



## Aastra MX-ONE™ Telephony System – Telephony Switch

» Built to keep your business moving ahead

The Aastra MX-ONE™ Telephony Switch is a fully IP-enabled communication system with state-of-the-art mobility features.

This system is a new part of the Aastra MX-ONE™ concept — the Aastra All-in-One Communication Solution for medium to large enterprises and builds on and inherits all features from the Aastra bestseller PBX, the MD110 Convergence Communication System.

Thanks to a unique distributed system architecture, the MX-ONE™ Telephony Switch can scale from 50 up to 50,000 users, supporting more than 500 users per self-dependant unit or LIM (Line Interface Module) in the system. Additional systems may be networked over IP—or traditional digital connections — to allow virtually unlimited scalability in a large network environment.

Users can choose freely between using one or several type of system terminals; IP, digital or analog fixed phones, DECT or WLAN cordless phones, or even public mobile/cellular terminals. In fact any type of public terminal can be fully integrated in the system using the popular Aastra Mobile Extension function. When using several terminals, the user may also be conveniently represented with one and the same number, by using new advanced features such as parallel ringing and single number indication.

The MX-ONE™ Telephony Switch system is delivered with the new-generation hardware for MX-ONE™, with the option of embedding the server-based unified messaging application, MX-ONE™ Messaging. Naturally, the MX-ONE™ Telephony Switch software can also be delivered as a simple upgrade to an existing MD110 Convergence Communication System.

# Unique Hybrid communication solution

The MX-ONE™ Telephony Switch fully supports the Aastra Dialog 4000 and 5000 telephone family, offering IP, digital and analog type of telephones, as well as the Aastra Cordless Telephones and any public mobile/cellular or fixed telephone using the Mobile Extension function.

The MX-ONE™ Telephony Switch offers analog and digital trunk interfaces to public networks (PSTN, PLMN), as well as support for a variety of network protocols: ISDN/QSIG, CAS, DPNSS and IP.

## Advanced IP networking

IP networking offers advanced services when networking with other MX-ONE™ Telephony Systems, BusinessPhones or Enterprise Branch Node (EBN). In combination with the MX-ONE™ Telephony Switch and the EBN offer cost-effective full-featured local survivability, local hop-off functionality for IP telephony based remote offices. They also offer support for local non-IP devices, for example for G3 fax providing fax over IP functionality. For remote sites not served with an EBN, the Aastra Digital Residential Gateway (DRG22), a compact 2-port IP gateway, can be used for connecting local faxes or analog phones over IP.

For further information about the capabilities of the EBN and the DRG22 solutions please refer to the respective datasheets.

## New-generation MX-ONE™ hardware

The MX-ONE™ Telephony Switch is built with new-generation MX-ONE™ hardware housed in Media Gateway Classic 19-inch subracks for smooth installation in IT environments and contains high capacity boards for IP, analog, digital and cordless/DECT telephony as needed. For IP telephony and IP networking, the new IP network interface provides state-of-the-art IP communications with full-feature support. And the new analog board provides the functionality needed for displaying calling numbers and names on analog phones that support this feature.

## Sophisticated features for IP telephony

An ingenious solution — fully integrated in the MX-ONE™ Telephony Switch system — makes it possible also to identify the origin of emergency calls (112 or 911) made from IP phones — anywhere — on the company network. Thus enabling information on the geographical location of the caller to be available to an emergency center. Additionally, an integrated software based routing server ensures easy setup and simple management of large IP based telephony networks.

## World-class features for mobile users

The basic feature set for the MX-ONE™ Telephony Switch includes advanced mobility and user centric features providing intelligent handling of users using several telephones. Such users are offered unique support by the MX-ONE™ Telephony Switch with features like Parallel Ringing, Single Number Indication, Enhanced Manager/Secretary Monitoring, Personal Number and Free Seating. Parallel Ringing for example, enables simultaneous ringing at incoming calls for up to 3 user telephones.

## Comprehensive application support

The MX-ONE™ Telephony Switch offers fully integrated operator/attendant and call center (ACD) functionality. It is also easily combined with the Aastra Solidus eCare™ Multi-Media Contact Center server-based solution for top-of-the-line customer care services.

When it comes to management applications, the MX-ONE™ Telephony Switch will be managed by the D.N.A. application suite — version 5.6 — to offer directory, extension and performance management (in other words, the D.N.A. applications Directory Manager, Extension Manager and Performance Manager).

For users connected to the MX-ONE™ Telephony Switch, the following will be available: D.N.A. user applications, such as Enterprise Communication Assistant — the web tool for telephony management, Enterprise Communication Client — an advanced PC softphone.

MX-ONE™ Messaging family offers voice mail, fax messaging and Unified messaging functionality with integration to back office e-mail applications.

For up to 2,000 users, MX-ONE™ Messaging voice mail is offered packaged in a server unit, fully embedded in the MX-ONE™ Telephony Switch sub rack.

A separate external server is therefore no longer required for systems with less than 2,000 users, greatly reducing the cost for unified messaging functionality.

Note that the MX-ONE™ Messaging fax mail application still requires PCI-slots and subsequently can only be installed on a separate server



# Highlights of the MX-ONE™ Telephony Switch

- Fully IP-enabled hybrid communication solution
- Build with new-generation MX-ONE™ hardware housed in 19-inch sub racks for IT environments
- Advanced mobility and user centric features included in basic system software: parallel ringing, single number indication, manager/secretary monitoring, free seating and personal number
- Single system scalability: From 50 to more than 50,000 users
- Network scalability: Up to 10,000 networked systems
- Support for fixed and cordless system terminals
- Support for public mobile/cellular and fixed terminals
- Support for all major types of public trunks and tie lines
- Support for display of calling numbers and names also on analog phones
- Integrated solution for location identification for emergency calls (112 or 911) from IP terminals
- Integrated routing server software for easy setup and simple management of large IP based telephony networks
- Optionally embedded server offering MX-ONE™ messaging voice mail or unified messaging for up to 2,000 users
- Supported by the D.N.A. application suite
- Easy upgrade available for existing MD110 customers

## Benefits

The MX-ONE™ Telephony Switch offers a reliable and fully IP-enabled hybrid solution, enabling customers to smoothly migrate towards a converged IP and mobile infrastructure, while still having full support for traditional telephony solutions.

IP-enabling a node in a network is a future-proof investment and allows cost reductions and seamless integration between sites using telephony over IP. This approach offers a variety of cost-efficient functions when using IP phones (lower administration costs for moves and changes) and Mobile Extension (control of mobile phone costs and added telephony functionality for mobile workers). For example IP networking used in combination with the least-cost routing functionality and one or several Enterprise Branch Nodes at branch offices, provide cost-efficient networking and reduced telecom costs through toll bypass.

Moreover, the 19-inch design practice enables easy installation in existing IT environments. Advanced features such as handling of emergency call and manager/secretary monitoring on IP phones are delivered fully integrated in the system and requires no external servers for operation. And traditional server-based Unified Messaging functionality is available in a cost-effective server solution fully embedded in system hardware.

The MX-ONE™ Telephony Switch offers seamless mobility solutions for all type of employees. The One Phone solution is fully supported and provides reduced overall telecommunication costs per user. For employees using several terminals, the user centric features will highly increase their accessibility and efficiency.

Existing MD110 customers may easily convert their system to a MX-ONE™ Telephony Switch through a simple upgrade. This step will allow them to capitalize on previously made investments and benefit from the new-generation MX-ONE™ hardware and software features.

## Technical Data

Capacity		
CAPACITY OF MX-ONE™ Telephony System – Telephony Switch	Maximum per LIM (Line Interface Module)	Maximum per system
Number of users	640	50,000
Number of LIM	–	124
IP extensions	640	50,000
Mobile extensions	640	16,000
Analog extensions	640	50,000
Digital extensions	640	50,000
Cordless/DECT extensions	640	50,000
CAS/WLAN extensions	640	26,000
Number of trunk/tie-line channels (Analog/T1/E1/H.323)	99/230/240/250	10,000

Dimensions	
Media Gateway Classic subrack (1 or 2 per LIM depending on configuration)	19" x 7 U
MX-ONE™ Telephony Switch Cabinet (option)	1800 mm x 300 mm

Power	
Media Gateway Classic subrack, 48 V DC (power consumption depending on configuration)	
AC/DC unit (option)	
Input :	110V ... 230Vrms
Output:	230V range: -54V / 15.7A - 850W 115V range: -54V / 9.3A - 500W

Environmental Conditions	
During operation	
Temperature:	+5°C – +40°C (41°F – 104°F)
Relative humidity:	20 – 80%
Forced cooling required and delivered with the system	

Regulatory Compliance	
EU RoHS directive 2002/95/EC	
More info: <a href="http://www.Aastra.com">www.Aastra.com</a>	

Analog Extension Line Data	
Current feed resistance	2x400 ohms, 48V
Loop resistance	1,800 ohms, including telephone
Recall button signaling	Timed break pulse or grounding single-speech wire
Calling Line Identification (CLI) signaling	FSK (number and name) or DTMF (number)

Digital Extension Line Data	
Two wires	
Line length 1,000 m (3,280 ft.)	

Transmission Data	
Market adaptable impedance and relative levels	
Coding $\mu$ /A-law PCM: According to CCITT G.711	
Crosstalk attenuation: According to CCITT Q.517	

Cordless DECT data	
GAP-CAP protocol	
Up to 90 base stations per LIM	
Up to 10,000 base stations per system	
Seamless handover across the system	
SMS and Alarm Messaging support	

VoIP Data	
Support for codecs:	G.711, G723.1, G.729a, G.729ab, RTP, IETF RFC 3550
Quality of Service:	packet prioritization/tagging TOS/DiffServ, IEEE802.1p&q
Ethernet Interface	10/100 Mbit (Autosense) H.323 V4
Direct Media — also across network connections	

Public Network Connectivity	
ISDN:	PRI and BRI with various market variants
Digital CAS:	various market variants with decadic, DTMF and MFC register signaling
Analog:	various market variants of Loop or Ground start with decadic, DTMF and MFC register signaling

Private Network Connectivity	
IP	
ISDN Q-SIG	
Dynamic Route Allocation	
DPNSS	
Digital CAS:	various market variants with decadic, DTMF and MFC register signaling
Analog:	Loop, E&M, 1VF. Various market variants with decadic, DTMF and MFC register signaling

Recycling	
The Media Gateway Classic hardware and subracks are recyclable. Please contribute to the prevention of waste by sending used equipment to environmentally certified treatment facilities. Aastra ensures environmentally sound handling and recycling of equipment sent to any one of our collection points.	

For more information please contact Opus Business Systems :  
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