MITEL

3300 | IP Communications Platform

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

Controllers

	3300 CX / CXi Controller	3300 MXe Standard Controller	3300 MXe Expanded Controller	3300 AX Controller
Maximum number of devices – including software agents	150	350	1,500	250
Maximum number of IP phones – includes SIP devices / users	100	300	1,400	100
Maximum number of analog phones	104	128 via ASUs 350 via Per cabinet	1,152	192
SIP users – maximum number of SIP devices	100	300	1,400	100
Shipped with (standard):	One dual DSP module (integrated), 12 echo cancellers, Two empty MMC slots	Two quad DSP modules (integrated), 128 echo cancellers, Five empty MMC slots	Two quad DSP modules (integrated), 128 echo cancellers, Five empty MMC slots	Two quad DSP module (integrated), Two empty MMC slots
Maximum embedded digital trunk modules	2*	3	3	1
Maximum embedded BRI modules (EMEA, Australia, CALA & NA)	2	3	3	1
Maximum ACD agents	50	100	350**	50 total**
Maximum consoles	8	8	24	1
10/100/Gig Base T Ethernet ports	See CXi Controller Data Connectivity section	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)	2
Maximum echo cancellation echo channels	64	128	128	128 With optional canceller card

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.

* Single embedded digital trunk module

** Engineering rules apply

Controllers con't.

	3300 CX / CXi Controller	3300 MXe Standard Controller	3300 MXe Expanded Controller	3300 AX Controller
Maximum G.729a compression channels (Every 32 channels requires a DSP module)	16 Optional	32 Optional	64 Optional	32 Optional
Max number of NSUs	0	8	8	0
Maximum number of digital links (except BRI)	2	16	16	2
Maximum number of dual FIMs(To connect to a TDM peripheral unit, NSU, DSU or Mitel SX-2000® MicroLIGHT triple FIM card)	0	4 Dual FIMs 8 FIM links	4 Dual FIM 8 FIM links	0
Maximum number of ASU or ASU II	3	12	12	4
Maximum number of fibre connected peripheral cabinets	0	6	6	0
Maximum number of peripheral cabinets – including expansion cabinets	0	12	12	0
Tone generators	128	128	128	128
Tone detector circuits	32	32	32	32
E2T channels	64	64	128	128
DTMF receivers	128	128	128	128
Embedded BRI module S and / or T interfaces (EMEA, Australia, CALA & NA)	8	12	12	4
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 maximum SIP trunks	2,000	2,000	2,000	2,000
SIP Trunking – max SIP trunks between peers	400	400	400	400
Maximum controllers in a cluster*	250	250	250	250
STP	Yes	Yes	Yes	Yes
RSTP	Yes	Yes	Yes	Yes

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 cabinets are connected there must be sufficient telecom resources to support them. Please contact your sales engineer for detailed information.

* 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.

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, MXe, AX Controller

Embedded Applications

Embedded Voice Mail

- MXe: 20 Auto Attendant or VM simultaneous sessions standard, expandable to 30 sessions
- CX / CXi: 4 Auto Attendant or VM simultaneous sessions standard, expandable to 16 sessions (requires additional DSP)
- AX: 0 Auto Attendant or VM simultaneous sessions standard, expandable to 20 sessions (requires 4Gig Flash card)
- 750 mailboxes (maximum)
- 450 storage hours (70 hours for the AX Controller)
- 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

* 802.11b access points must be SpectraLink SVP compliant

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.729 compression
- Total of 2,000 SIP trunk connections supported
- Up to 400 connections to any single peer
- 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 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 for 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

- 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

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

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.

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 two NSUs per FIM link)

Analog Connectivity*

AX Controller

12 Analog card slots

- Two line card variants:

  16 ONS Line Card
  4 LS + 12 ONS Combo Line Card

Supports combinations of:

192 analog CLASS stations (maximum 16 per ONS Line Card)

48 LS trunks (maximum 4 per Combo Line Card)

48 System Fail Transfers (maximum 4 per Combo Line Card)

Analog Service Unit II (ASU II)**

- Chassis with 2 line card slots
- Two line card variants: (same as AX Controller cards)

  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)

Embedded Analog (CX / CXi / MXe)

Analog Main Board

- Built into CX, CXi, MXe, Controllers

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

Analog Option Module (not available on MXe Controller)

- 1 optional per CX / CXi Controller

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

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

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 – 3.5 in (8.9 cm) (2U) MXe – 3.5 in. (8.9 cm) (2 U) 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	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 in rack mountable)	18.0 in (45.8 cm)
Depth	CX / CXi – 16.5 in (41.9 cm) MXe – 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) 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	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)	MXe – 750 BTUs per hour MX – 500 BTUs per hour CX / CXi – 170 BTU per hour AX – 1024 BTU per hour	170 BTUs per hour – ASU 260 BTUs per hour – ASU II	60 BTUs per hour	724 BTUs per hour
Air Flow	46 cubic ft / min at max output of fans AX – 80 cubic ft 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. 2 receptacles on AX and MXe 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 / 60Hz	100 – 240 VAC 50 / 60Hz	100 – 240 VAC 50 / 60Hz	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 AX – 300W	ASU – 75W maximum ASU II – 125W maximum	20W –Universal 30W – R2 40W – BRI	200W typical (ONS and DNI mixed) 300W typical all DNI 540W Max (input surge, al DNI lines)
AC Source Range	90 – 264 VAC 47 – 63 Hz	90 – 264 VAC 47 – 63 Hz	90 – 264 VAC 47 – 63 Hz	102 – 132 VAC 47 – 63 Hz MP914AA 187 – 264 VAC 47 – 63Hz MP914AD

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 (13mm2) to #14 (2mm2) 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
QSIG	Q – Signaling Protocol
VM	Voice Mail
XNET	Switched Networking

North America
Tel: (613) 592 2122
Fax: 1 800 648 3579

Latin America
Tel: +52 (55) 5261 4700
Fax: +52 (55) 5261 4700

UK
Tel: +44 (0)1291 430000
Fax: +44 (0)1291 430400

France
Tel: +33 (0)1 61 37 00 90
Fax: +33 (0)1 61 37 00 99

Benelux
Tel: +31 (0)30 85 00 030
Fax: +31 (0)30 85 00 031

Italy
Tel: +39 02 2130231
Fax: +39 02 21302333

Germany, Switzerland, Austria
Tel: +49 (0)211 5206480
Fax: +49 (0)211 52064899

Portugal and Spain
Tel: +34 91 490 5300
Fax: +34 91 490 5301

Middle East
Tel: +971 4 3916721
Fax: +971 4 3915288

South Africa
Tel: +27 11 275 2880
Fax: +27 11 275 2899

Asia-Pacific
Tel: +852 2508 9780
Fax: +852 2508 9232

South Pacific
Tel: +61 2 9023 9500
Fax: +61 2 9023 9501

www.mitel.com

GD 12432 PN 51008713RF-EN