C-DOT MBM-XL OVERVIEW

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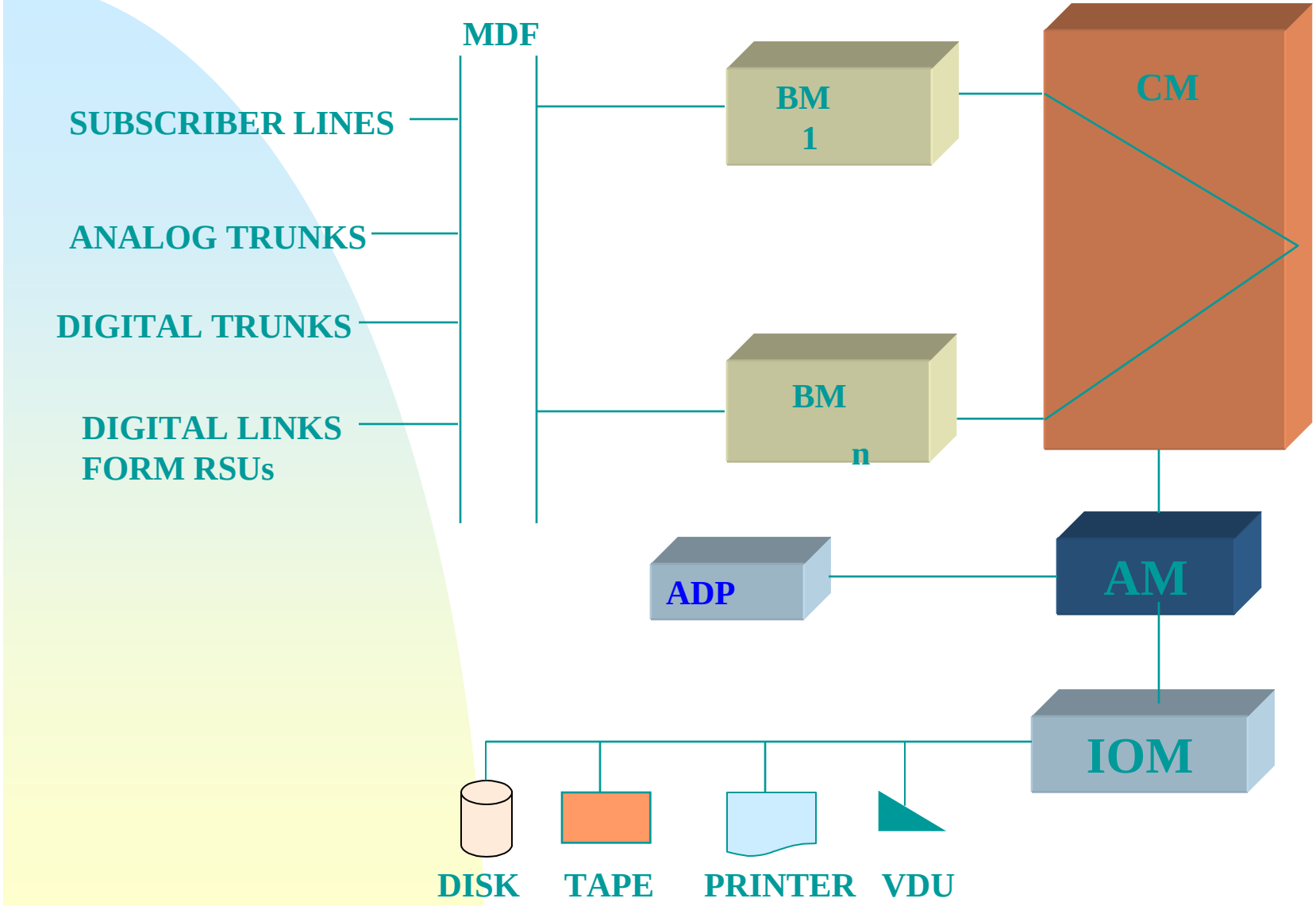
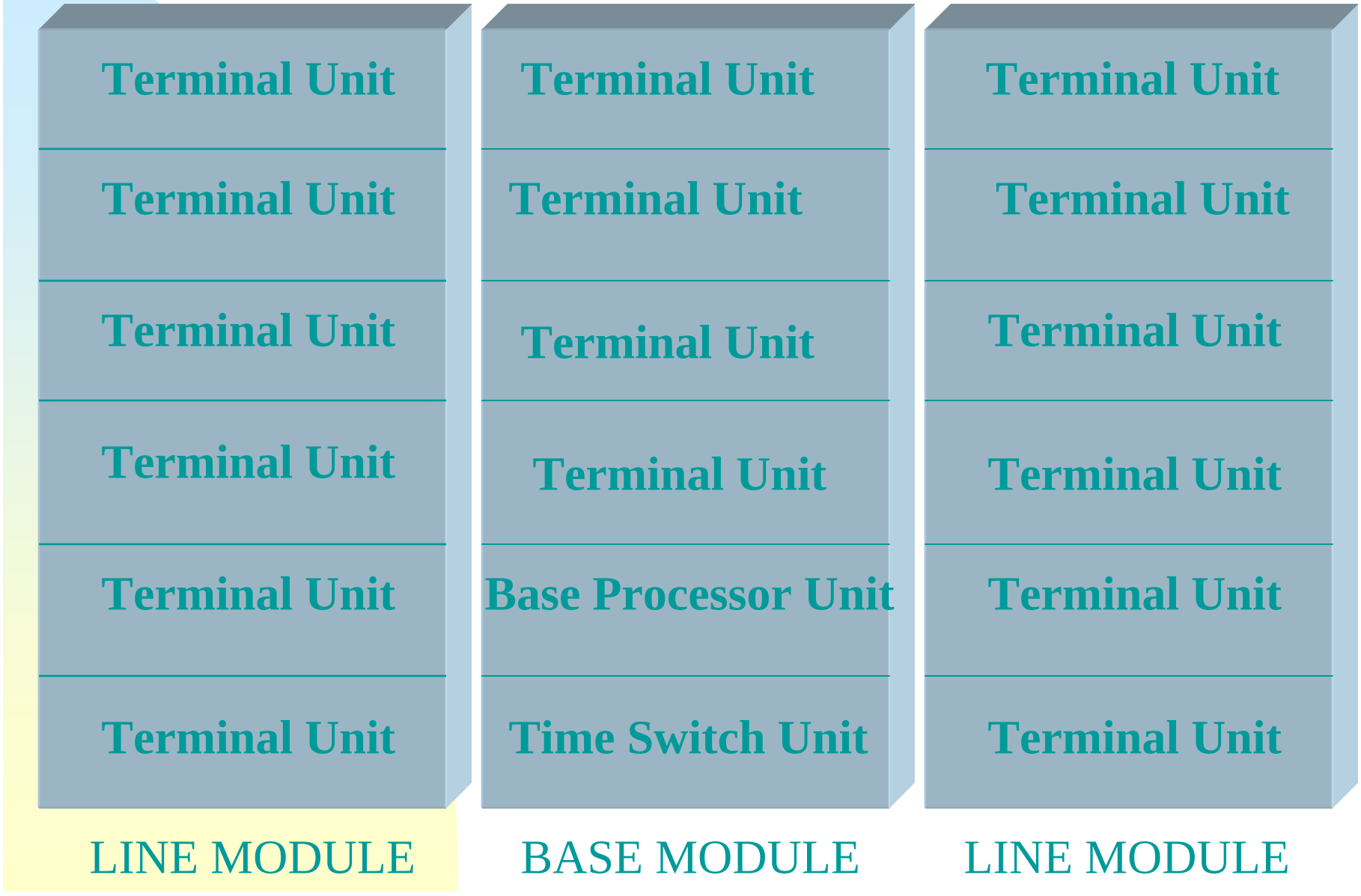
Introduction

- C-DOT MBM-XL OVERVIEW COVERS THE HARDWARE ARCHITECTURE AND FEATURES OF THE C-DOT MBM-XL SWITCHING SYSTEM
- IT COVERS THE DIFFERENT USES OF THIS SYSTEM IN THE NETWORK
- CCS#7 & ISDN IMPLEMENTATION IN C-DOT WILL ALSO BE DISCUSSED

C-DOT MBM-XL ARCHITECTURE



C-DOT SBM-XL


Terminal Unit
Terminal Unit
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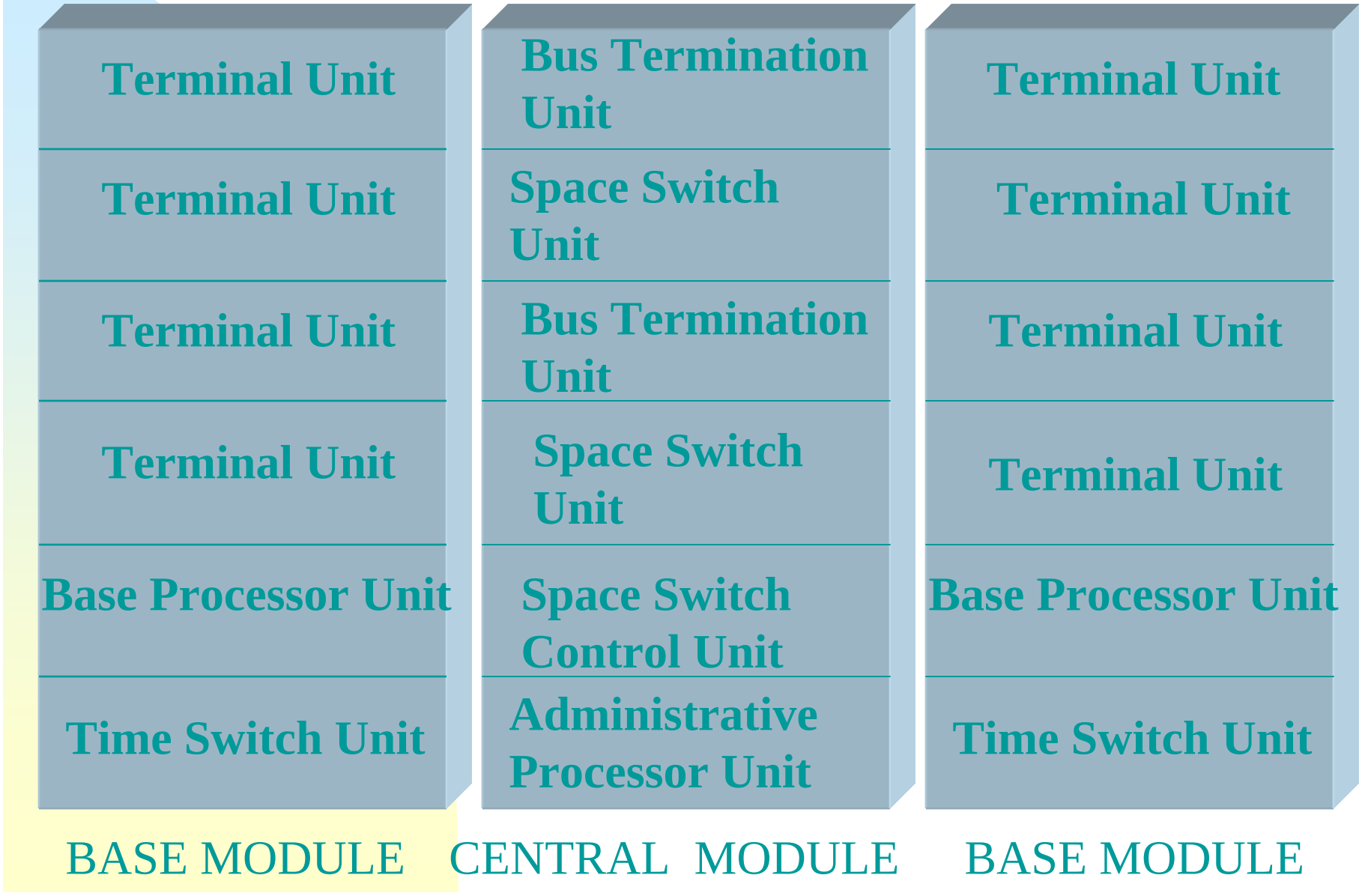
Terminal Unit
Terminal Unit
Terminal Unit
Base Processor Unit
Time Switch Unit
Terminal Unit
Terminal Unit
Terminal Unit
Terminal Unit
Terminal Unit
Terminal Unit
LINE MODULE
BASE MODULE
LINE MODULE

C-DOT MBM-XL


Terminal Unit
Terminal Unit
Terminal Unit
Terminal Unit
Base Processor Unit
Time Switch Unit
Bus Termination Unit
Space Switch Unit
Bus Termination Unit
Space Switch Unit
Space Switch Control Unit
Administrative Processor Unit
Terminal Unit
Terminal Unit
Terminal Unit
Terminal Unit
Base Processor Unit
Time Switch Unit
BASE MODULE
CENTRAL MODULE
BASE MODULE

SUBSCRIBER FEATURES

- Number Identification Service
  - Calling Line Identification Presentation(CLIP)
  - Calling Line Identification Restriction(CLIR)
  - Calling Line Identification Restriction Override
  - (CLIRO)
  - Malicious Call Identification(MCID)

SUBSCRIBER FEATURES

- Call Offering Supplementary Services
- Call Forwarding Unconditional(CFU)
- Call Forwarding Busy (CBF)
- Call Forwarding No Reply (CNFR)
- Call Completion Services
- Call Waiting
- Call Hold

SUBSCRIBER FEATURES

- Multi - Party Services
- Three Party Conference
- Multi Party Conference(Add-on Card)
- Miscellaneous Services
- Hot Line(Timed)
- Hot Line (Without Time Out)
- Reminder Call/Alarm Services

SUBSCRIBER FEATURES

- Subscriber Controlled Call Restriction Services
- Intrusion Barring Service
- Dialling By Terminal Equipment Number
- Trunk Offering
- Queuing Service
- Priority Subscriber
- Distinctive Ringing For Long Distance Calls

SYSTEM FEATURES

- Signalling, Routing And Charging Features
- Exchange Operation Features
- Exchange Maintenance Features
- Software Upgradation & Patch Administration
- Reconfiguration for Different Applications

ANALOG TERMINAL UNIT

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
PSUII		LCC/CCM	LCC/CCM	LCC/CCM	LCC/CCM	LCC/CCM	LCC/CCM	LCC/CCM	LCC/CCM	TIC	SPC/ISP	TUI	TUI	SPC/ISP	TIC	LCC/CCM	LCC/CCM	LCC/CCM	LCC/CCM	LCC/CCM	LCC/CCM	LCC/CCM	LCC/CCM	PSUII	

*VACANT SLOT OF PSM/ESM FILLED BY CML CARD

INTEGRATED SERVICES DIGITAL TERMINAL UNIT

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
PSUII		PSUII		BRL/PRL	BRL	BRL/PRL	BRL	BRL/PRL	BRL	BRL/PRL	BRL	ITC0	ICC00	IIC00	IIC01	ICC11	ITC11	BRL/PRL	BRL	BRL/PRL	BRL	BRL/PRL	BRL	BRL/PRL	

*VACANT SLOT OF PSM/ESM FILLED BY CML CARD

BUS TERMINATION UNIT

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
PSUII		PSUII		PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM	CMLAOO	CMLAOO	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSUII		PSUII	

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BUS TERMINATION UNIT

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
PSUII		PSUII		PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM	CMLAOO	CMLAOO	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSUII		PSUII	

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BUS TERMINATION UNIT

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
PSUII		PSUII		PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM	CMLAOO	CMLAOO	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSUII		PSUII	

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BUS TERMINATION UNIT

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
PSUII		PSUII		PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM	CMLAOO	CMLAOO	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSM/ESM	PSUII		PSUII	

*VACANT SLOT OF PSM/ESM FILLED BY CML CARD

SPACE SWIYCH UNIT

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
PSUII		PSUII		PSS	PSS	PSS	PSS	PSS	PSS	PSS	PSS	CMLAOO	CMLAOO	PSS	PSS	PSS	PSS	PSS	PSS	PSS	PSS	PSUII		PSUII	

*VACANT SLOT OF PSS FILLED BY CSL CARD

SPACE SWITCH CONTROLE UNIT

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
PSUII		PSUII		CCK	BME	CMLAOO	CBX	NSC			HPC/BPC	CMLAOO	CMLAOO	HPC/BPC	NSC			CBX	CMLAOO	BME	CCK	PSUII		PSUII	

ADMN PROCESSOR UNIT

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
PSUII		PSUII		CMLAOO	CMLAOO	HMS	CMLAOO	CMLAOO	HMS	BME	HPC/BPC	CMLAOO	CMLAOO	HPC/BPC	BME	HMS	CMLAOO	CMLAOO	HMS	CMLAOO	CMLAOO	PSUII		PSUII	

SIGNALLING UNIT MODULE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
PSUII		PSUII			BME	SHMM1	SHMM2	SHMM3	SHMM4	HPC/BPC	TUCC	TUUI	TUUI	TUUC	HPC/BPC	SHMM5	SHMM6	SHMM7	SHMM8	BME		PSUII		PSUII	

REMOTE SWITCH UNIT

- REMOTE PRODUCTS
- Remote Switch Unit(RSU)
- Remote Line Unit(RLU)
- Remote Line Concentrator(RLC)
- NEED FOR REMOTE SWITCH UNIT
- Solution for Space for large exchanges
- Reducing the cost on cables

REMOTE SWITCH UNIT

- REMOTE SWITCH UNIT FEATURES
- Power On Initialization
- Digital Trunk Link Status
- Call Shifting During DTK Fault
- Initialization In Stand Alone Mode
- Initialization From RBMSA To Normal (RBM) Mode

REMOTE SWITCH UNIT

- REMOTE SWITCH UNIT FEATURES
- Support For Trunks In RBM
- Numbering Scheme In RSU
- Support For Different Area Code In RSU and Main Exchange
- Provision To Block Local Calls Between Main Exchange and RSU If RSU have Different Area Code

REMOTE SWITCH UNIT

- REMOTE SWITCH UNIT FEATURES
- Emergency Services In RBMSA Mode
- Charging For RBM
  - Line To Line Call
  - Line To Trunk Calls
  - Trunk To Line Calls(I/C Terminating)
  - Trunk To Trunk Calls

REMOTE SWITCH UNIT

- RSU RELATED COMMANDS
  - CRE-RBMSA-CONFIG
  - DISPL-RBMSA-CONFIG
  - MOD-RBM-XCOD
  - DISPL-RBM-XCOD
  - ADD-DTK-RBM
  - DISPL-RBM-DTKS
  - MOD-SUB-CRG
  - DISPL-SUB-CRG

C-DOT 256P AN-RAX and RLC FEATURES

FEATURES

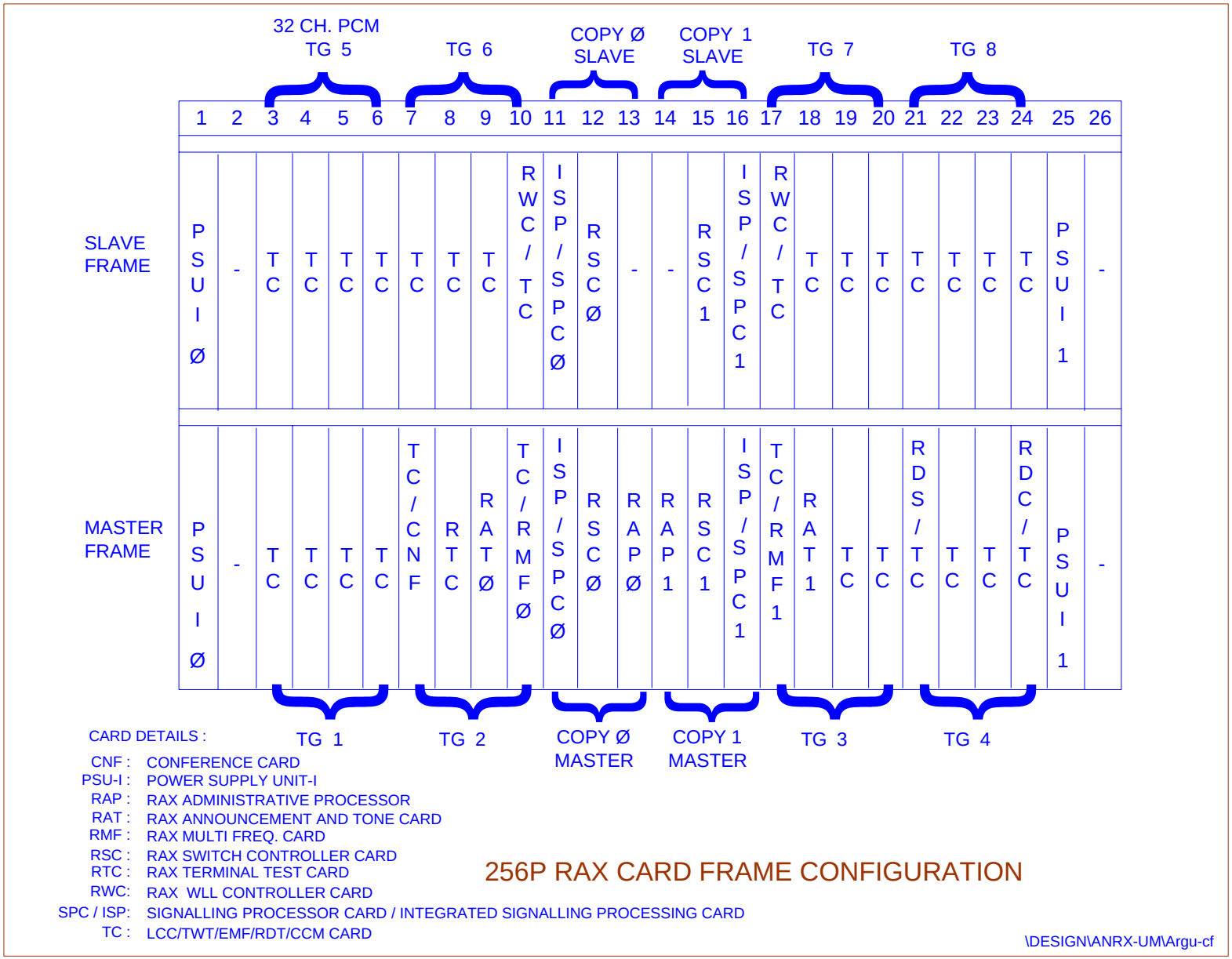
- Provides front end termination for PSTN subscribers
- Supports maximum of 248 PSTN subscribers
- Connected to Local Exchange (LE) over one or two E1 links using standard V5.2 Protocol as per ITU-T specifications G.964 & G.965 and ETSI specifications 300-324 & 300-347.
- Provides First/Second Level of remoting
- Provides a transparent link between subscriber and Local Exchange
- Provides Calling Line Identification Presentation (CLIP) on 2 ports of LCC card
- Provides 16KHz Metering Pulse and Calling Line Identification Presentation (CLIP) on 2 ports of each CCM card
- Provides Reversal on all 8 ports of CCM card
- Provides Man Machine Interface (MMI) using VT 100 dumb

FEATURES (Contd.)

- Password Protection
- Requires no air-conditioning
- Low Power Consumption
- Line Testing can be performed locally
- Transparently supports all subscribers feature as supported by Local Exchange (LE)
- For any feature related enhancements, the S/W changes are to be done on Local Exchange (LE) only

HARDWARE

- Consists of two controller cards
  - AN RAX Controller Card (ARC Card)
  - AN RAX Interface Card (ARI Card)
- ARC card supports 2 E1 links toward Local Exchange
- Both the cards form a security block alongwith respective SPC cards
- Redundancy in Controller Cards
- 8 port LCC/CCM cards for Subscriber Interface
- RTC card for testing of subscriber ports



CARD DETAILS :

CNF : CONFERENCE CARD
PSU-I : POWER SUPPLY UNIT-I
RAP : RAX ADMINISTRATIVE PROCESSOR
RAT : RAX ANNOUNCEMENT AND TONE CARD
RMF : RAX MULTI FREQ. CARD
RSC : RAX SWITCH CONTROLLER CARD
RTC : RAX TERMINAL TEST CARD
RWC: RAX WLL CONTROLLER CARD
SPC / ISP: SIGNALLING PROCESSOR CARD / INTEGRATED SIGNALLING PROCESSING CARD
TC : LCC/TWT/EMF/RDT/CCM CARD

256P RAX CARD FRAME CONFIGURATION

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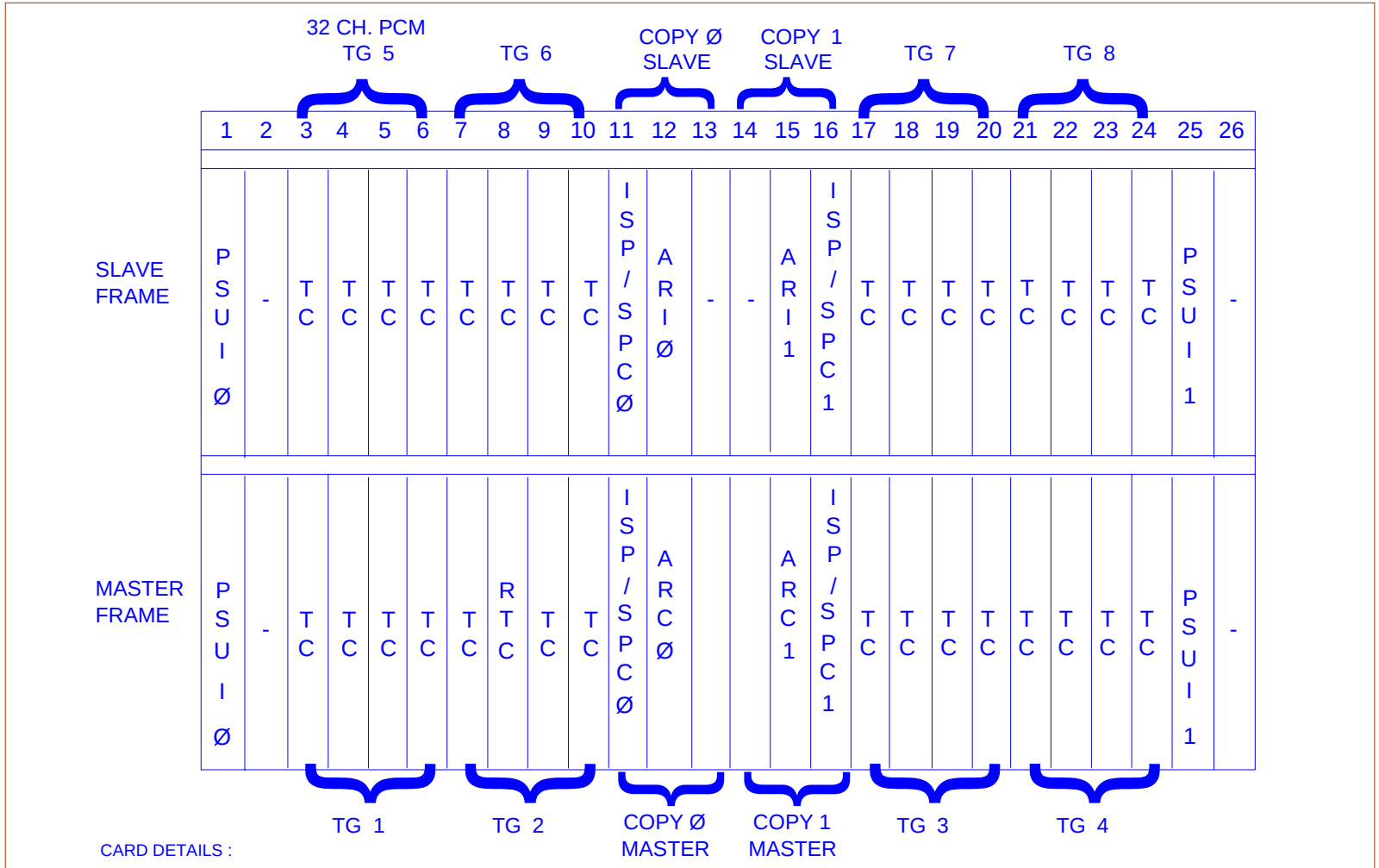

CARD DETAILS :

ARC :	AN-RAX CONTROLLER CARD
ARI :	AN-RAX INTERFACE CARD
PSU-I :	POWER SUPPLY UNIT-I
RTC :	RAX TERMINAL TEST CARD
SPC / ISP:	SIGNALLING PROCESSOR CARD / INTEGRATED SIGNALLING PROCESSING CARD
TC :	LCC/CCM CARD

256P AN-RAX CARD FRAME CONFIGURATION

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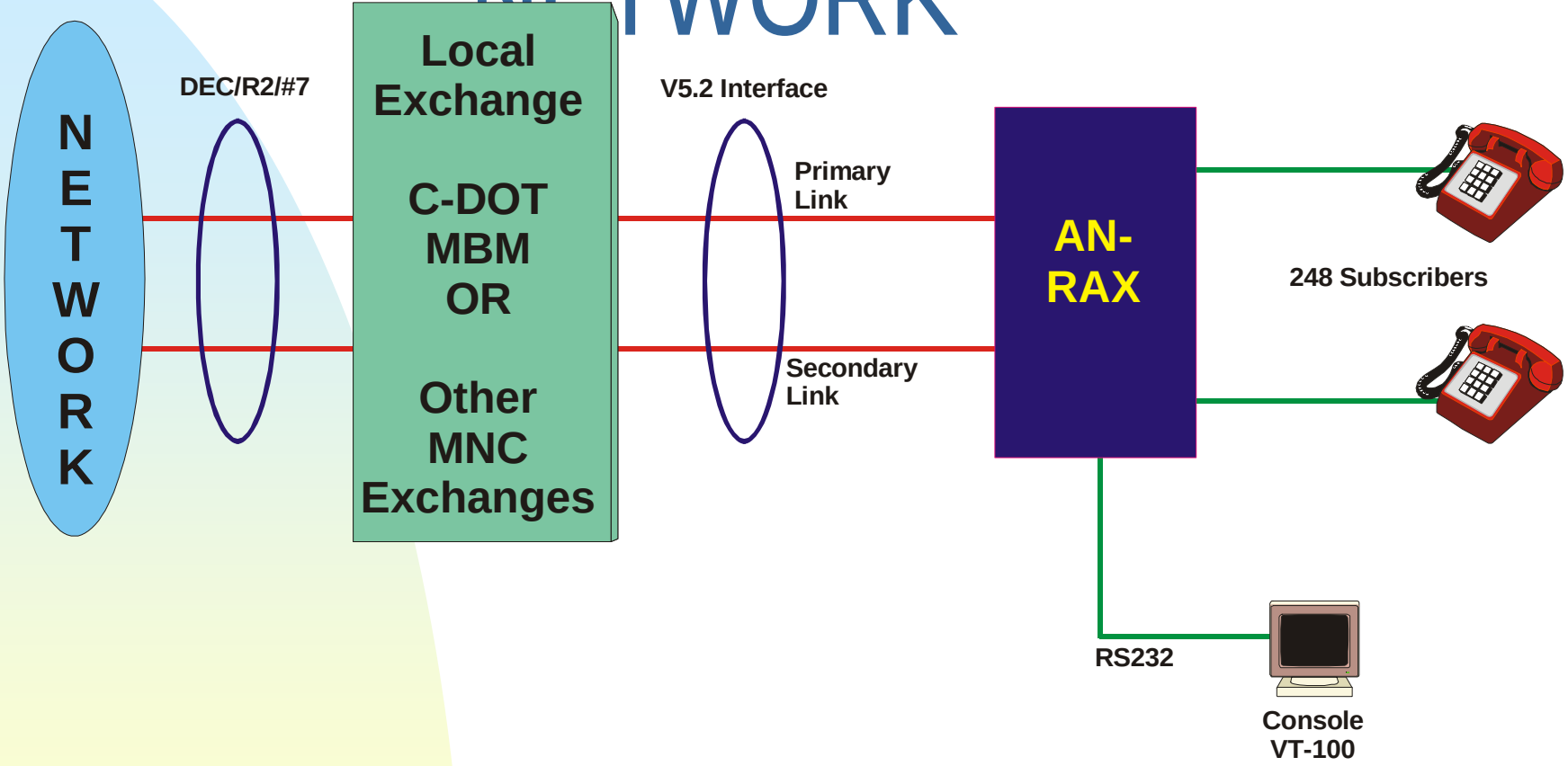
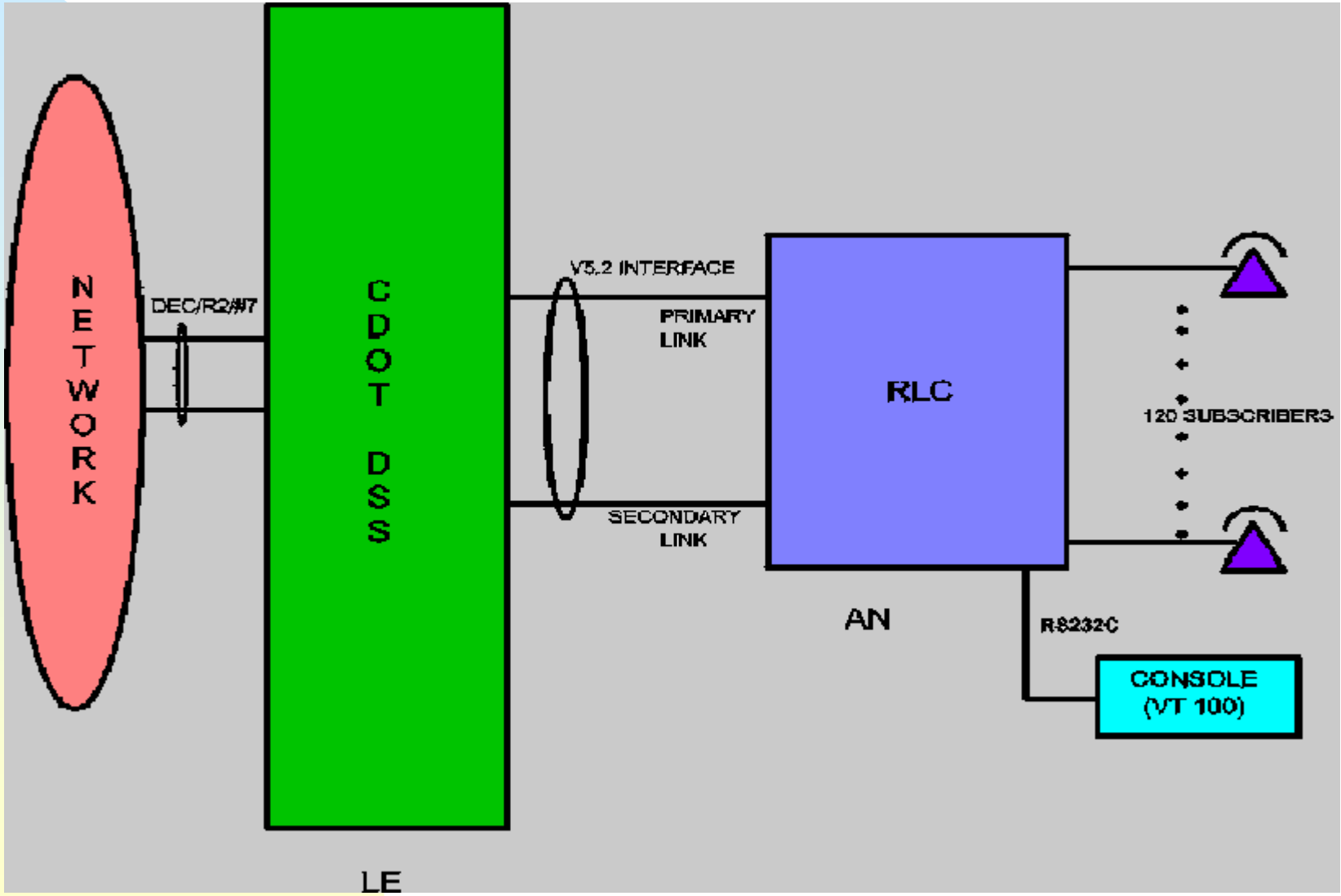
CONNECTIVITY TO NETWORK



DIFFERENCE BETWEEN C-DOT RSU AND C-DOT AN-RAX

C-DOT RSU	C-DOT AN-RAX
• First Level of Remoting	• First/Second Level of Remoting
• Connected to LE through Proprietory Protocol	• Connected to LE through Standard V5 protocol
• In standalone mode it performs the various call processing & Billing functions	• In standalone mode it only feeds the tone/ announcement to the subscriber

REMOTE LINE CONCENTRATOR(RLC) AS ACCESS NETWORK



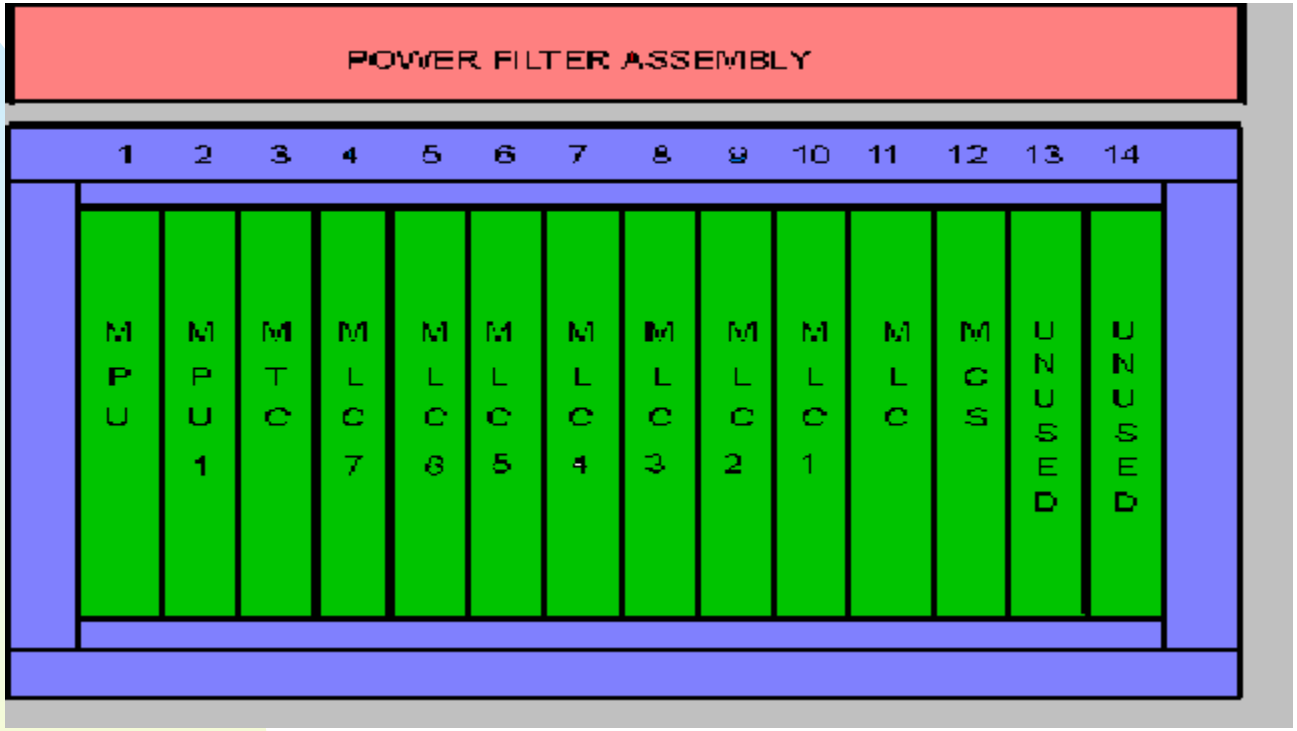
FEATURES

- **Provides front end termination**
- **Supports maximum of 120 PSTN subscribers**
- **Supports maximum of 56 ISDN BRA subscribers**
- **Combination of PSTN & ISDN BRA subscribers. (Compatible motherboard)**
- **Connected to Local Exchange (LE) over two E1 links**
- **Provides second level of remoting**
- **Provides a transparent link between subscribers and local exchange**

FEATURES

- Provides 16KHz metering pulse, Reversal and Calling Line Identification (CLI) on all ports.
- Provides Man Machine Interface (MMI)
- Password protection
- Wall mountable (light weight)
- Require no air conditioning
- Low power consumption
- Will provide HDSL connectivity in future
- Compact in Size (19” packaging)
- Line testing can be performed locally

C-DOT RLC CARD CAGE



MPU : MUX Power Unit to Provide Ring and Voltages

MTC : MUX Tester Card for Line Card Testing and to Provide announcement

MLC : MUX Line Card

MCS : MUX Control and Signaling Card ; E1 Link Termination and V5 Protocol Software

DIFFERENCE BETWEEN RSU AND RLC

RSU	RLC
• First level of Remoting	• Second level Remoting
• Connected to LE through proprietory protocol	• Connected to LE through Standard V5 protocol
• In 'Stand Alone' mode it performs the various Call Processing & Billing Functions	• In 'Stand Alone' mode, it only feeds the tone to subscribers