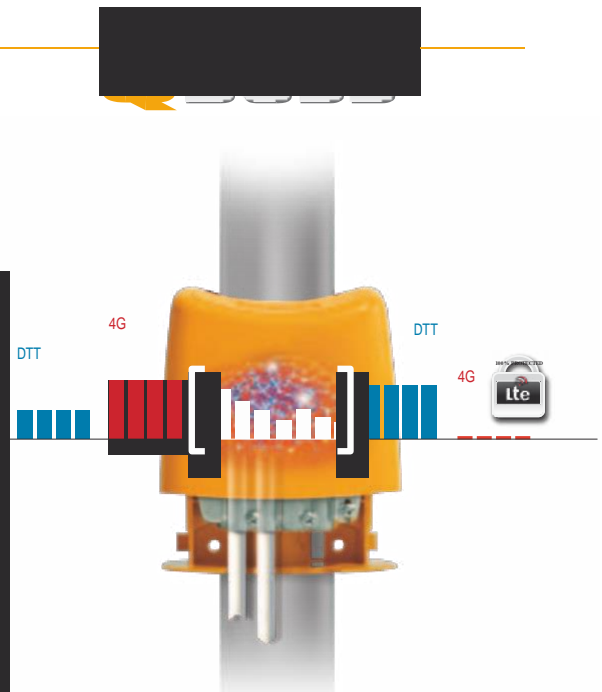
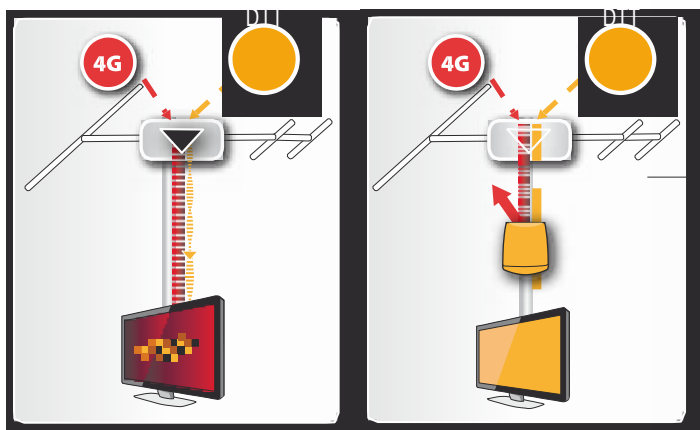
REF. 149101	SPECIFICATIONS	
Bandwidth	MHz	470 - 790 (Ch 21-60)
Gain	dBi	15
F/B ratio	dB	> 23
Wind load	N	93 (@ 130 km/h) 128 (@ 150 km/h)

Q-BOSS

The only device capable of transforming any aerial into a **BoSStech antenna**, converting your active or passive aerial into an intelligent device.

GENERIC AERIAL WITH NO Q-BOSS

ADAPTED AERIAL



Q-BOSS - EASY F	POWERING (V)	GAIN (dB)		OUTPUT LEVEL (dBuV)	
		UHF	UHF	UHF	UHF
Ref.562001 Q-BOSS 774 Ch21-58	12...24V	12	100		
Ref.561901 Q-BOSS 790 Ch21-60		15	102		

INTELLIGENT SET TOP ANTENNA INNOVA BOSS

INNOVA^{BOSS}

SPECIFICALLY DESIGNED FOR THE RECEPTION OF DTT INDOORS.

The best possible DTT reception, HD services and 3D TV indoors.

Incorporates the BOSS technology that **automatically regulates the output signal**, which ensures the optimum reception in areas with intermittent reception, whilst eliminating the interferences caused by people moving around the room in which its installed.

its **exceptional radiation lobe of 360°** allows this set top antenna to be installed in any position with no worries about its orientation.

- ✓ **Plug&Play.**
- ✓ **No need to be orientated:**
- ✓ **LTE Ready.**

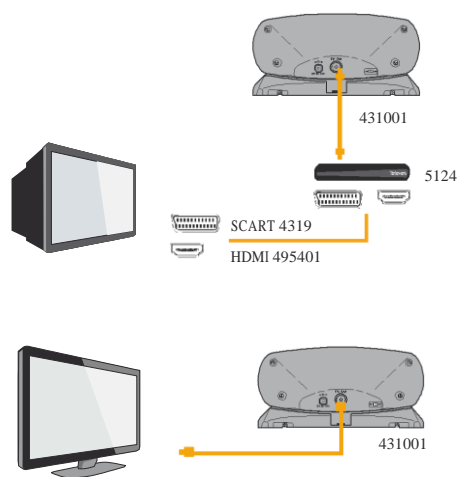
REF. 130201		SPECIFICATIONS
Bandwidth	MHz	Pos. 60: 470 - 790 Pos. 69: 470 - 862
Maximum gain	dBi	25*
Noise figure (typ.)	dB	3
Maximum consumption (5 ... 12V)	mA	40
Protection index	IP	20
Dimensions	mm	215 x 102 x 105
Weight	gr	350

* Self regulated gain for high input levels.

The Innova Boss **incorporates a easy switch ON-OFF** that allows its user to turn ON or OFF the protection against LTE interference as necessary.

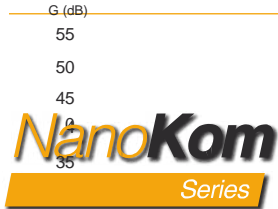


Connections depending on type of TV set



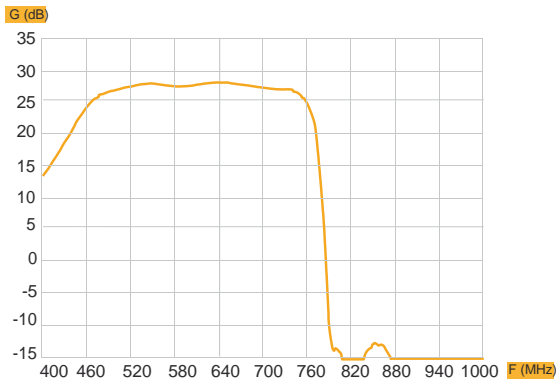
Amplification

MASTHEAD AMPLIFIERS



- Optimized for the band between channels 21 and 60.
- Incorporates LTE Switch ON/OFF.
- Incorporates DC pass Switch (ON/OFF).
- Improved noise figure performance (NF).

Once the output level has been adjusted through a potentiometer located on the front, the amplifier will maintain this level by means of an automatic regulation system.



REF.	DESCRIPTION	NOISE FIGURE (dB)		GAIN (dB)		MAX. OUTPUT LEVEL (dBuV)		REMARKS
		UHF	VHF	UHF	VHF	UHF	VHF	
561501	(U+BIII)dc-(FM+BI)mix-Flmix	1.5	3.5	31	18	103	103	Auto. indep. Regulation U and BIII. Indep. Reg. Vout U and BIII DC (U+BIII) ON/OFF BIII:174-253 MHz LTE Filter ON/OFF
561601	UHF-VHFmix-Flmix	1	-	31	-1	103	-	Auto. Regulation UHF Vout regulation U VHF:47-253 LTE Filter ON/OFF
561701	U1dc-U2-VHFmix	6	-	27	-1	103	-	Indep. Atten. U1 and U2 DC U1 ON/OFF VHF:47-253 LTE Filter ON/OFF
561801	U-BIII-(FM+BI) mix	1	3	31	18	103	103	Auto. Indep. Regulation U and BIII Indep. Reg. Vout U and BIII BIII:174-253 MHz LTE Filter ON/OFF

SETBACK AMPLIFIERS

- Optimized for the band between channels 21 and 60.
- Remotely powered through any of its outputs.
- Detachable PSU, allowing flexibility in its location.

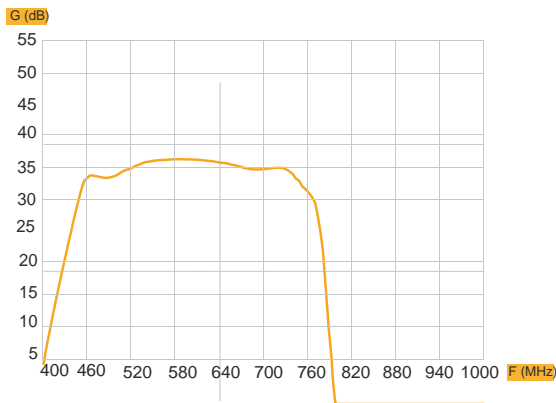
Once its output level has been set by means of a potentiometer located on the front, the amplifier will keep this level by means of an automatic gain regulation system.



REF.	DESCRIPTION	GAIN (dB)		MAX. OUTPUT LEVEL (dBuV) DIN45004B		NOTES
		UHF	VHF	UHF	VHF	
562701	AS VHF/UHF 1E/1S	24	13	106	98	Detachable PSU included Common auto. regulation VHF/UHF LTE Filter ON/OFF DC IN ON/OFF
562702	AS VHF/UHF 1E/2S	21	12	103	95	
562703	AS VHF/UHF 1E/2S+TV	20	9	102	94	
562711	AS VHF/UHF 1E/1S	24	13	106	98	Detachable PSU not included Common auto regulation VHF/UHF LTE Filter ON/OFF DC IN ON/OFF
562712	AS VHF/UHF 1E/2S	21	12	103	95	
562713	AS VHF/UHF 1E/2S+TV	20	9	102	94	

LAUNCH AMPLIFIERS

- Optimized for the band between channels 21 and 60.
- New compact design.
- Switch mode PSU, best guarantee of low consumption, and detachable.



REF.	DESCRIPTION	GAIN (dB)			MAX. OUTPUT LEVEL (dBuV)			NOTES
		UHF	VHF	FI	UHF	VHF	FI	
562301	AS FM-VHF-BIV(21-35)-BV(39-60)-UHF	37/27	30/20	-	117	113	-	BI is not amplified VHF: 174-400 MHz. Switchable LTE filter
562302	AS FM-VHF-BIV(21-32)-BV(36-60)-UHF	37/27	30/20	-	117	113	-	
562401	AS FM-VHF-UHF1-UHF2	37/27	30/20	-	117	113	-	
562501	AS FM-VHF-UHF	40/30	33/23	-	117	113	-	
562601	AS FM-VHF-UHF-FI	40/30	30/20	35-42	112	103	121	

► Amplification

PROGRAMMABLE AMPLIFIER AVANT 3

Programmable filtered launch amplifier for domestic or/and communal systems. Incorporates 5 programmable filters with variable bandwidth, and can isolate the DTT signal from LTE interferences.

Main features

- Five or seven channels per filter.
- Self adjustable thanks to an AGC (Automatic Gain Control) in each filter, with an LED to indicate if we have enough input level in UHF.
- VHF input with expanded bandwidth, designed for the combination of services generated from signal processing headend.
- Expandable system; extra Avant3's can be linked.
- Ease of programming by means of handheld programmer and/or software.
- Switch mode PSU with low consumption and high efficiency.



P 532740

PARAMETERS		INPUTS					OUTPUT
		UHF1	UHF2	BI / FM	VHF	IN MIX	OUT
Bandwidth	MHz	470 - 790	470 - 790	47-68 / 87 - 108	111-406	47-406 / 470-790	470-790
Filters per input		5 - 0	2 - 3	-	-	-	-
Number of channels per filter		1-5 (21-30) / 1-7(31-69)		-	-	-	-
Gain	dB	52 ± 3		32 ± 2 / 15 ± 2	35 ± 2	3 ± 3 (INMIX-OUT)	2 ± 2 (UHF1, UHF2-UHF)
Gain regulation	dB	-		0 - 18	0 - 15	-	-
AGC's margin per filter	dB	0 - 20		-	-	-	-
Output level regulation	dB	15		-	-	-	-
Max. Input level	dBμV	95		-	-	-	-
Max. Output level 2 DTT Ch (typ.)	dBμV	113		111	111	111 / 113	-
Output level DIN 45004B (typ.)	dBμV	116		114	114	114 / 116	-
Output level IMD3 (2CH-60dB) (typ.)	dBμV	113		111	111	111 / 113	-
Rejection	dB	20 (± 16MHz)		20 (± 206MHz)	15 (± 40MHz)	-	-
Noise figure (typ.)	dB	7		7	7	-	-
Line power ⁽¹⁾ (12Vdc)	mA	50	50	-	-	-	-
Powering	V~						196 - 264
Maximum current	mA						80
Maximum power	W						9
Protection Index							IP20
Temperature range	°C						-5 a +45

(1) Controlled by switch at the back.

PROGRAMMABLE AMPLIFIER AVANT HD

Programmable filtered launch amplifier for large domestic or communal systems, characterised for its selectivity and capacity to balance incoming signals.

Main features

- Easy to install and program.
- High output level and input dynamic margin.
- External programming.
- Very flexible configuration.
- Allows to clone configuration between devices.
- Access to configuration can be blocked via password.
- Low consumption.



P 532840

Inputs		UHF1	UHF2	UHF3	FM	BI	47-790 MHz		IF SAT
Band	MHz	470 - 790			87 - 108	174 - 260	47 - 370	370 - 790	950 - 2150
Gain	dB	Auto (máx. 51 ± 3)			Auto (máx. 41 ± 3)	Auto (máx. 44 ± 3)	Auto (máx. 36 ± 2)	Auto (máx. 39 ± 2)	42 ± 2 - 45 ± 2
Filter configuration	N°	10	0	0	-	-	-	-	-
		9	0	1	-	-	-	-	-
		7	2	1	-	-	-	-	-
		6	3	1	-	-	-	-	-
		5	3	2	-	-	-	-	-
Number of channels per filter	N°	0 - 5 **			-	-	-	-	-
Slope control	dB	0 - 9 **			-	-	-	-	0 - 12
Optimum input margin	dBμV	60 - 105			60 - 85	62 - 87	69 - 73	70 - 74	-
Gain regulation	dB	0 - 20 *			0 - 25 - OFF*	0 - 25 - OFF*	-	-	0 - 24 - OFF*
Manual gain regulation	dB	± 9 (per filter)			± 9	± 9	-	-	-
Output level ***	dBμV	121			115	115	115	121	125
Output level regulation	dBμV	100 - 115			90 - 105	95 - 110	95 - 110	100 - 115	-
Noise figure	dB	9 typ.			10	10	-	-	9
Rejection	dB	20 (±16 MHz)			20 (±16 MHz)	20 (±16 MHz)	-	-	40 (a 862MHz)
Line power (automatic) I. max.	V~mA	24			-	24	-	-	13/17 (22KHz)
		60			-	60	-	-	300
Mains voltage/frequency	V~/Hz	196 - 264 / 50-60							
Max. current	mA	255							
Max. power consumption	W	26							
Max. working temperature	°C	45							
Protection index		IP 20							

* Automatic adjustment (Depending on the wished level of exit and the signal of entrance).

** Programmable adjustment.

*** The output level depends on the n° of channels.

► Amplification

T.12 SINGLE CHANNEL AMPLIFIERS

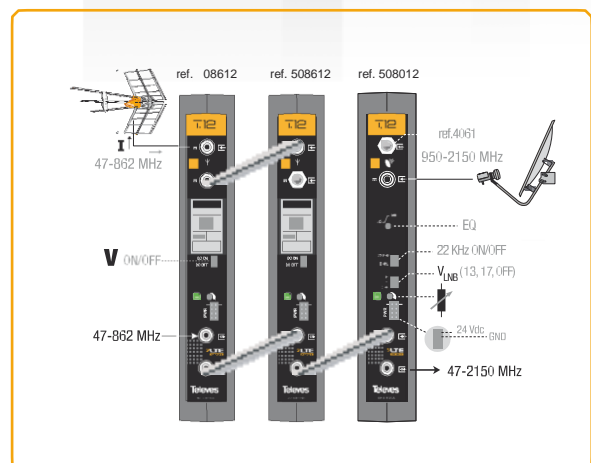
Televés launches the new T.12 single channel amplifiers, an advanced evolution of a product range, the result of Televés' broad experience accumulated since 1981 when this technology was first introduced.

Main features

- Completely compatible with the previous model (T03) and its PSU.
- Great reliability, thanks to its robotised manufacturing process.
- Improved screening.
- Modular and expandable system.
- Powering of up to 24 modules, from a PSU.
- Line powering of mastheads.



REF.	DESCRIPTION	
508012	IF BAND AMPLIFIER T12	IF
508112	BI BAND AMPLIFIER T12	BI
508212	FM BAND AMPLIFIER T12	FM
509912	DAB BAND AMPLIFIER T12	DAB
508312	BIII BAND AMPLIFIER T12	BIII
508712	LOW S BAND AMPLIFIER T12	LOW SB
508812	HIGH S BAND AMPLIFIER T12	HIGH SB
508912	HYPERBAND AMPLIFIER T12	HYPERB.
509812	SELECTIVE SINGLE CHANNEL AMPLIFIER	UHF
508612	SINGLE CHANNEL/MULTICHANNEL AMP.	UHF
549812	SWITCHED PSU T12	
509512	SELECTIVE SINGLE CH. AMP. W/ AGC T12	UHF
509712	SINGLE CHANNEL AMP. W/ AGC T12	UHF



With the T.12 single channel amplifiers Televes has produced a product that achieves an outstanding performance in the treatment of the signal, with precise and simple frequency adjustments.

The T.12 modules are manufactured in latest generation robotised lines and are subject to the strictest quality control, a guarantee of reliability and stability with no precedents in this industry.

Ready for the upcoming introduction of LTE services, this product carries Televes' LTE Ready stamp.

Televes has put a lot of trust in the T.12 modules, the new reference on single channel amplifiers in the market.



REFERENCES			508112	508212	508312	508712	509912	508812	508912	508612	509812	508012	509712	509512	
	f _w	MHz	47 - 88	87.5 - 108	174 - 230	104 - 174	195 - 232	230 - 300	302 - 470	470 - 865		950-2150	470-862	470-862	
	BW	MHz	7	-	7	7	37	7	8	8 56	8	950 - 2150	8	8	
	G		50	35	45	58	45	58	58	50	55	35 50	57	57	
		dB	35	35	35	35	35	35	35	30	30	20	30	30	
	EQ		-	-	-	-	-	-	-	-	-	0 12	-	-	
	Vout	dBμV	A	123*	114*	123*	125*	-	124*	125*	125 111*	121*	124**	125	121
	D	-	-	-	-	114***	-	-	118 102*	115*	-	118		114	
	I	mA	100									400	100	100	
	V	Vdc	24									13/17	24	24	
		KHz	-									0/22	-	-	
	I _c	mA	70									95	133	90	90
	P	dB	≤ 1	<3	<3	<1	<3	<1	<1	<3	<2	-	<1	<2	
	R _{n+1}		-	-	-	-	-	-	-	>3	>18	-	>3	>18	
	R _{n+2}	dB	>40	-	>30	>30	>20	>25	>30	>15	>50	-	>25	>50	
	R _{n+3}		-	-	-	-	-	-	-	>45	-	-	>50	-	
Noise figure	NF	dB	<9									<11	<12.5	<9	<11
AGC	AGC	dB	-									30			

* EN 50083-5

** DIN VDE0855/12

***di = 50dB (2ch, 4MHz)

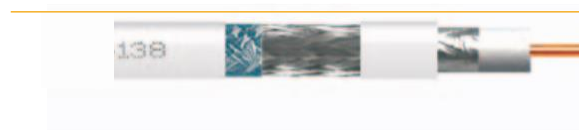
Distribution

Once 4G services are deployed, there is the possibility that signals will be transmitted from the mobile handset, the so called uplink, these could filter into the coax distribution network.

televes recommends the use of the EASY-f connection system for installations perfectly prepared for the deployment of LTE/4G.

The passive distribution equipment should be selected with due care and should be correctly screened to avoid the ingress of signals that could interfere with the TV signals. In this scenario the attenuation might not be the most important parameter.

CERTIFIED COAXIAL CABLE



Coaxial cable with inner conductor made of 100% copper, high screening attenuation (Class A+) and low losses. Televes' coaxial cable is subject to strict quality controls. Screening attenuation in excess of 85dB in the UHF and 4G bands makes it specially useful against the potential risk of LTE/4G interference.

A requirement to give the installer the satisfaction and peace of mind to guard against LTE/4G signals, has made **televes certify all the coaxial cable that we supply.**

This is why, a coaxial cable with the **televes' brand is a certified cable**, and LTE READY cable.

SK2000pas - 4138



Inner conductor	Ø	mm	1.02 ± 0.016
Dielectric P.E.	Ø	mm	4.60 ± 0.05
Foil			Al + Polyester
Braid	dimensions	G×H×Ø*	24 × 7 × 0.10
	coverage	%	82
Outer sheath	Ø	mm	6.7 ± 0.1 (PVC & LSFH)
Minimum bending radius			33.5
Screening attenuation			Class A+
Attenuation Frequency (MHz)	5	dB/100m	4.8
	470		14.0
	862		18.7
	950		20.5
	2150		31.2
	3000		35.5

(*) G×H×Ø: strand groups x number of strands x strand's diameter.

NEW CAI RG-6 APPROVED CABLE



With a copper clad steel 1mm inner conductor and aluminium braid it is the perfect cable for single dwelling units.

A screening attenuation of 75dB (Class A) in the UHF and 4G bands it gives this cable an optimum protection against potential harmful interference.



MODEL - REFERENCE			CYT-1 2127
Inner conductor - braid composition			Cu CLAD STEEL
Inner conductor	Ø	mm	1.00 ± 0.02
Dielectric	Ø	mm	4.7 ± 0.1
Foil			Al + Polyester
Braid	dimensions	G×H×Ø*	16 × 8 × 0.12
	coverage	%	77
Outer sheath	Ø	mm	6.7 ± 0.2 (PVC)
Minimum bending radius			33
Screening attenuation			Class A
Attenuation Frequency (MHz)	50	dB/100m	5
	200		9.5
	800		20.5
	1000		23
	2050		35
	2300		37

only A cErtified cABLE

GuArAntEES tHE QuALITy of tHE inStAllATIOn

TELEVES' CABLE CERTIFICATION CENTER

At Televes we consider that the best way to guarantee the performance of a coaxial cable is through the quality control in all the manufacturing processes. In the LTE/4G scenario, only the certified cable will ensure the quality of the signal.

A cable with televes on it, is a certified cable.

Hence why, televes, in its cable certification center performs the following tests:

■ **copper quality:** tests of DC performance at high and low frequencies generate parameters that help us evaluate the purity of the copper.

■ **Quality of the gas injection (foam):** through the test of dielectric rigidity we can detect alterations in the isolation between the inner conductor and the foil.

■ **copper+Polyester foil:** the continuity tests highlight possible breaks in the foil that could deteriorate the conductivity to ground or the screening against interference.

■ **Braid interlacing:** the interlacing is one of the characteristics that can influence more the quality of the shielding. Its effectiveness can be measured by the screening attenuation (Fig.1).

■ **Quality of the outer sheath:** a complex tool detects variations in the walls of the outer sheath, which allows us to measure the homogeneity and symmetry of the outer sheath (Fig.2)

■ **Attenuation and length:** the attenuation tests measure the uniformity of the impedance, preserving the quality of the signals travelling in the coaxial cable.

In addition to the tests of intrinsic quality, in the coaxial cable certification center we guarantee the length of the cable supplied and the serigraphy and packaging.

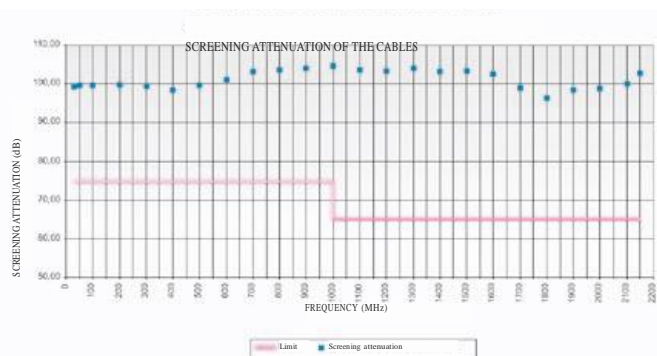


Fig.1 Graph of screening attenuation.

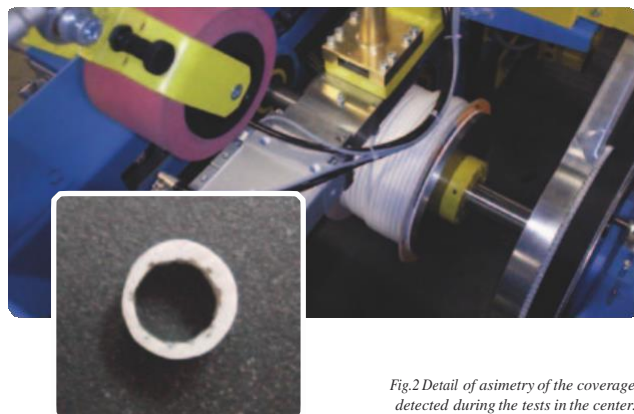


Fig.2 Detail of asymmetry of the coverage detected during the tests in the center.

All the information generated during the certification processes, will be stored through a traceability system that allows us to find out all the data of each and every drum produced.

SAFE AND SHIELDED CONNECTION

PRO EASY F CONNECTORS



Safe connection:

- ✓ Save time and cost in the installation.
- ✓ Ensure the reliability of the connection and avoid the need for future call backs.
- ✓ the peace of mind of a job well done.

Easy and quick to fit:

- ✓ one screw.
- ✓ connection always visible.
- ✓ no push on pieces.
- ✓ no detachable pieces.

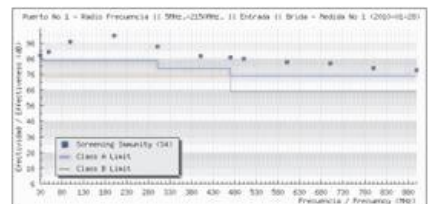
Electrically perfect:

- ✓ 100% robotised manufacturing is a reassurance of its quality.
- ✓ completely screened to avoid LTE/4G effects.

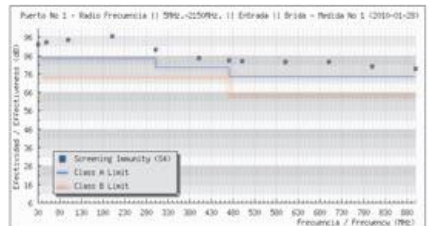
The Pro Easy F connectors ensure the maximum quality in the connection, giving exceptional screening to the TV signals in the installation as its screening efficiency exceeds the requirements of CLASS A.

No push on or detachable components, which simplifies its fitting, eases and assures its connection.

Screening of the male IEC connector ref.413201



Screening of the male IEC connector ref.413201



REF. DESCRIPTION

413201	"PRO EasyF" Connector "IEC" Ø 9,5mm Male elbow screened
413301	"PRO EasyF" Connector "IEC" Ø 9,5mm Female elbow screened
413401	"PRO EasyF" Connector "Quick F" Elbow screened



FLY LEADS



Despite having had the installation adapted to avoid the influence of LTE/4G, **the weakest point will be the leads connecting the outlet plate with the tV.**

The "LTE ready" leads are made with T200 Class A coaxial cable and screened Pro Easy-F connectors.

Both components guarantee the best screening possible.

The quality of these components is now key and would be a mistake to use leads of doubtful quality, many of these don't have screening or foil.

For the measurement of the quality of screening of these leads with IEC connectors we use the following standards EN 60966-2-5 and N 60966-2-4.

The specifications are reproduced in the table attached. **theses parameters are not achieved by any other leads currently available in the market.**

REF. DESCRIPTION

431001	"IEC" coaxial lead Ø 9,5mm Screened elbow Male-Female 1.5m
431002	"IEC" coaxial lead Ø 9,5mm Screened elbow Male-Female 2.5m

TYPE OF LEAD		IEC CONNECTOR	
Class A lead	From 30 to 1000MHz	dB	> 85
	From 1 to 3GHz		> 65
Class B lead	From 30 to 1000MHz		>75
	From 1 to 3GHz		> 55

► Distribution

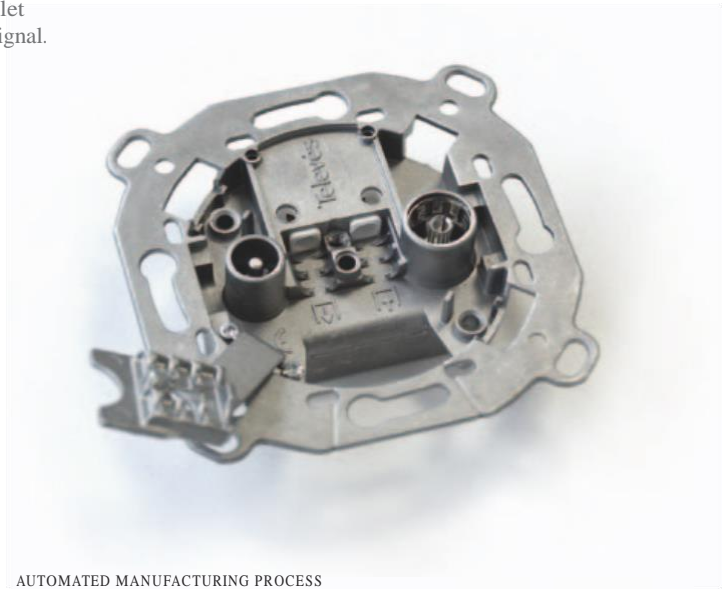
OUTLET PLATES

The special manufacturing process and design of our outlet plates guarantees the protection of the TV and satellite signal.

DOES NOT ALLOW THE DIGITAL QUALITY TO VANISH IN THE CONNECTIONS.

- ✓ Cable connection with easy F
- ✓ Automated production for highest reliability
- ✓ Lateral opening clamp for easy fitting

A manufacturer of outlet plates that offers solutions for every scenario



AUTOMATED MANUFACTURING PROCESS



PRODUCT	SPECIFICATIONS		
	Pass band (MHz)	Attenuation (dB)	
		TV/FM	IF SAT
Ref.522610 TV / SAT DC terminal outlet plate	47-790 / 950-2150	1/1	1,5
Ref.523110 TV - FM through outlet plate	47-790	11 (2 through) / 29 (2 through)	(2,5 through)

SPLITTERS AND TAPS

In the Easy F splitter and tap range special care has been taken in the screening of the circuit, also done with the connection system.

The zamak chassis allows perfect screening across the whole frequency range plus its connection by means of the Easy F system; simplifies the installation with no detriment to the screening efficiency..



▶ DTT Reception

Several studies and tests have been carried out in Europe with regards to the influence of pulsed 4G signals over the performance of demodulators built into DTT receivers and adaptors.

These studies concluded that the performance of DTT receivers, TVs and adaptors are subject to interference from LTE/4G, even with optimum screening of the installation.

This is the reason why by design the characteristics of the LTE/4G signals must be taken into account in order to avoid signal break-up or pixelation.



zAS HD RECEIVER

European manufacturing, with strict quality controls and state of the art electronic design make the zAs HD the ideal receiver to allow the viewing of TV despite changing broadcast scenarios like deployment of LTE/4G.



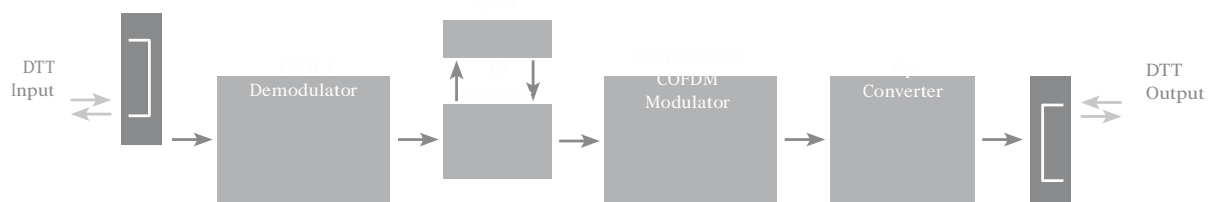
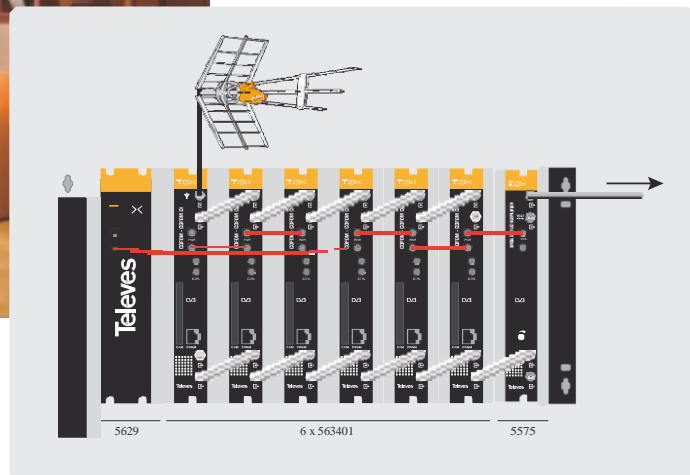
▶ DTT processing

The transmodulator/regenerator is an element that could be used in those instances where standard mitigation techniques (filtering) can't be used or don't achieve the desired results. This alternative allows the re-construction of the original signal, so that the original services are re-modulated at the headend. The regenerator even allows the installer to edit parameters of the multiplexed services. It is the ideal solution to re-establish the quality of the affected signal.

T.0x TRANSMODULATOR / REGENERATOR COFDM / COFDM

The transmodulator COFDM/COFDM CI (Ref.563401) adapts the transport stream to the requirements of the DVB-T transmission through the selective deletion of services from the received DTT MUX, to avoid the reception (and storage) by the DTT receivers and TVs.

By means of its CI interface and the CAM module, those encrypted DTT services could be decrypted and distributed as free to air.



Even more important with the deployment of the 4G telephony network and due to the pulsant nature of this interference signal only a spectrum analyzer capable of capturing up to 20MHz of bandwidth in less than 10 miliseconds will be able to detect it.

NEW SPECTRUM ANALYZER H60, WITH DIGITAL PROCESSING

Unprecedented speed and mathematical precision in all its measurements...



The spectrum analyzer recommend by Televés to analyze the TV signals in the communal system during 4G deployment.

The Digital Processing allows an uncomparable precision and speed in the analysis.

the choice is CLEAR



www.televesh60.com

Spectrum analyzer up to 3.3 GHz

- ✓ TILT function
- ✓ Network frequency attenuation.
- ✓ MPEG4 with common interface. HD video.
- ✓ HDMI output.
- ✓ Selective optical interface.
- ✓ DVB-T2 demodulation.
- ✓ 5.7" of high resolution.
- ✓ Digital processing.

Remote control of measurements via IP

Ideal for monitoring incoming signals and broadband networks.

Leave your H60 connected to a system and control to it remotely.

Once the job is done, export your results to any PC/laptop by means of the HSuite SW (included).



www.televesh60.com



Televes®



Product Guide

televes SA (HEAD office)

Rúa B. de Conxo, 17
15706 Santiago de Compostela (SPAIN)
Tel: (+34) 981 52 22 00
Fax: (+34) 981 52 22 62
E-mail: televes@televes.com

televes (u.K.) Ltd.

11 HILL STREET INDUSTRIAL ESTATE
NP44 7 PG - CWMBRAN, GWENT (UK) (CRF)
Tel: (+44) 01 633 87 58 21
Fax: (+44) 01 633 86 63 11
E-mail: televes.uk@televes.com

www.televes.com

iA (intelligent Auto) H.265 Network Camera

Panasonic WV-S1111 captures the highest quality images automatically even in very challenging and fast-changing surveillance environments. Intelligent Auto (iA) monitors scene dynamics and motion to adjust key camera settings automatically in real-time reducing distortion such as motion blur on moving objects. New industry-leading 144dB dynamic range delivers balanced scene exposure in dynamic and extreme-backlit lighting environments. In addition, color night vision provides outstanding low-light performance with accurate color rendition and saturation from i-Pro's 1/3" sensor, rivaling the performance of costlier 1/2" sensor cameras in the market. Adopting H.265 Smart Coding technology, intelligently reduces bandwidth efficiency of up to an average 75 percent over H.264 for longer recording and less storage. Cameras out-of-the-box, support full data encryption streaming and is compliant to FIPS 140-2 Level 1 standards to keep your video secured.

Extreme image quality for evidence capturing under challenging conditions.

- Auto Shutter speed control for fast moving vehicles
- Sharp and clear image of a walking person day & night
- Outstanding low light performance in true color with low noise for night time applications
- Super Dynamic 144dB for backlit situation and shadows on the streets at night

Extreme H.265 compression with new Smart Coding

- Longer recording, less storage compared to any H.264 based compression techniques
- New self-learning ROI* encoding (Auto VIQS) dynamically detect motion areas to keep vehicles and human in good picture quality while lowering your bandwidth
- New "Smart Facial Coding" adds more bandwidth reduction for ID camera applications mainly capturing faces

* Region of Interest

Extreme Data Security

- Full encryption SD card edge recording to keep your data safe
- FIPS 140-2 Level 1 compliant
- Full end-to-end system encryption with supported VMS and devices to protect from IP snooping/spoofing and detect data alteration

Key Features

- HD 720p 60fps
- iA (intelligent Auto)
- Extreme Super Dynamic 144dB
- Color night vision (0.0005 to 0.007 lx)
- H.265 Smart Coding
- FIPS 140-2 Level 1 compliant

Applications

- Public safety (City / Road / Highway / Port)
- Transportation (Airport / Train / Subway)
- Retail / Bank / Education / Hospital / Building



Lens : Optional

Specifications

Camera	Image Sensor	Approx. 1/2.8 type MOS image sensor
	Minimum Illumination	Color : 0.007 lx, BW : 0.003 lx (F1.4, Maximum shutter : Max. 1/30s, AGC : 11) Color : 0.0005 lx, BW : 0.0002 lx (F1.4, Maximum shutter : Max. 16/30s, AGC : 11) *1
	White Balance	AWC (2,000 - 10,000 K), ATW1 (2,700 - 6,000 K), ATW2 (2,000 - 6,000 K)
	Shutter Speed	Off(1/30) to 1/10000 *1/30 Fix to 2/100 Fix is available during 30 fps mode only. *2/120 Fix is available during 60 fps mode only.
	Intelligent Auto	On / Off
	Super Dynamic *2	On / Off, the level can be set in the range of 0 to 31.
	Dynamic Range	144 dB (Super Dynamic : On)
	Adaptive Black Stretch	The level can be set in the range of 0 to 255.
	Black light compensation / High light compensation	BLC (Black light compensation) / HLC (High light compensation) / Off (Only when Super dynamic and Intelligent Auto : Off)
	Fog compensation	On / Off (Only when Intelligent Auto : Off)
	Maximum gain (AGC)	The level can be set in the range of 0 to 11.
	Day/Night (ICR)	Off / On / Auto1 (Normal) / Auto2 (IR Light) / Auto3 (SCC)
	Digital Noise Reduction	The level can be set in the range of 0 to 255.
	Video Motion Detection	On / Off, 4 areas available
	Image Stabilizer	On / Off (available only in the 30 fps mode)
	Privacy Zone	On / Off (up to 8 zones available)
	Image rotation *3	0 ° / 90 ° / 180 ° / 270 °
	Camera Title (OSD)	On / Off Up to 20 characters (alphanumeric characters, marks)
	Focus Adjustment	Auto back focus / Manual
	Browser GUI	Camera Control
Audio		Mic (Line) Input : On / Off Volume adjustment : Low / Middle / High Audio Output : On / Off Volume adjustment : Low / Middle / High
GUI / Setup Menu Language		English, Italian, French, German, Spanish, Portuguese, Russian, Chinese, Japanese
Network	Network IF	10Base-T / 100Base-TX, RJ45 connector
	Image Resolution	*1.3 mega pixel [16 : 9] (30/60 fps) 1,280 x 720 / 640 x 360 / 320 x 180 *1.3 mega pixel [4 : 3] (30 fps) 1,280 x 960 / 800 x 600 / 640 x 480 / 400 x 300 / 320 x 240
	H.265 / H.264 *4 Transmission Mode / Type	Constant bit rate / Variable bit rate / Frame rate / Best effort / Unicast / Multicast
	JPEG Image Quality	10 steps
	Smart Coding	Smart Facial Coding : On (Smart Facial Coding*) / On (Auto VIQS) / Off *Smart Facial Coding is only available with Stream1. GOP (Group of pictures) : On (Advanced)* / On (Low) / On (Mid) / Off *On(Advanced) is only available with H.265.
	Audio Compression	G.726 (ADPCM) : 32 kbps / 16 kbps, G.711 : 64 kbps, AAC-LC *5 : 64 kbps / 96 kbps / 128 kbps
	Audio transmission mode	Off / Mic (Line) input / Audio output / Interactive (Half duplex) / Interactive (Full duplex)

Network	Supported Protocol	IPv6 : TCP/IP, UDP/IP, HTTP, HTTPS, RTP, FTP, SMTP, DNS, NTP, SNMP, DHCPv6, MLD, ICMP, ARP, DiffServ IPv4 : TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTCP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP, UPnP, IGMP, ICMP, ARP, DiffServ
	No. of Simultaneous Users	Up to 14 users (Depends on network conditions)
	SDXC/SDHC/SD Memory Card (Option)	H.265 / H.264 recording : Manual REC / Alarm REC (Pre/Post) / Schedule REC / Backup upon network failure JPEG recording : Manual REC / Alarm REC (Pre/Post) / Backup upon network failure Compatible SD (SDHC/SDXC) card : Panasonic 2 GB, 4 GB*, 8 GB*, 16 GB*, 32 GB*, 64 GB**, 128 GB** model *SDHC card, **SDXC card (except miniSD card and microSD card)
	Mobile Terminal Compatibility	iPad, iPhone, Android™ mobile terminals
Alarm	Alarm Source	3 terminals input, VMD, Command alarm, Audio detection alarm
	Alarm Actions	SDXC/SDHC/SD memory recording, E-mail notification, HTTP alarm notification Indication on browser, FTP image transfer, Panasonic protocol output
Input/Output	Monitor Output (for adjustment)	VBS : 1.0 V [p-p] / 75 Ω, composite, Pin jack An NTSC or PAL signal can be outputted from camera
	Microphone/Line Input	ø3.5 mm stereo mini jack (Applicable microphone : Plug-in power type) Supply voltage : 2.5 V ±0.5 V
	Audio Output	ø3.5 mm stereo mini jack (monaural output) Output impedance : Approx. 600 Ω (unbalanced)
General	External I/O Terminals	ALARM IN 1(DAY/NIGHT IN, Auto time adjustment) (x1), ALARM IN 2(ALARM OUT) (x1), ALARM IN 3(AUX OUT) (x1)
	Power Source and Power Consumption	DC power supply : DC12 V / 460 mA / Approx. 5.6 W PoE (IEEE802.3af compliant) Device : DC48 V / 120 mA / Approx. 5.8 W (Class 2 device)
	Ambient Operating Temperature	-10 °C to +50 °C (14 °F to 122 °F)
	Ambient Operating Humidity	10 to 90 % (no condensation)
	Dimensions	75 mm (W) x 57 mm (H) x 146 mm (D) [2-15/16 inches (W) x 2-1/4 inches (H) x 5-3/4 inches (D)] (excluding lens / power cord plug)
	Mass (approx.) / Finish	350 g [0.77 lbs.] Main body : PC / ABS resin (Sail white)

*1 Converted value

*2 Super Dynamic function is automatically set off on 60 fps mode.

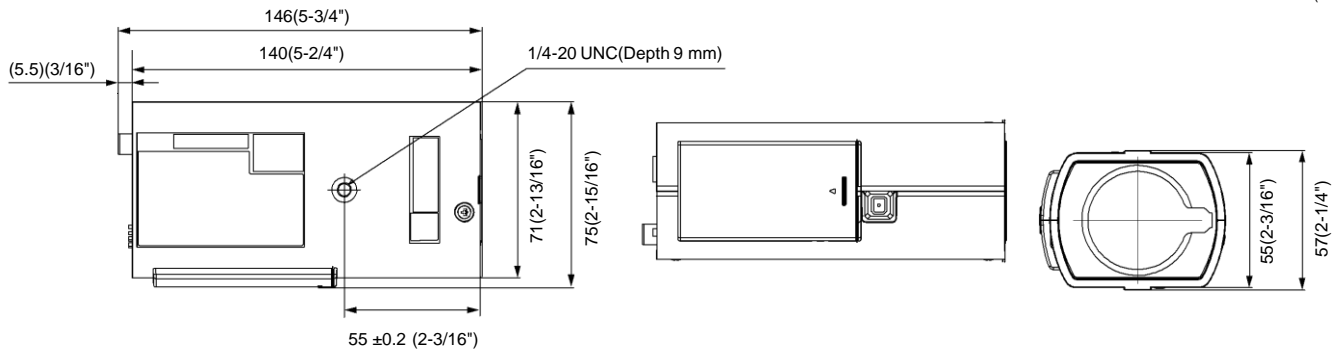
*3 When "1.3 mega pixel [4 : 3] (30fps mode)" is selected for "Image capture mode", "90 °" and "270 °" cannot be selected.

*4 Transmission for 4 streams can be individually set.

*5 Only use AAC-LC (Advanced Audio Coding - Low Complexity) when recording audio on an SD memory card.

Appearance

Unit : mm (inches)



Trademarks and registered trademarks

- iPad and iPhone are registered trademarks of Apple Inc.
- Android is a trademark of Google Inc.
- ONVIF and the ONVIF logo are trademarks of ONVIF Inc.
- All other trademarks identified herein are the property of their respective owners.

• Masses and dimensions are approximate. • Specifications are subject to change without notice.

Important

- Safety Precaution : Carefully read the Important Information, Installation Guide and operating instructions before using this product.
- Panasonic cannot be responsible for the performance of the network and/or other manufacturers' products used on the network.

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(2A-171BA)

Panasonic

BUSINESS

Super Dynamic Full HD Dome Network Camera

WV-SFN130

Super Dynamic HD Dome Network Camera

WV-SFN110



Key Features

- 1080p Full HD images up to 30 fps (WV-SFN130)
- 720p HD images up to 30 fps (WV-SFN110)
- Multiple H.264 (High profile) streams and JPEG streams ensure simultaneous real time monitoring and high resolution recording.
- **Super Dynamic** and ABS (Adaptive Black Stretch) technologies deliver 122 dB wider dynamic range compared to conventional cameras.
- **Face Super Dynamic Range** technology ensures clear face image.
- High sensitivity with Day/Night (Electrical) function :
0.1 lx (Color), 0.08 lx (B/W) at F2.3 (WV-SFN130)
0.04 lx (Color), 0.03 lx (B/W) at F2.3 (WV-SFN110)
- **VIQS** (Variable Image Quality on Specified area) technology allows the designated **eight areas** to retain higher image quality while the excluded area will have a decreased image quality, which enables to use lower image file size and bit rate.
- **Smart coding Technology :**
Group of Pictures (GOP) control function removes unnecessary information from the frame for realizing efficient encoding.
Auto VIQS (Variable Image Quality on Specified area) function recognizes the no movement area in a video automatically and lowering the resolution of it to reduce the data size.
With the latest bit rate reducing technology, **GOP control**, **Auto VIQS**, **3D-MNR** (Multi process Noise Reduction) and **FDI** (Frequency Divided Filter), the network bandwidth and the disk space of recorder can be saved.
- Progressive scan ensures clear images with less motion blur and no tearing even when the subject is moving.
- Light control modes :
ELC (maximum exposure time) :
The lightning control will be automatically performed by adjusting shutter speed in the range of ELC.
- 2x, 4x digital zoom controlled by browser
- VMD (Video Motion Detection) with 4 programmable detection areas, 15 steps sensitivity level and 10 steps detection size
- Privacy Zone can mask up to 8 private areas, such as house windows and entrances/exits.
- Camera title display : Up to 20 alphanumeric characters on the browser
- Alarm sources including VMD and Panasonic alarm command can trigger actions such as FTP image transfer, E-mail notification, Indication on browser, and Panasonic alarm protocol output.
- JPEG Image compression ratio can be changed by alarm so that higher quality image can be provided.
- Prioritized stream control : One of the video streams can be prioritized when multiple recorders or client PCs are accessing the camera so that the recorder or the client PC can maintain the frame rate.
- SDXC/SDHC/SD Memory card slot for manual recording , alarm recording and backup upon network failure
- Face detection function detects the position of human face and the information is sent by XML or video stream. (Optional)
- Can be added new intelligent extension software (Optional) in addition to built-in VMD (Video Motion Detection), alarm function.
- **Fog compensation function** equipped as standard.
- **HLC (High Light Compensation)** technology reduces strong light sources such as vehicle headlights to prevent camera being blinded.
- H.264 max. bit rate/client and Total bit rate control allows flexible network traffic management.
Frame rate priority mode controls bit rate and compression ratio to provide the specified frame rate.
- Internet mode : H.264 images can be transmitted over HTTP protocol.
- Multi-language : English / Italian / French / German / Spanish / Portuguese / Russian / Chinese / Japanese
- IPv4/IPv6 protocol supported
- Supports SSL, DDNS (viewnetcam, RFC2136)
- ONVIF compliant model
- Low profile design for discrete installation
- Wide coverage
WV-SFN130 [16 : 9 mode] Horizontal : 108 ° Vertical : 60 °
WV-SFN110 [16 : 9 mode] Horizontal : 100 ° Vertical : 55 °

Optional Accessory

Smoke Dome Cover
WV-CW6SA



Specifications

Camera	Image Sensor	Approx. 1/3 type MOS image sensor	
	Scanning Mode	Progressive	
	Scanning Area	5.28 mm (H) x 2.97 mm (V) (7/32 inches (H) x 1/8 inches (V))	
		WV-SFN130	4.86 mm (H) x 3.65 mm (V) (3/16 inches (H) x 5/32 inches (V))
	Minimum Illumination	WV-SFN130	Color: 0.1 lx (F2.3, Maximum shutter : Off (1/30s), AGC : High) 0.007 lx (F2.3, Maximum shutter : Max. 16/30s, AGC : High) *1 BW: 0.08 lx (F2.3, Maximum shutter : Off (1/30s), AGC : High) 0.005 lx (F2.3, Maximum shutter : Max. 16/30s, AGC : High) *1
		WV-SFN110	Color: 0.04 lx (F2.3, Maximum shutter : Off (1/30s), AGC : High) 0.003 lx (F2.3, Maximum shutter : Max. 16/30s, AGC : High) *1 BW: 0.03 lx (F2.3, Maximum shutter : Off (1/30s), AGC : High) 0.002 lx (F2.3, Maximum shutter : Max. 16/30s, AGC : High) *1
	White Balance		AWC (2,000 - 10,000 K), ATW1 (2,700 - 6,000 K), ATW2 (2,000 - 6,000 K)
	Light Control Mode		ELC / Indoor scene 50 Hz / Indoor scene 60 Hz
	Super Dynamic		On (High) / On (Normal) / Off
	Dynamic range		122 dB typ. (Super Dynamic : On)
	Face Super Dynamic		On / Off (only when Super Dynamic : On)
	Adaptive Black Stretch		On / Off (only when Super Dynamic : Off)
	Back light compensation (BLC)		On / Off (only when Super Dynamic : Off)
	Fog compensation		On / Off (only when Super Dynamic / Adaptive black stretch: Off)
	High light compensation (HLC)		On / Off (only when Super Dynamic / Back light compensation (BLC): Off)
	AGC		On (High) / On (Mid) / On (Low) / Off
	Maximum shutter		max. 1/10,000 s, max. 1/4,000 s, max. 1/2,000 s, max. 1/1,000 s, max. 1/500 s, max. 1/250 s, max. 1/120 s, max. 1/100 s, max. 2/120 s, max. 2/100 s, max. 3/120 s, max. 3/100 s, max. 1/30 s, max. 2/30 s, max. 4/30 s, max. 6/30 s, max. 10/30 s, max. 16/30 s
	Day/Night (Electrical)		Off / Auto
	Digital Noise Reduction		High / Low
	Video Motion Detection		On / Off, 4 areas available
	Privacy Zone		On / Off (up to 8 zones available)
	VIQS		On / Off (up to 8 zones available)
	Camera Title (OSD)		Up to 20 characters (alphanumeric characters, marks), On / Off
	Focal Length		2.8 mm (1/8 inches)
	Digital (electronic) zoom		Choose from 3 levels of x1, x2, x4
	Zoom ratio		x1 WV-SFN130 : 3x Extra zoom (2.0 mega pixel [16 : 9] mode) WV-SFN110 : 2x Extra zoom
	Angular Field of View	WV-SFN130	[16 : 9 mode] Horizontal : 108 ° Vertical : 60 ° [4 : 3 mode] Horizontal : 89 ° Vertical : 66 °
		WV-SFN110	[16 : 9 mode] Horizontal : 100 ° Vertical : 55 ° [4 : 3 mode] Horizontal : 100 ° Vertical : 73 °
	Maximum aperture ratio		1 : 2.3
	Focus Distance		0.5 m - ∞
	Adjusting Angle		Installing on a ceiling Horizontal : -20 ° to +20 ° Vertical : -20 ° to 0 ° (right under) to +90 ° (right beside) Installing on a wall Horizontal : +90 ° to -90 ° Vertical : -20 ° to 0 ° (right beside) to +90 ° (right under)
	Browser GUI	Camera Control	Brightness
		Display Mode	Spot, Quad : Image from 16 cameras can be displayed in 4 different Quad screens or 16 split screen (JPEG only). 20 characters camera title available.
	Camera Title	Up to 20 alphanumeric characters	
	Clock Display	Time : 12H/24H/Off, Date : 5 formats on the browser, Summer time (Manual)	
	One Shot Capture	A still picture will be displayed on a newly opened window.	
	SD Memory	Still or motion Images recorded in the SDXC/SDHC/SD memory card can be downloaded.	
	GUI/Setup Menu Language	English, Italian, French, German, Spanish, Portuguese, Chinese, Russian, Japanese	
	System Log	Up to 100 (Internal), Up to 4,000 (SDXC/SDHC/SD memory when the recording format is set to JPEG.) error logs	
	Supported OS *2 *3	Microsoft® Windows® 10 Microsoft® Windows® 8.1 Microsoft® Windows® 8 Microsoft® Windows® 7	
	Supported Browser	Windows® Internet Explorer® 11 (32 bit) Windows® Internet Explorer® 10 (32 bit) Windows® Internet Explorer® 9 (32 bit) Windows® Internet Explorer® 8 (32 bit) Safari®, Google Chrome®, Mozilla Firefox® * with limitations in the part of setting screen	
Network	Network IF	10Base-T / 100Base-TX, RJ45 connector (female)	
	Image Resolution H.264/JPEG	WV-SFN130 -2 mega pixel [16 : 9] 1,920 x 1,080 / 1,280 x 720 / 640 x 360 / 320 x 180 / 160 x 90 *1,920 x 1,080 mode is only available for H.264(1), H.264(2). -2 mega pixel [4 : 3] 1,600 x 1,200 / 1,280 x 960 / 800 x 600 / VGA / 400 x 300 / QVGA / 160 x 120 *1,600 x 1,200 mode is only available for H.264(1), H.264(2). -3 mega pixel [4 : 3] 2,048 x 1,536 *4 / 1,280 x 960 / 800 x 600 / VGA / 400 x 300 / QVGA / 160 x 120 *2,048 x 1,536 mode is only available for H.264(1), H.264(2). WV-SFN110 -1.3 mega pixel [16 : 9] 1,280 x 720 / 640 x 360 / 320 x 180 / 160 x 90 -1.3 mega pixel [4 : 3] 1,280 x 960 / 800 x 600 / VGA / 400 x 300 / QVGA / 160 x 120	

Network	Image compression method	H.264 *5	Transmission Mode	Constant bit rate / Variable bit rate / Frame rate / Best effort / Advanced VBR
			Frame Rate	1 / 3 / 5 / 7.5 / 10 / 12 / 15 / 20 / 30 fps
			Bit Rate per Client	64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 1,536 / 2,048 / 3,072 / 4,096 / 6,144 / 8,192 / 10,240 / 12,288 / 14,336 / 16,384 / 20,480 / 24,576 / 30,720 / 40,960 kbps * The available range of the H.264 bit rate varies depending on the setting selected for "image capture size".
			Image Quality	<When Constant bit rate or Best effort is selected> Low / Normal / Fine <When Variable bit rate is selected> 0 Super ne /1 Fine /2 / 3 / 4 / 5 Normal / 6 / 7 / 8 / 9 Low
			Smart Coding mode	On (Low / Mid / High) / Off (Only when "Variable bit rate" is selected.)
			Transmission Type	Unicast / Multicast
		JPEG	Image Quality	10 steps
			Refresh Interval	0.1 fps - 30 fps
			Transmission Type	Pull / Push
		Cropping function *6		Off / JPEG (1) / JPEG (2) / JPEG (3) / H.264 (1) / H.264 (2) / H.264 (3) / H.264 (4) / H.264 (all) Alarm action On / Off
		Audio compression method		G.726 (ADPCM) 32 kbps / 16 kbps, G.711 64 kbps, AAC-LC *7 64 kbps, AAC-LC (HIGH QUALITY) *8 64 kbps / 96 kbps / 128 kbps
		Bandwidth control		64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 2,048 / 4,096 / 8,192 kbps
		Supported Protocol		IPv6 : TCP/IP, UDP/IP, HTTP, HTTPS, RTP, FTP, SMTP, DNS, NTP, SNMP, DHCPv6, MLD, ICMP, ARP, DiffServ IPv4 : TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP, UPnP, IGMP, ICMP, ARP, DiffServ
		FTP Client		Alarm image transmission, FTP periodic transmission (When the FTP transmission is failed, backup on an optional SDXC/SDHC/SD memory card is available.)
		Maximum concurrent access number		Up to 14 users (Depends on network conditions)
		SDXC/SDHC/SD Memory Card(Optional)		Manufactured by Panasonic (SD speed class 4 or higher) SDXC memory card : 64 GB, 128 GB SDHC memory card : 4 GB, 8 GB, 16 GB, 32 GB SD memory card : 2 GB (except miniSD card and microSD card)
		Cellular Phone Compatibility		JPEG image
		Mobile Terminal Compatibility		iPad, iPhone, iPod touch(iOS 4.2.1 or later), Android™ mobile terminals
	Alarm	Alarm Source		VMD, Command alarm, Audio detection alarm
		Alarm Actions		SDXC/SDHC/SD memory recording, E-mail notification, Indication on browser, FTP image transfer, Panasonic protocol output
		Alarm Log		With SDXC/SDHC/SD memory card : 5,000 logs
	Schedule		VMD	
General	Safety/EMC Standard		<Safety> UL (UL60950-1), C-UL (CAN/CSA C22.2 No.60950-1), CE, IEC60950-1 <EMC> FCC Part15 ClassA, ICES003 ClassA, EN55022 ClassB, EN55024	
	Power Source and Power Consumption		PoE (IEEE802.3af compliant) 48 V DC : 90 mA / Approx. 4.3 W (Class 2 device)	
	Ambient Operating Temperature		0 °C to +40 °C (32 °F to 104 °F)	
	Ambient Operating Humidity		10 % to 90 % (no condensation)	
	Built-in microphone		Nondirectional electret condenser microphone	
	Dimensions		ø104 mm x 47 mm (H) (ø4-3/32 inches x 1-27/32 inches (H)) Dome radius 54 mm (2-1/8 inches)	
	Mass (approx.)		Approx. 260 g (0.57 lbs)	
	Finish		Main body : ABS resin, sail white Dome cover : Acrylic resin, Clear	

*1 Converted value

*2 Refer to "Notes on Windows® 7 / Windows® 8 / Windows® 8.1 / Windows® 10" on the provided CD-ROM for further information about system requirements for a PC and precautions when using Microsoft® Windows® 10 or Microsoft® Windows® 8.1 or Microsoft® Windows® 8 or Microsoft® Windows® 7.

*3 When using IPv6 for communication, use Microsoft® Windows® 10 or Microsoft® Windows® 8.1 or Microsoft® Windows® 8 or Microsoft® Windows® 7.

*4 Used by super resolution techniques

*5 Transmission for 4 streams can be individually set.

*6 Cropping setting is not possible for stream set to maximum resolution.

*7 Only use AAC-LC (Advanced Audio Coding - Low Complexity) when recording audio on an SD memory card.

*8 When "AAC-LC (HIGH QUALITY)" is selected, there are limitations about the following function.

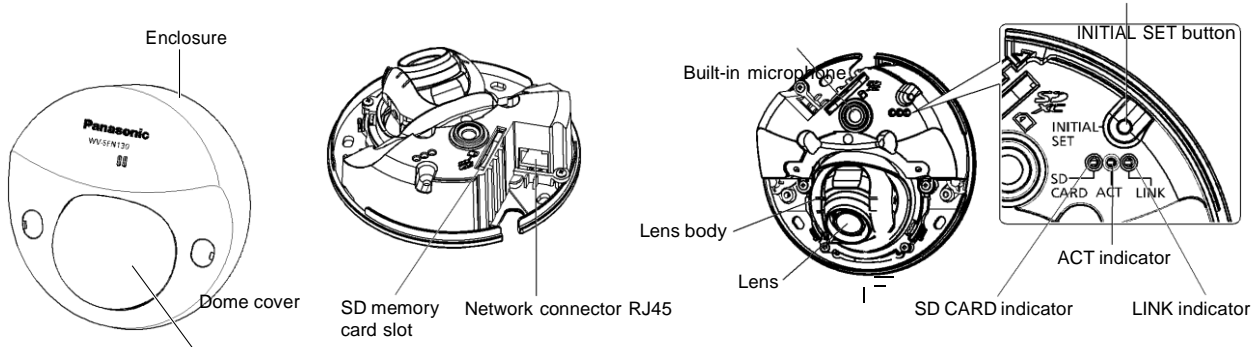
"SD memory card" is not available.

"Audio detection" is not available.

HTTPS is not available.

The maximum concurrent access number is limited to 5

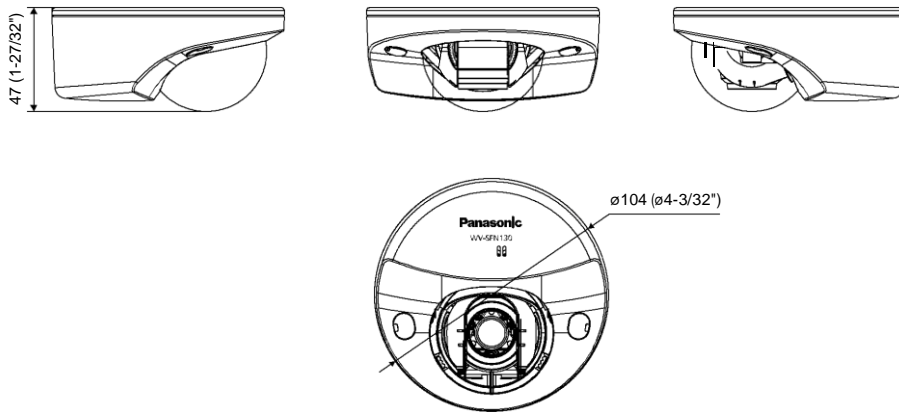
Part Names and Functions



* These illustrations are WV-SFN130.

Appearance

Unit : mm (inches)



Trademarks and registered trademarks

- Microsoft, and Windows are registered trademarks of Microsoft Corporation in the U.S. and other countries.
- iPad, iPhone and iPod touch are registered trademarks of Apple Inc.
- Android is a trademark of Google Inc.
- "i-PRO SmartHD", and "Super Dynamic" logos are trademarks or registered trademarks of Panasonic Corporation.
- ONVIF and the ONVIF logo are trademarks of ONVIF Inc.
- All other trademarks identified herein are the property of their respective owners.

Important

- Safety Precaution: Carefully read the Important Information, Installation Guide and operating instructions before using this product.
- Panasonic cannot be responsible for the performance of the network and/or other manufacturers' products used on the network.

- Masses and dimensions are approximate.
- Specifications are subject to change without notice.

DISTRIBUTED BY :

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<http://www.facebook.com/PanasonicNetworkCamera>

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(2A-169DA)

TACERA NURSE CALL SYSTEM

ADVANCED TECHNOLOGIES DELIVERING...

INTEGRATED HEALTH CARE COMMUNICATION SOLUTIONS



Connecting people, not places

TACERA IN YOUR FACILITY

TACERA is an advanced Nurse Call solution for health care facilities that:

- Links patients to all health care personnel › in real-time.
- Empowers nurses with technology › without overwhelming them.
- Enhances the care delivery process › improving patient satisfaction.
- Connects all health care personnel › enhancing procedures and workflows.
- Provides comprehensive reporting › for risk and cost reduction, as well as effective and efficient resource management.

The plug-and-play functionality of TACERA will reduce the cost of installation and commissioning, as well as making ongoing maintenance more cost effective – reducing the overall “whole-of-life” cost of the system.

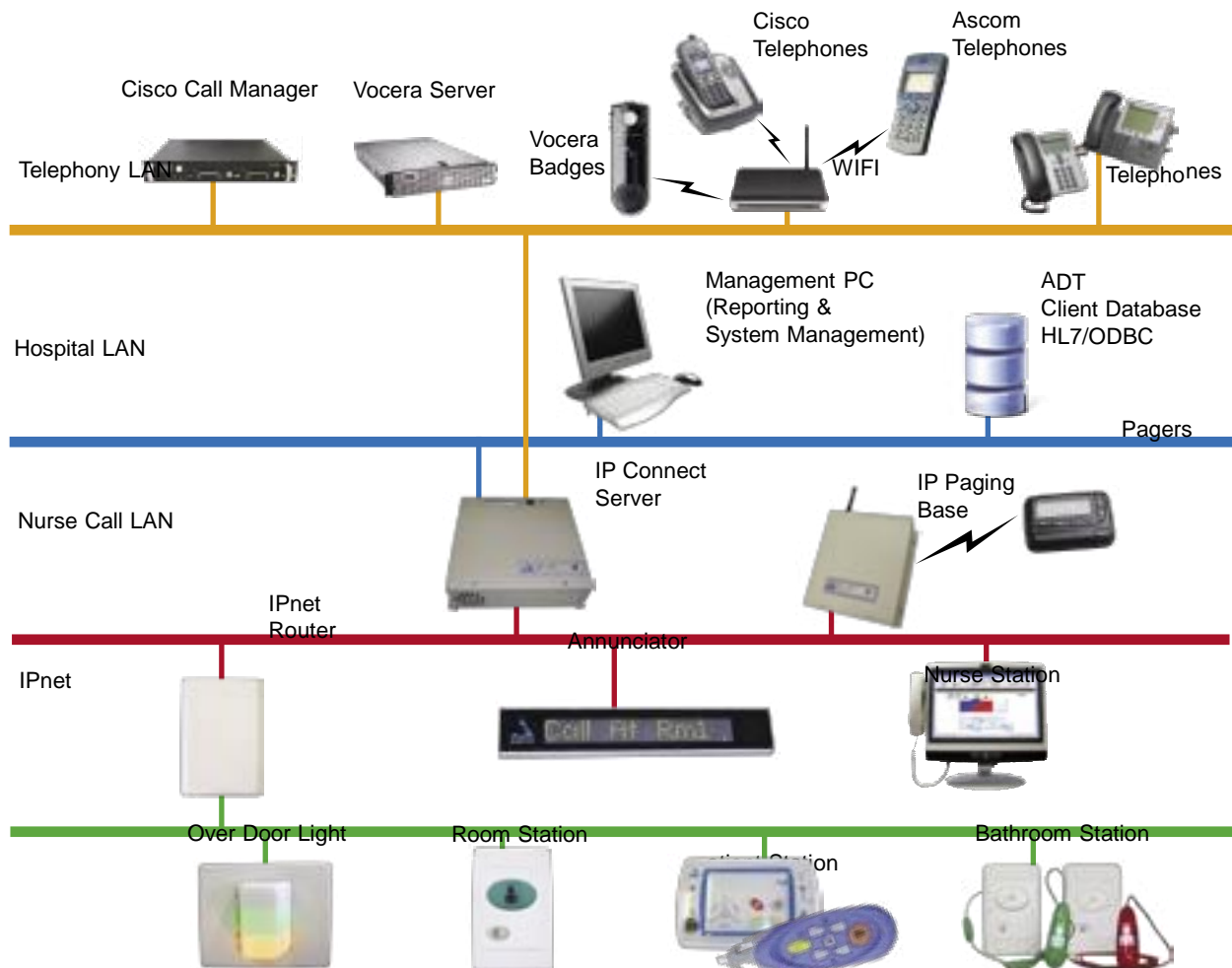


IP Connect is the heart of TACERA that integrates a wide range of hardware, software and database systems in one single server.

YOUR TOTAL IP-BASED SOLUTION

ANOTHER WORLD 1ST FOR AUSTCO

As a Nurse Call system, TACERA has been designed to connect to the most popular communication systems on the market, using industry standard protocols to protect your investment and deliver hassle-free, seamless convergence at an affordable price.



SIMPLE EFFICIENCY

CONNECTING PEOPLE, NOT PLACES

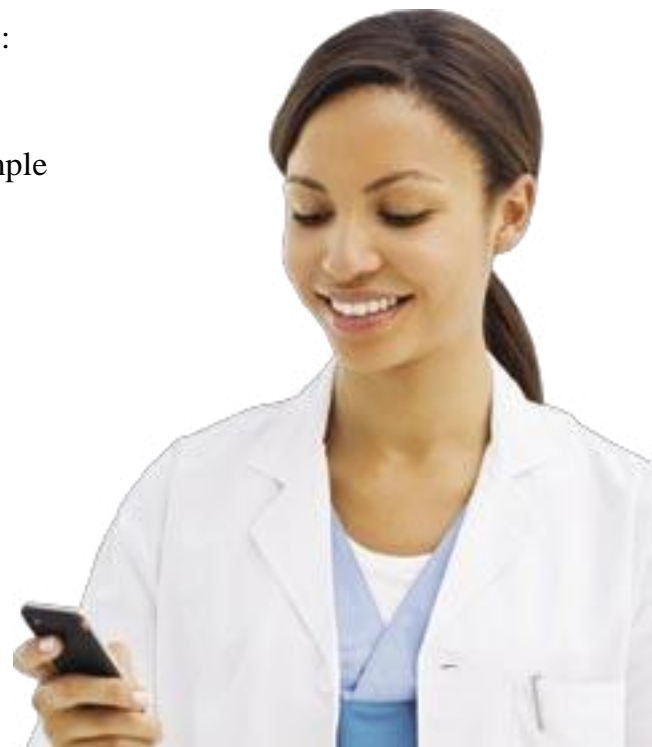
TACERA with IP Connect was developed by Austco to empower nurses with technology, information and communication. This enhances the care delivery process with measurable improvements to your patients' quality and experience of care.

No more unanswered patient calls, no more running around looking for caregivers. With TACERA, caregivers are provided with actionable information, and can respond instantly to patients' needs, reducing risk and increasing both patient and caregiver satisfaction.

EMERGENCY CALL SOLUTION

TACERA provides your facility with the following:

- A high-resolution back-lit monitor:
The bright, high contrast display is easy to read and simple to configure.
- Color-coded priority call types:
Highest priority calls are easily identified.
- Automated messaging:
Simple operation ensures timely responses.
- Touch-to-select features:
Allows users to easily navigate through the software.



TACERA USER INTERFACE



The TACERA Nurse Call System comes with a comprehensive software application that provides a clear display of calls, touch-to-select features like rostering, swing ward, and call assignment for staff pagers, VoIP, fixed or wireless telephones and Vocera badges. Full ward statistics and reporting add an extra level of functionality for administrators and nurse managers.

Real-time links

Easy to use

*Suite of interface
modules*

*Comprehensive
reporting*

The Call Activity interface displays actionable information and links patients with the correct health care personnel, in real-time, using wireless communication devices.

The system provides audio / visual annunciation and display of alarms / calls received from any room or bed callpoint on a TACERA Nurse Call System.

The Map interface graphically displays the highest level of call as well as nurse presence, allowing users to easily locate calls at a glance.

The system allows instant messaging to on-site or off-site groups, mobile devices like pagers, telephones and PDAs, as well as multiple vendor technologies.

All information from each call is logged to a database, allowing managers to conveniently assess call activity for more effective resource management.

TOUCH SCREEN NURSE STATION

Medical-grade touch screen

Advanced automated messaging service

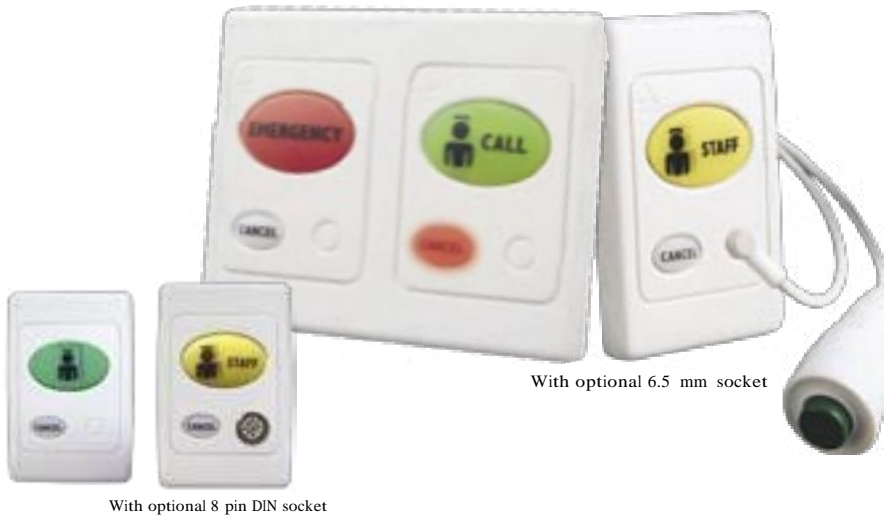
Full ward statistics and reporting

Multiple Nurse Stations can connect anywhere on the LAN



The TACERA Nurse Station is a sleek touch screen, with optional VoIP speech handset, that provides a clear display of calls, touch-to-select features like rostering, swing ward, and call assignment for staff pagers, VoIP, fixed or wireless phones and Vocera badges. Full ward statistics and reporting add an extra level of functionality for administrators and nurse managers.

STERIBUTTON CALLPOINTS



*IPnet compatible and net-
or web- configured*

*Flush soft touch silicone
buttons with
anti-bacterial additive*

Easy to activate

Flush wall-mounted callpoints that initiate calls on the TACERA Nurse Call System. Back-lit buttons for night viewing by staff, reassurance LED and tone sounder for audibly or visually impaired patients, and call mute mode for cleaners are standard. Callpoints are also available with a 6.5 mm pendant socket or an 8 pin DIN socket for a patient entertainment handset.

PULL CORD CALLPOINTS



*IPnet compatible and net-
or web-configured*

*Clear colors and concise
labels*

Low activation force

Water resistant flush wall- or ceiling-mounted callpoints that initiate calls on the TACERA Nurse Call System. The cord has a wipe-clean surface and has its own Snapback™ strain relief to ensure reliable operation without any possibility of damage. Standard features include a reassurance LED, tone sounder for audibly or visually impaired patients and call mute mode for cleaners.

PATIENT STATION WITH INTERCOM AND STERIBUTTONS

COMING SOON

*IPnet compatible and net-
or web-configured*

*Intercom is true SIP VoIP
technology*

Site configurable buttons



A flush wall-mounted bedside patient station that provides up to 3 callpoints, Cancel and optional inputs for patient calls from a call pendant or entertainment handset. The intercom has crystal clear, full duplex voice communication. VoIP offers non-blocking audio to any fixed or mobile telephony application used by the facility, ensuring immediate contact between patients and caregivers.

STAFF DUTY STATION

COMING SOON

*Clear concise information
of call location and
priority*

*Audible indication of call
urgency*

*Indicates call priorities at
a glance*



This IPnet compatible and net- or web-configured system display and callpoint station allows staff the ability to mark Presence, and view calls made by patients and staff for assistance. It is a surface-mountable station on a single-gang wallbox. Tones and colored LEDs match the corridor and room lamps.

ERGO^{PLUS} PATIENT HANDSETS



Large back-lit buttons
Reassurance indication
All-in-one design that is easy to grip

Non-slip housing with linen clip to ensure it is always at hand for your patient

Improved infection control

Ergonomically designed, easy-to-grip handsets for patient control of TV / music (optional), lights (optional) and nurse call functions on a TACERA Nurse Call System. The solid blue, water resistant case is non-slip and dip sterilizable, and the soft touch buttons are recessed to avoid accidental activation. The entire handset is manufactured from silicone rubber with an anti-bacterial additive for improved infection control.

4 BUTTON CALLPOINT



IPnet compatible and net- or web-configured

Custom function buttons

Multiple ganged callpoints provide up to 16 buttons

A flush wall-mounted callpoint that is used for both Nurse Call and Workflow function. The 4 touch buttons can be individually programmed, locally or remotely, for any Nurse Call, Status or Workflow function. Each button has a user-inscribable tag that indicates its function and is placed behind a clear lexan cover for improved infection control.

OVER DOOR LIGHT

*IPnet compatible and net-
or web-configured*

High brightness LEDs

*Available with 3 or 6
colored segments*

*Fully programmable to
meet the needs of your
facility*



The Over Door Light is used to indicate active alarms / calls using 3 or 6 colored segments. The colors and flash rates are uniquely programmable for each call priority, allowing any existing nurse call protocols to be simulated.

ANNUNCIATOR

Easy to read

*Custom designed message
text*

*Automatic scrolling of
multiple messages*

*Selectable sets of alert
tone sound sequences*

Day / Night shift mode



This high resolution, alphanumeric LED display provides audio / visual annunciation of active calls by means of text messages with accompanying alert tones based on priority. This IP-based device allows text messages, colors and tones to be completely configured for your facility. Multiple Annunciators can be connected anywhere on the LAN.

IPNET ROUTER



*Control and power up to
30 IPoint devices
Standard CAT5/6 cabling*

The IPnet Router acts as a router between the 10/100/1000 Mb hospital LAN and the 100 kb IPnet PAN (Patient Area Network), and controls up to 30 IPoint devices installed on the TACERA Nurse Call System. It facilitates net- or web-based programming while maintaining security with CE, UL and AS health care standards. The router provides Ethernet functionality with monitored and fused power over CAT5/6 cable for all IPoint devices.

IP CONNECT SERVER



*Based on Intel and Linux
technology*

*Integrates a wide range
of hardware, software
and database systems*

*Provides scalability and
enhanced QoS as multiple
servers can be installed
in load sharing or full
redundancy mode*

The IP Connect Server is the heart of a TACERA Nurse Call System. It connects and controls the Nurse Call devices, IPnet Routers, Nurse Stations, Annunciators, transmitters and wireless devices that form a modern Nurse Call system with messaging and workflow solutions.



THE AUSTCO GROUP OF COMPANIES

Austco Communication Systems Pty Ltd
Head Office Australia

Austco Communication Systems (New Zealand) Ltd
Austco Marketing & Service (Asia) Pte Ltd
(supporting Middle East)
Austco Marketing & Service (Canada) Ltd
Austco Marketing & Service (Latin America)
Austco Marketing & Service (UK) Ltd
Austco Marketing & Service (USA) Ltd

E: info@austco.com

W: www.austco.com

1694A Coax - Low Loss Serial Digital Coax



For more Information
please call

1-800-Belden1



General Description:

RG-6/U Type, 18 AWG solid .040" bare copper conductor, gas-injected foam HDPE insulation, Duofoil® + tinned copper braid shield (95% coverage), PVC jacket.

Usage (Overall)

Suitable Applications: SMPTE 2081-1 6 Gb/s UHDTV, SMPTE 424M 3 Gb/s HD-SDI 1080p

Physical Characteristics (Overall)

Conductor

AWG:

# Coax	AWG	Stranding	Conductor Material	Dia. (in.)
1	18	Solid	BC - Bare Copper	.040

Total Number of Conductors: 1

Insulation

Insulation Material:

Insulation Material	Dia. (in.)
Gas-injected FHDPE - Foam High Density Polyethylene	.180

Outer Shield

Outer Shield Material:

Layer #	Outer Shield Trade Name	Type	Outer Shield Material	Coverage (%)
1	Duofoil®	Tape	Aluminum Foil-Polyester Tape-Aluminum Foil	100
2		Braid	TC - Tinned Copper	95

Outer Jacket

Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

Overall Cable

Overall Nominal Diameter: 0.274 in.

Mechanical Characteristics (Overall)

Operating Temperature Range: -30°C To +75°C

Bulk Cable Weight: 41 lbs/1000 ft.

Max. Recommended Pulling Tension: 69 lbs.

Min. Bend Radius/Minor Axis: 2.750 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

NEC/(UL) Specification:	CMR
CEC/C(UL) Specification:	CMG
EU Directive 2011/65/EU (ROHS II):	Yes
EU CE Mark:	Yes
EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	01/01/2004
EU Directive 2002/96/EC (WEEE):	Yes
EU Directive 2003/11/EC (BFR):	Yes
CA Prop 65 (CJ for Wire & Cable):	Yes
MII Order #39 (China RoHS):	Yes

1694A Coax - Low Loss Serial Digital Coax

RG Type: 6/U

Flame Test

UL Flame Test: UL1666 Vertical Shaft

CSA Flame Test: FT4

Suitability

Suitability - Indoor: Yes

Suitability - Outdoor: Yes - Black only.

Suitability - Aerial: Yes - Black only, when supported by messenger wire.

Suitability - Burial: No

Plenum/Non-Plenum

Plenum (Y/N): No

Plenum Number: 1695A

Electrical Characteristics (Overall)

Nom. Characteristic Impedance:

Impedance (Ohm)

75

Nom. Inductance:

Inductance (µH/ft)

0.106

Nom. Capacitance Conductor to Shield:

Capacitance (pF/ft)

16.2

Nominal Velocity of Propagation:

VP (%)

82

Nominal Delay:

Delay (ns/ft)

1.24

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)

6.4

Nominal Outer Shield DC Resistance:

DCR @ 20°C (Ohm/1000 ft)

2.8

Nom. Attenuation:

Freq. (MHz)	Attenuation (dB/100 ft.)
1.000	0.240
3.580	0.440
5.000	0.520
6.000	0.570
7.000	0.610
10.000	0.710
12.000	0.780
25.000	1.080
67.500	1.650
71.500	1.690
88.500	1.860
100.000	1.950
135.000	2.240
143.000	2.300
180.000	2.570
270.000	3.170
360.000	3.690
540.000	4.500
720.000	5.300
750.000	5.400
1000.000	6.300
1500.000	7.800
2000.000	9.200
2250.000	9.800
3000.000	11.500

1694A Coax - Low Loss Serial Digital Coax

4500.000	14.500
6000.000	17.700

Max. Operating Voltage - UL:

Voltage
300 V RMS

Other Electrical Characteristic 1: TDR Impedance: 75 +/- 1.5 Ohms

Other Electrical Characteristic 2: Return Loss: Fixed bridge and termination.

Minimum Return Loss:

Start Freq. (MHz)	Stop Freq. (MHz)	Min. RL (dB)
5.000	1600.000	23.000
1600.000	4500.000	21.000
4500.000	6000.000	15.000

Sweep Test

Sweep Testing: 100% Sweep tested 5 MHz to 6 GHz.

Misc. Information (Overall)

Notes (Overall)

Notes: Also available in 4.5 GHz multi-coax bundled versions. See 7710A through 7713A.

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
1694A N3UN1000	1,000 FT	45.000 LB	GREEN, MIL		#18 PE/GIFHDPE SH FR PVC
1694A N3U1000	1,000 FT	45.000 LB	GREEN, MIL	C	#18 PE/GIFHDPE SH FR PVC
1694A N3U5000	5,000 FT	225.000 LB	GREEN, MIL	C N	#18 PE/GIFHDPE SH FR PVC
1694A 0011000	1,000 FT	45.000 LB	BROWN	C	#18 PE/GIFHDPE SH FR PVC
1694A 0015000	5,000 FT	225.000 LB	BROWN	C N	#18 PE/GIFHDPE SH FR PVC
1694A 0021000	1,000 FT	45.000 LB	RED	C	#18 PE/GIFHDPE SH FR PVC
1694A 0025000	5,000 FT	225.000 LB	RED	C N	#18 PE/GIFHDPE SH FR PVC
1694A 0031000	1,000 FT	45.000 LB	ORANGE	C	#18 PE/GIFHDPE SH FR PVC
1694A 004N1000	1,000 FT	45.000 LB	YELLOW		#18 PE/GIFHDPE SH FR PVC
1694A 0041000	1,000 FT	45.000 LB	YELLOW	C	#18 PE/GIFHDPE SH FR PVC
1694A 0061000	1,000 FT	45.000 LB	BLUE, LIGHT	C	#18 PE/GIFHDPE SH FR PVC
1694A 0065000	5,000 FT	225.000 LB	BLUE, LIGHT	C N	#18 PE/GIFHDPE SH FR PVC
1694A 0071000	1,000 FT	45.000 LB	VIOLET	C	#18 PE/GIFHDPE SH FR PVC
1694A 0075000	5,000 FT	225.000 LB	VIOLET	C N	#18 PE/GIFHDPE SH FR PVC
1694A 0081000	1,000 FT	45.000 LB	GRAY	C	#18 PE/GIFHDPE SH FR PVC
1694A 0085000	5,000 FT	225.000 LB	GRAY	C N	#18 PE/GIFHDPE SH FR PVC
1694A 009N1000	1,000 FT	45.000 LB	WHITE		#18 PE/GIFHDPE SH FR PVC
1694A 0091000	1,000 FT	45.000 LB	WHITE	C	#18 PE/GIFHDPE SH FR PVC
1694A 010N1000	1,000 FT	45.000 LB	BLACK		#18 PE/GIFHDPE SH FR PVC
1694A 0101000	1,000 FT	45.000 LB	BLACK	C	#18 PE/GIFHDPE SH FR PVC
1694A 010500	500 FT	22.500 LB	BLACK	C	#18 PE/GIFHDPE SH FR PVC
1694A 0105000	5,000 FT	225.000 LB	BLACK	C N	#18 PE/GIFHDPE SH FR PVC

Notes:

C = CRATE REEL PUT-UP.
N = FINAL PUT-UP LENGTH MAY VARY -0% TO +10% FROM LENGTH SHOWN.

Revision Number: 17 Revision Date: 06-17-2016

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For more Information
please call

1-800-Belden1



General Description:

14 AWG solid .064" bare copper conductor, gas-injected foam HDPE insulation, bare copper double shields (95% and 80% coverage), polyethylene jacket.

Physical Characteristics (Overall)

Conductor

AWG:

# Coax	AWG	Stranding	Conductor Material	Dia. (in.)
1	14	Solid	BC - Bare Copper	.064

Total Number of Conductors: 1

Insulation

Insulation Material:

Insulation Material	Dia. (in.)
Gas-injected FHDPE - Foam High Density Polyethylene	.285

Inner Shield

Inner Shield Material:

Type	Inner Shield Material	Coverage (%)
Braid	BC - Bare Copper	95

Inner Jacket

Inner Jacket Material:

Inner Jacket Material	Nom. Dia. (in.)
PE - Polyethylene	.365

Outer Shield

Outer Shield Material:

Type	Outer Shield Material	Coverage (%)
Braid	BC - Bare Copper	80

Outer Jacket

Outer Jacket Material:

Outer Jacket Material
PE - Polyethylene

Overall Cable

Overall Nominal Diameter: 0.475 in.

Mechanical Characteristics (Overall)

Operating Temperature Range:	-55°C To +80°C
Non-UL Temperature Rating:	80°C
Bulk Cable Weight:	112 lbs/1000 ft.
Max. Recommended Pulling Tension:	170 lbs.
Min. Bend Radius/Minor Axis:	5 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

EU Directive 2011/65/EU (ROHS II):	Yes
EU CE Mark:	No
EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	01/01/2004
EU Directive 2002/96/EC (WEEE):	Yes
EU Directive 2003/11/EC (BFR):	Yes

CA Prop 65 (CJ for Wire & Cable):	Yes
MII Order #39 (China RoHS):	Yes
RG Type:	11/U

Suitability

Suitability - Indoor:	Yes
Suitability - Outdoor:	Yes
Suitability - Aerial:	Yes, when supported by a messenger wire
Suitability - Burial:	Yes

Plenum/Non-Plenum

Plenum (Y/N):	No
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Electrical Characteristics (Overall)

Nom. Characteristic Impedance:

Impedance (Ohm)
75

Nom. Inductance:

Inductance (µH/ft)
0.097

Nom. Capacitance Conductor to Shield:

Capacitance (pF/ft)
16.1

Nominal Velocity of Propagation:

VP (%)
84

Nominal Delay:

Delay (ns/ft)
1.20

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
2.600

Nom. Inner Shield DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
1.700

Nominal Outer Shield DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
1.500

Nom. Attenuation:

Freq. (MHz)	Attenuation (dB/100 ft.)
1.000	0.140
3.600	0.300
10.000	0.400
71.500	1.100
135.000	1.600
270.000	2.300
360.000	2.600
540.000	3.300
720.000	3.800
750.000	4.000
1000.000	4.600
1500.000	5.900
2250.000	7.400
3000.000	9.000
4500.000	12.500

Max. Operating Voltage - Non-UL:

Voltage
300 V RMS

Minimum Return Loss:

Start Freq. (MHz)	Stop Freq. (MHz)	Min. RL (dB)
5.000	850.000	21.000
850.000	4500.000	15.000

Sweep Test

Sweep Testing: 100% Sweep tested 5 MHz to 4.5 GHz.

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
8233 0101000	1,000 FT	119.000 LB	BLACK	C	RG-11/U TYPE TRIAX
8233 0102000	2,000 FT	240.000 LB	BLACK	C	RG-11/U TYPE TRIAX
8233 010500	500 FT	63.000 LB	BLACK	C	RG-11/U TYPE TRIAX

Notes:

C = CRATE REEL PUT-UP.

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