

MITEL

# 3300 | IP Communications Platform



Providing feature-rich IP telephony and advanced user applications to corporate local and wide area networks (LAN / WAN)

## Controllers

	3300 CX/CXi Controller	3300 Mx Controller (Standard/Expanded)	3300 MX Controller	3300 LX Controller
Maximum number of IP phones	64	200 / 1,400	200	1400
Shipped with (standard)	One dual DSP module (integrated), 12 echo cancellers, Three empty MMC slots	Two quad DSP modules (integrated), 128 echo cancellers, Five empty MMC slots	One quad DSP module, 64 echo cancellers, Three empty MMC slots	Two quad DSP modules, 128 echo cancellers, Five empty MMC slots
Maximum embedded digital trunk modules	2*	3	2**	3**
Maximum embedded BRI modules	2	3	3	3
Maximum ACD agents	50	100 / 350***	100 total: Max 50 IP	350***
Maximum consoles	8	8 / 24	8	24
10/100/Gig Base T Ethernet ports	See CXi Controller Data Connectivity section	2	1 (10 / 100 Base T only)	4 (10 / 100 Base T only)

\* Single embedded digital trunk module

\*\* Dual embedded digital trunk module

\*\*\* Engineering rules apply



it's about **YOU**

**Controllers con't.**

	3300 CX/CXi Controller	3300 MXe Controller (Standard/Expanded)	3300 MX Controller	3300 LX Controller
Maximum dual DSP modules	1	–	–	–
Maximum quad DSP modules	1	3 (plus 2 integrated)	3	5
Maximum echo cancellation channels	64	128	64	128
Maximum G.729a compression channels Every 32 channels requires a DSP module	16 (Optional)	32 / 64 (Optional)	32 (Optional)	64 (Optional)
Max number of NSUs	–	8	4	8
Maximum number of digital links (except BRI)	2	16	8	16
Maximum number of Dual FIMs (To connect to a TDM peripheral unit, NSU, DSU or Mitel SX-2000 MicroLIGHT Triple FIM Card)	–	4 Dual FIMs 8 FIM links	2 Dual FIMs 4 FIM links	4 Dual FIMs 8 FIM links
Maximum number of ASU or ASU II	–	4	2	4
Maximum number of Fibre connected cabinets	–	6	3	6
Maximum number of Peripheral cabinets (including expansion cabinets)	–	12	6	12
Tone generators	128	128	128	128
Tone detector circuits	32	32	32	32
E2T channels	64	64 / 128	64	128
DTMF receivers	128	128	128	128
Embedded BRI module S and / or T interfaces	8	12	12	12

**Controllers con't.**

	3300 CX/CXi Controller	3300 MXe Controller (Standard/Expanded)	3300 MX Controller	3300 LX Controller
IP networking – max IP trunks between any two controllers	200	200	200	200
IP networking – total max IP trunks	2,000	2,000	2,000	2,000
SIP trunking – total max SIP trunks	2,000	2,000	2,000	2,000
SIP trunking – max SIP trunks between peers	400	400	400	400
Maximum nodes in a cluster	250	250	250	250
STP	Yes	Yes	No	Yes
RSTP	Yes	Yes	No	No

**Note:** Empty MMC slots can be used for DSP modules, Dual FIM modules (to the maximum amount specified), echo canceller modules and embedded digital trunk modules. Please note that when Peripheral Nodes are connected to additional Dual FIM modules, there must be sufficient telecom resources to support them. Please contact your sales engineer for detailed information.

### CXi Controller Data Connectivity

Integral 16-port powered L2 10/100 Ethernet switch  
Has additional 10/100/1000 Ethernet uplink port

- Provides connection to additional switch ports and router

Also has WAN port that is an “Internet Gateway”

- WAN port provides connection to an ISP for Internet access (e.g., DSL or cable)
- WAN port provides NAT and Firewall capabilities
- WAN port does not support IP Networking

Use external router for IP Networking

- Same as you would with a CX, MXe, MX and LX Controller

### Embedded Applications

#### Embedded Voice Mail

- MXe/MX/LX: Standard: 20 ports, Auto Attendant sessions or simultaneous voice mail sessions, (expandable to 30 ports/sessions, requires additional DSP)
- CX/CXi: Standard: 4 ports, Auto Attendant sessions or simultaneous voice mail sessions, (expandable to 16 ports/sessions, requires additional DSP)
- 750 mailboxes (maximum)
- 450 storage hours
- 100 messages per mailbox (maximum)
- Two concurrent system languages
- Multi level options – eight single digit (unlimited multi-digit), maximum of 10 levels

#### Embedded ACD

- 1,181 Agent IDs
- Maximum of 350 total logged-in agents
- 256 paths
- Either 64 agent groups (150 agent IDs per group)  
OR 32 agent groups (500 agent IDs per group)

### Embedded Wireless Phones

- SpectraLink 802.11b\* or Mitel IP-DECT\*\* wireless phones supported
- 802.11b or IP-DECT access points supported
- Custom integration with SpectraLink and IP-DECT MiNet wireless phones

### IP Networking

- Supports G.711 and G.729 compression
- Connect up to 249 other network nodes
- Total of 2,000 IP Network connections supported to / from any one node
- Up to 200 connections between any two nodes
- One IP Network license required per controller

### SIP trunking

- Supports G.711 and G.722 compression
- Total of 2,000 SIP trunk connections supported
- Up to 400 connections to any peer
- SIP trunking license required per voice channel
- Supports RFC's
  - RFC 3261 - SIP: Session Initiation Protocol
  - RFC 3262 - Reliability of provisional responses in session initiation protocol (SIP)
  - RFC 3263 - Locating SIP Servers
  - RFC 3264 - An offer answer model with session description protocol
  - RFC 3515 - The session initiation protocol (SIP) refer method
  - RFC 2976 - The SIP info method
  - RFC 3325 - Private extensions to the session initiation protocol (SIP) for asserted identity within trusted networks
  - RFC 1321 - The MD5 message digest algorithm
  - RFC 2833 - RTP payload for DTMF digits, telephony tones and telephony signals (section 3.10)

\* 802.11b access points must be SpectraLink SVP compliant

\*\* IP-DECT available in Europe and Australia

## Digital Trunk Connectivity

### Universal NSU

- Connects to controller via a FIM link
- A second NSU can be daisy chained from the first NSU via CIM (allows two NSUs per FIM link)
- Each NSU supports two digital links
- Both links in an NSU must run the same protocol (T1-D4 or MSDN/DPNSS or PRI/QSIG)

**Supports:** T1 CAS (T1-D4) – digital E&M, digital CO, digital DID, IDA-P  
T1 CCS – Primary Rate ISDN, XNET over PRI, QSIG,  
MSDN/DPNSS  
E1 – QSIG, Euro ISDN, XNET over PRI, DASSII, MSDN/DPNSS

### Dual Embedded Digital Trunk Module (MXe/MX/LX)

- Each module has two E1/T1 trunk interfaces (links)
- Provides PRI/QSIG/T1-D4/DASS II/DPNSS/IDA-P protocol through the controller (no NSU required)
- Each interface can run a different protocol, either PRI, QSIG or T1-D4

**Does not support:** Min/Max, NFAS, D-Channel Backup or TDM XNET (Hybrid XNET is supported)

### Single Embedded Digital Trunk Module (CX/CXi/MXe/MX/LX)

- Each module has a single E1/T1 trunk interface (link)
- Provides PRI/QSIG/T1-D4/DASS II/DPNSS/IDA-P protocol through the controller (no NSU required)
- Resiliency (switches to secondary controller)
- Includes on board DSP

**Does not support:** Min/Max, NFAS, D-Channel Backup or TDM XNET (Hybrid XNET is supported)

### Embedded BRI Module

The Embedded BRI module has four Basic Rate Circuits (total 8 – 64kbs channels)

Each channel may be configured as either:

- T (trunk) interface for links from a BRI Central Office (CO) OR
- S (subscriber) interface for connecting up to eight BRI devices

**Note:** S interfaces support only basic call features such as calling number display for BRI devices (BRI call handling such as Hold or Transfer are not supported). BRI devices are not line powered from the embedded BRI module.

## R2 NSU

- Each R2 NSU supports two links
- Connects to controller via a FIM link
- A second NSU can be daisy chained from the first NSU via CIM (allows 2 NSUs per FIM link)

## Analog Connectivity\*

### Analog Service Unit (ASU)

- Supports 24 analog CLASS\*\* stations
- Connects to the controller via CIM

### Analog Service Unit II (ASU II)

- Chassis with 2 Line Card slots
- Two line card variants:
  - 16 ONS Line Card
  - 4 LS + 12 ONS Combo Line Card
- Connects to the controller via CIM

### Supports combinations of:

- 32 analog CLASS stations (maximum 16 per ONS Line Card)
- 8 LS trunks (maximum 4 per Combo Line Card)
- 8 System Fail Transfers (maximum 4 per Combo Line Card)

### Universal ASU

- 16 analog CLASS stations
- 4 LS trunks
- Music-On-Hold (1 source supported)
- Paging (2 paging zones per ASU)
- System Fail Transfer (4 per universal ASU)
- Connects to the controller via CIM

\* Also see Analog Cards in the Mitel SX-2000® peripheral cabinet

\*\* Analog extension ports support CLASS signalling for North America and Latin America, and Euro ETSI for name and number identification

## Embedded Analog (CX/CXi/MX/MXe)

### Analog Main Board

- Built into CX, CXi, MXe, MX, Controllers

**Supports:** 6 LS CLASS\* trunks  
 Analog CLASS stations (ONS): 4 (CX/CXi/MXe), 2 (MX)  
 Music-On-Hold (1 source supported)  
 Paging (1 paging zone)  
 System Fail Transfer (2 circuits)

### Analog Option Module (not available on MXe)

- 1 optional per CX/CXi/MX Controller

**Supports:** 6 LS CLASS trunks  
 Analog CLASS stations (ONS): 4 (CX/CXi), 2 (MX)

### TDM Connectivity

#### Peripheral Node

- Connects via Dual FIM module, each module supporting 2 Peripheral Nodes
- 12 Peripheral Interface Cards per cabinet
- Max 192 analog or DNI ports
- Can add an Expansion Cabinet to a Peripheral Node – providing a total of 384 ports or 24 peripheral interface cards

**Supports:** DID/loop Tie Card (4 ccts/card)  
 DNIC Line Card (16 ccts/card)  
 DTMF Receiver Card (16 ccts/card)  
 E&M Trunk Card (4 ccts/card)  
 LS/GS Trunk Card (8 ccts/card)  
 Analog, analog CLASS, analog CLASS/CLIP Line Cards (16 ccts/card)

\* Analog trunks support CLASS signalling for North America and Latin America

## Dimensions

	3300 Controller	Analog Services Unit (ASU)	Network Services Unit (NSU)	Peripheral Cabinet
Height	CX/CXi - 3.5 in (8.9 cm) (2U) MXe - 3.5 in (8.9 cm) (2U) MX/LX - 2.7 in (7 cm) (1.5U)	ASU - 1.75 in (4.454 cm) (1U) ASU II - 3.3 in (8.4 cm) (2U)	1.75 in (4.454 cm) (1U)	19.0 in (48.0 cm)
Width	17.75 in (45.1 cm) (19" rack mountable)	17.75 in (45.1 cm) (19" rack mountable)	17.75 in (45.1 cm) (19" rack mountable)	18.0 in (45.8 cm)
Depth	CX/CXi - 16.5 in (41.9 cm) MXe - 20.25 in (51.4 cm) MX - 19.6 in (50 cm) LX - 15.5 in (39.4 cm)	ASU - 15.5 in (39.4 cm) ASU II - 13.3 in (33.8 cm)	15.5 in (39.4 cm)	19.0 in (48.0 cm)
Weight	CX/CXi - 19.8 lb (8.98 kg) MXe - 31.5 lb (14.3 kg) MX - 14 lb (6.39 kg) LX - 15.8 lb (7.17 kg)	ASU - 10.61 lb (4.81 kg) ASU II - 14.1 lb (6.4 kg)	8.41 lb (4.27 kg)	71.8 lb (32.6 kg)

## Operational Environment

	3300 Controller	Analog Services Unit (ASU)	Network Services Unit (NSU)	Peripheral Cabinet
Temperature	41° to 122°F (5° to 50°C)	41° to 122°F (5° to 50°C)	41° to 122°F (5° to 50°C)	32° to 122°F (0° to 50°C)
Humidity	40 - 90% relative humidity, non condensing	34 - 95% relative humidity, non condensing	34 - 95% relative humidity, non condensing	5 - 95% relative humidity, non condensing
Max Heat Dissipation (Fully Loaded)	LX/MXe - 750 BTUs per hour MX - 500 BTUs per hour CX/CXi - 170 BTU per hour	170 BTUs per hour	170 BTUs per hour	724 BTUs per hour
Air Flow	46 cubic ft / min at max output of fans	–	–	150 cubic ft / min at max output of fans
Acoustic Emissions	Max 50dBA continuous, 75 dB intermittent (<10% duty cycle)	–	–	Max 50dBA 75 dB intermittent (<10% duty cycle)

**Conversion factors:** one watt is equal to 3.412 BTUs per hour. One ton of refrigeration is equal to 12,000 BTUs per hour or 3.516 kilowatts, and 0.75 kilowatt-hour is equal to one ton of refrigeration.

### System Input Power Requirements

	3300 Controller	Analog Services Unit (ASU)	Network Services Unit (NSU)	Peripheral Cabinet
Input / Disconnect	IEC320 - C14 Class 1 AC Receptacle	IEC320 - C14 Class 1 AC Receptacle	IEC320 - C14 Class 1 AC Receptacle	IEC320 - C14 Class 1 AC Receptacle
Input Voltage / Frequency Rating	100 - 240 VAC, 50/60Hz	100 - 240 VAC, 50/60Hz (19" rack mountable)	100 - 240 VAC, 50/60Hz (19" rack mountable)	102 - 120 VAC 50/60 Hz MP914AA PSU variant, 200 - 240 VAC 50/60 Hz MP914AD PSU variant
Input Power	CX/CXi - 250W MXe - 150W MX - 100W LX - 135W	ASU - 75W maximum ASU II - 125W maximum	60W (Universal and R2)	212W maximum
AC Source Range	90 - 264 VAC 47 - 63Hz	90 - 264 VAC 47 - 63Hz	90 - 264 VAC 47 - 63Hz	102 - 132 VAC 47 - 63Hz or 187 - 264 VAC 47 - 63Hz (depending on variant)

### Grounding Requirements

The grounding conductor must be an insulated grounding conductor, sized according to the National Electrical Code (NEC) in the United States (NFPA / ANSI 70 Section 250 - 95, Exception No. 1, and Section 240-4, Exception No. 1).

The grounding conductor is provided as part of the three-wire, 15-Amp, AC-power cord set included with the equipment. If the power cord must be replaced, use a power cord of the same gauge that has the same insulation, number of conductors, and usage ratings.

The grounding conductor must be:

- Not smaller in size than, and equivalent in insulation material and thickness to, the grounded and ungrounded branch circuit supply conductor
- An insulated green wire with yellow stripes
- Part of the circuit that supplies that product or system
- Connected to ground at the service equipment

The protective grounding conductor must comply with the general rules for grounding contained in Article 250 of the National Electrical Code, NFPA 70, or Section 10 of the Canadian Electrical Code, CSA C22.1. The protective grounding conductor must not depend on the power cord and plug of the product.

The protective grounding conductor must be:

- An insulated wire, #6 (13mm<sup>2</sup>) to #14 (2mm<sup>2</sup>) AWG, with green and yellow stripes
- Connected to the grounding stud on the back of the cabinet

## Glossary

ACD	Automatic Call Distribution
ASU	Analog Services Unit
BRI	Basic Rate Interface
BTU	British Thermal Unit
CAS	Channel Associated Signaling
CCS	Common Channel Signaling
CIM	Copper Interface Module
CLASS	Custom Local Access Signaling Services
DASSII	Digital Access Signaling System #2
DID	Direct Inward Dial
DNI	Digital Network Interface
DPNSS	Digital Private Network Signaling System
DSP	Digital Signal Processor
DTMF	Dual Tone Multi-Frequency
FIM	Fiber Interface Module
IP	Internet Protocol
ISDN	Integrated Services Digital Network
LS	Loop Start Trunk
MMC	MITEL Mezzanine Card
MOH	Music on Hold
MSDN	Mitel Superswitch Digital Network
NFAS	Non-Facilities Associated Signaling
NSU	Network Services Unit
OPS	Off Premises, long loop analog PBX ports
PRI	Primary Rate Interface, ISDN
OSIG	Q - Signaling Protocol
VM	Voice Mail
XNET	Switched Networking

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