

MITEL

# 3300 | IP Communications Platform



Providing feature-rich IP communication and advanced user applications to corporate local and wide area networks

## Controllers

	3300 CX / CXi	3300 MxEx Standard	3300 MxEx Expanded	3300 MxEx Server	3300 AX
Maximum number of devices – including software agents <sup>1</sup>	150	350	1,500	5,000	250
Maximum number of IP phones <sup>1</sup>	100	300	1,400	5,000	100
Maximum number of SIP devices / users	100	300	1,000	1,000 <sup>2</sup>	100
Maximum ACD Agents <sup>1</sup>	50	100	350	350	50
Maximum 5550 IP consoles	8	16	24	24	8
Maximum number of analog phones	104	400	1,200 (via peripheral cabinets)	–	192
Shipped with:	1 Dual DSP module (integrated) AMB Hard Disk Drive Power Supply 10 Echo Cancellers	2 Quad DSP modules (integrated) AMB Hard Disk Drive Power Supply 128 Echo Cancellers	2 Quad DSP modules (integrated) AMB Hard Disk Drive Power Supply 128 Echo Cancellers	2 Quad DSP modules (integrated) RAID Controller Dual HDD Drives Dual Power Supplies 256 Echo Cancellers	2 Quad DSP modules (integrated) Flash Drive Power Supply 42 Echo Cancellers
Available MMC Slots	2	5	5	–	2
MMC Slots for:	Quad CIM Single T1 / E1 Quad BRI Dual & Quad DSP	Dual FIM Quad CIM Single and Dual T1 / E1 Quad BRI Quad DSP Echo Cancellor	Dual FIM Quad CIM Single and Dual T1 / E1 Quad BRI Quad DSP Echo Cancellor	Quad DSP Echo Cancellor	Single and Dual T1 / E1 Quad BRI Quad DSP Echo Cancellor
Maximum embedded Dual T1 / E1 digital trunk modules	2 (Single trunk modules only)	3	3	–	1
Maximum embedded BRI modules	2	3	3	–	1

<sup>1</sup> Engineering rules apply

<sup>2</sup> Higher limits are currently being qualified



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## Controllers cont.

	3300 CX / CXi	3300 Mx Standard	3300 Mx Expanded	3300 Mx Server	3300 AX
10 / 100 / Gig Base T Ethernet ports	See CXi Controller Data connectivity section	2	2	2	2 (10 / 100 Base T only)
Maximum Dual DSP Modules	1	-	-	-	-
Maximum Quad DSP modules	1	3 (plus 2 integrated)	3 (plus 2 integrated)	3 (plus 2 integrated)	2
Maximum Echo Canceller Channels	64	128	128	256	128
Maximum G.729a compression channels (each 32 channels requires a DSP module)	16	32	64	64	32
Maximum number of NSU's	-	8	8	-	-
Maximum number of digital links (except BRI)	2	16	16	-	2
Maximum Embedded BRI interfaces (2 channels per interface)	8	12	12	-	4
Maximum number of Dual FIM modules	-	4	4	-	-
Dual FIM can be used to connect:	-	NSU, DSU, Peripheral Cabinets, Triple FIM card	NSU, DSU, Peripheral Cabinets, Triple FIM card	-	-
Analog Main Board <sup>1</sup>	6 LS trunks <sup>2</sup> 4 ONS ports	6 LS trunks 4 ONS ports	6 LS trunks 4 ONS ports	-	-
Analog Option Module	6 LS trunks 4 ONS ports	-	-	-	-
Analog Line card slots <sup>3</sup>	-	-	-	-	12
Maximum number of CIM connected ASU's	3	12	12	-	-
Maximum fiber connected peripheral nodes (with Peripheral expander)	-	6 (12)	6 (12)	-	-
Tone generators	128	128	128	-	128
Tone detector circuits	32	32	32	-	32
E2T Channels	64	64	128	256 <sup>4</sup>	128
DTMF Receivers	128	128	128	-	128
IP Networking – maximum IP trunks between controllers	200	200	200	200	200
IP Networking – total max IP trunks	2000	2000	2000	2000	2000
SIP trunking – total maximum SIP trunks	2000	2000	2000	2000	2000

<sup>1</sup> Includes Music-on-Hold (1 source supported), Paging (1 paging zone), System Fail Transfer (2 circuits)

<sup>2</sup> Analog trunks support CLASS Signaling for North America and Latin America

<sup>3</sup> The Analog Line card is available in two variants; the 16 ONS circuit card and the 4 LS trunks & 12 ONS extension card. Note the 4+12 Card supports 4 SFT circuits.

<sup>4</sup> Supporting conference, music on hold and paging functions only.

## Controllers con't.

	3300 CX / CXi	3300 MxEx Standard	3300 MxEx Expanded	3300 MxEx Server	3300 AX
SIP trunking – max SIP trunks between peers	400	400	400	400	400
Maximum controllers in a cluster <sup>1</sup>	250	250	250	250	250
STP & RSTP	Yes	Yes	Yes	Yes	Yes
Embedded Voicemail ports as standard	4	20	20	–	0
Maximum embedded voicemail ports <sup>2</sup>	16	30	30	–	20
Maximum mailboxes	750	750	750	–	750
Storage hours	450	450	450	–	70
Maximum messages per mailbox	100	100	100	–	100

<sup>1</sup> Up to 250 controllers can be clustered as a single system to support over 65,000 IP ports. Mitel's System Data Synchronization technology is used to enable feature transparency across a cluster of controllers.

<sup>2</sup> Requires DSP on CX, CXi, MxEx and MxEx Expanded and additional 4Gb flash drive on AX controller

### Mitel 3300 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, MxEx, AX Controller

#### 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

\* 802.11b access points must be SpectraLink SVP compliant

### SIP Trunking

- Supports G.711 and G.729 compression
- SIP Trunking license required for each SIP channel
- Supports RFCs
  - 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)
  - RFC 1321 – The MD5 message digest algorithm
  - RFC 2833 – RTP payload for DTMF digits, telephony tones and telephony signals (section 3.10)

### SIP Line Side

- Supports G.711 and G.729 compression
- SIP Line license required for each SIP device connection
- Supports RFCs
  - RFC 1321 – The MD5 message digest algorithm
  - RFC 2976 – The SIP info method
  - RFC 3261 – SIP Session Initiation Protocol
  - RFC 3262 – Reliability of provisional responses in SIP
  - RFC 3263 – Locating SIP Servers
  - RFC 3265 – Specific event notification
  - RFC 3311 – The Session Initiation Protocol update method
  - RFC 3515 – The Session Initiation Protocol refer method
  - RFC 3891 – The Session Initiation Protocol replaces header
  - RFC 4028 – Session timers in the Session Initiation Protocol
  - RFC 3680 – A Session Initiation Protocol event package for registrations
  - RFC 3842 – A message summary and message waiting indication event package SIP
  - RFC 2327 – SDP: Session description protocol
  - RFC 3264 – An offer / answer model with SDP
  - RFC 2833 – RTP payload for DTMF digits, telephony tones and telephony signals

### Digital Trunk Connectivity

#### Universal NSU (MXe Controller)

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

### R2 NSU (MXe Controller)

- 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 two NSUs per FIM link)

### Dual Embedded Digital Trunk Module (MXe / AX)

- 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 / AX Controllers)

- 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)

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

### Embedded BRI Module (CX / CXi / MXe / AX Controllers)

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

Each channel may be configured as either a:

- T (trunk) interface for links from a BRI Central Office (CO)
- 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.

**NOTE:** This module does not support U interfaces. In North America, we recommend the BRI NSU (NA) for such applications.

## TDM Connectivity

### Peripheral Cabinet

- Connects via FIM module, each module supporting two directly connected peripheral cabinets
- 12 peripheral interface cards per cabinet
- Max 192 analog or DNI ports
- Can add an expansion cabinet to a peripheral cabinet – 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)

## Dimensions

	3300 Controller	Analog Services Unit (ASU)	Network Services Unit (NSU)	Peripheral Cabinet
Height	CX / CXi / MXe / MXe Server – 3.5 in (8.9 cm) (2U) AX – 13.35 in (39.90 cm) (7U)	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	CX/CXi/MXe/MXe Server 17.75 in (45.1 cm) – 19" rack mountable AX – 17.4 in (44.20 cm)	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 / MXe Server – 20.25 in. (51.4 cm) AX – 13.87 in (35.23 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 (48.0cm)
Weight	CX / CXi – 19.8 lb (8.98 kg) MXe – 28 lb. (12.7 kg) MXe Server – 33 lb (15 kg) AX – 39.70 lb. (18.01 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 and ASU II)	Network Services Use (NSU)	Peripheral Cabinet
Temperature	40° to 122°F (4° to 50°C)	40° to 122°F (4° to 50°C)	40° to 122°F (4° to 50°C)	40° to 122°F (4° to 50°C)
Humidity	5%-95% relative humidity, non condensing	5%-95% relative humidity, non condensing	5%-95% relative humidity, non condensing	5%-95% relative humidity, non condensing
Max Heat Dissipation – fully loaded	CX / CXi –170 BTUs per hour MXe – 750 BTUs per hour MXe Server – 1000 BTUs per hour AX – 1024 BTUs per hour	ASU – 170 BTUs per hour ASU II – 260 BTUs per hour	60 BTUs per hour	724 BTUs per hour
Air Flow	46 cubic ft/min at maximum output of fans AX – 110 cubic ft			150 cubic ft/min at maximum output of fans
Acoustic Emissions	Max 50dBA continuous, 75dBA intermittent (<10% duty cycle)			Max 50dBA continuous, 75dBA 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 and ASU II)	Network Services Use (NSU)	Peripheral Cabinet
Input/Disconnect	IEC320-C14 Class 1 AC Receptacle 2 Receptacles on AX and MXe / MXe Server with redundant power	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 / 60 Hz	100-240 VAC 50 / 60 Hz	100-240 VAC 50 / 60 Hz	102-120 VAC 50 / 60 Hz MP914AA PSU Variant 200-240 VAC 50/60 Hz MP914AD PSU Variant
Input Power	CX / CXi 250 W MXe – 200 W MXe Expanded – 250 W MXe Server – 300 W AX – 300 W	ASU – 75 W max ASU II – 125 W max	Universal NSU – 20 W R2 NSU – 30 W	200 W typical (ONS and DNI Mix) 300 W typical (all DNI) 540 W Max (input surge, all DNI)
AC Source	90-264 VAC	90-264 VAC	90-264 VAC	102-132 VAC
Range	47-63 Hz	67-63 Hz	67-63 Hz	47-63 Hz MP914AA 187-264 Hz MP914AD

## 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/DDI	Direct Inward Dial/Direct Dial In
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
QSIG	Q – Signaling Protocol
RSTP	Rapid Spanning Tree Protocol
SIP	Session Initiation Protocol
STP	Spanning Tree Protocol
VM	Voice Mail
XNET	Switched Networking

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