



MG1010 Media Gateway Introduction

Notice:

This bulletin replaces bulletin 2010009993.1. This update has been issued to communicate some new information regarding the issue.

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Reissue Reason:

Adding minimum compatible release (rls 5.0) and minimum MGC loadware (AP01) information to the bulletin.

Background:

Nortel is pleased to announce the introduction of its MG1010 Media Gateway, which can be configured as part of a CS1000E VoIP Communications System. (This bulletin can also be found on the PIC under bulletin number P-2010-0005-Global)

The Media Gateway 1010 (MG 1010) is a rack mount Media Gateway chassis that provides a larger number of card slots than a MG 1000E with Media Gateway Expander. The CS 1000E Call Server can connect to and control a maximum of 50 MG 1010s. Each MG 1010 provides a dedicated MGC slot, two dedicated CP PM card slots, and ten slots for IPE cards. It can also be equipped with an optional redundant power supply. The MG 1010 is a single chassis that can provide more processing power and card capacity than a MG 1000E with Media Gateway Expander.

The MG 1010 is compatible with release 5.0 and later software for CS1000E systems using the MGC card. The MG 1010 media gateway does not support the Small System Controller (SSC NTDK20) card.

For more information about MG 1010, see Communication Server 1000E Planning and Engineering (NN43041-220 Rev 3.07) and Communication Server 1000E Installation and Commissioning (NN43041-310 Rev 3.05).

Note: Initial availability is restricted to USA, Canada, EMEA (Europe, Middle East and Africa) and specific CALA (Caribbean and Latin America) and AP (Asia Pacific) countries. See Availability section below.

Analysis:

MG 1010E Media Gateway Functional Overview

The MG 1010E is a new Media Gateway which can be used in CS 1000E systems. Its main purpose is to allow a higher number of circuit boards to be installed within a similar rack mount footprint. The gateway introduces a more robust design that allows for easier maintenance than the current MG 1000E chassis. Also, the two power slots provide power for CPPM call and signaling servers without consuming any of the IPE slots. The MG 1010E has several attributes that make it a favorable choice for most CS 1000E system configurations:

- > 10 IPE slots which can house the line, trunk and integrated applications cards compatible with the CS1000E.
- > 2 separate slots to provide power to CPPM server cards (freeing IPE slots)
- > Optional redundant, hot swappable power supply capable of load sharing
- > A new utility card to provide visual display of power/fan/message waiting voltage status and cable management.

> 3 field replaceable, hot swappable variable speed blower units.

(Control of the variable speed blowers requires AP01 or later loadware on the MGC card. MGC loadware can be found on the PEP website.)

MG 1010E Value Proposition

Enhanced business flexibility, deployment simplicity and scalability

- > MG 1010E is an effective gateway chassis for IP, hybrid or TDM solutions
- > Effective as a stand alone system or as a building block in a large or networked system deployments
- > May be configured as a stand alone TDM system where no IP is required
- > Reduced complexity of having a single building block with reduced footprint and lower power consumption.

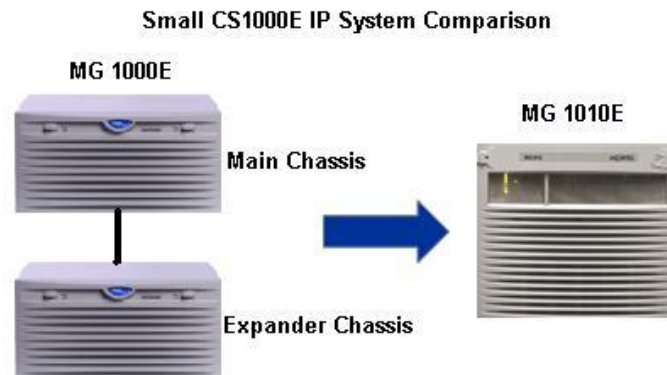
10 IPE slots in a 19 in. rack mount form factor allows for more effective footprint and facilitates migration of IPE cards from large system IPE Modules and Option 11C wall mount cabs and chassis.

- > 10 slots available per Media Gateway Cards and DSPs (versus 8 slots in existing gateways)
- > Dedicated CPPM power slots frees up IPE slots in main chassis
- > Result is a 25% increase in IPE capacity per Media Gateway and Controller (more effective DSP usage).
- > More cost efficient on a per IPE slot basis.

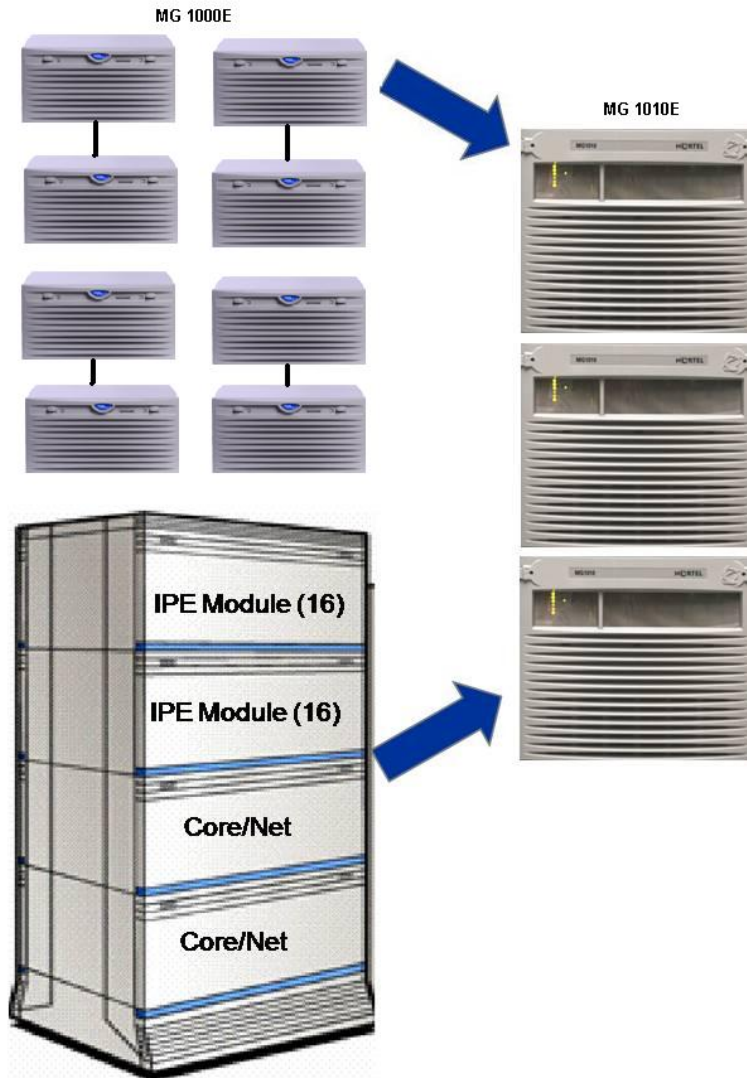
Added resiliency and field maintenance simplicity

- > Optional load sharing, redundant power supply adds redundancy for mission critical gateway installations.
- > Redundant, variable speed blowers ensure robustness and efficient power usage.
- > Power supplies and blowers are hot swappable for easy field replacement and maintenance.
- > Utility card allows visual system monitoring via LEDs
- > Improved cable management front and rear of the chassis.

MG 1010E Deployments



Large CS1000E or CS1000M SG Solution Comparison



MG 1010E Media Gateway Hardware Overview

The MG 1010E Media Gateway is a new standalone chassis which houses new and existing cards and is used as a building block for CS 1000E Systems Release 5 and up. The new gateway houses the CS 1000 Media Gateway Controller and its associated DSP daughterboards, as well as any card compatible with the current MG 1000E - 4 slot chassis in any of its 10 IPE slots (the NTDK16 - 48 port digital line card used in the Opt 11C mini chassis is not compatible with the MG 1010E chassis). The new chassis also has 2 dedicated slots each of which can power a CPPM call or signaling server card, avoiding the use up of an IPE slot for this purpose.

The MG 1010E Media Gateway also introduces new hardware which will be described in more detail further down. The new gateway consists of:

- > MG 1010 rack mount kit (NTC316AAE6)
- > Backplane assembly (NTC31002)
- > Media Gateway Utility (MGU) card (NTC314AAE6)
- > Power supply, maximum of two with load sharing (NTC312AAE6)

- > Blower fans, N+1 arrangement for redundant cooling (NTC320AAE6)
- > Air filter (NTC315AAE6)
- > Front cover with EMI containment and a window to view status LEDs
- > MG1010 serial cable kit (NTC325AAE6)
- > CPPM serial cable kit (NTC325BAE6)
- > MG1010 EMC shielding kit (for all CPPM configurations (NTC350AAE6)

It is recommended to use the CP PM card (NTDW99) and MGC card (NTDW98) in a MG 1010. The updated cards contain metal faceplates for enhanced EMC containment. Also, the AP01 or later loadware is required for the MGC card in order to implement blower speed control, otherwise the blowers will only run at full speed.

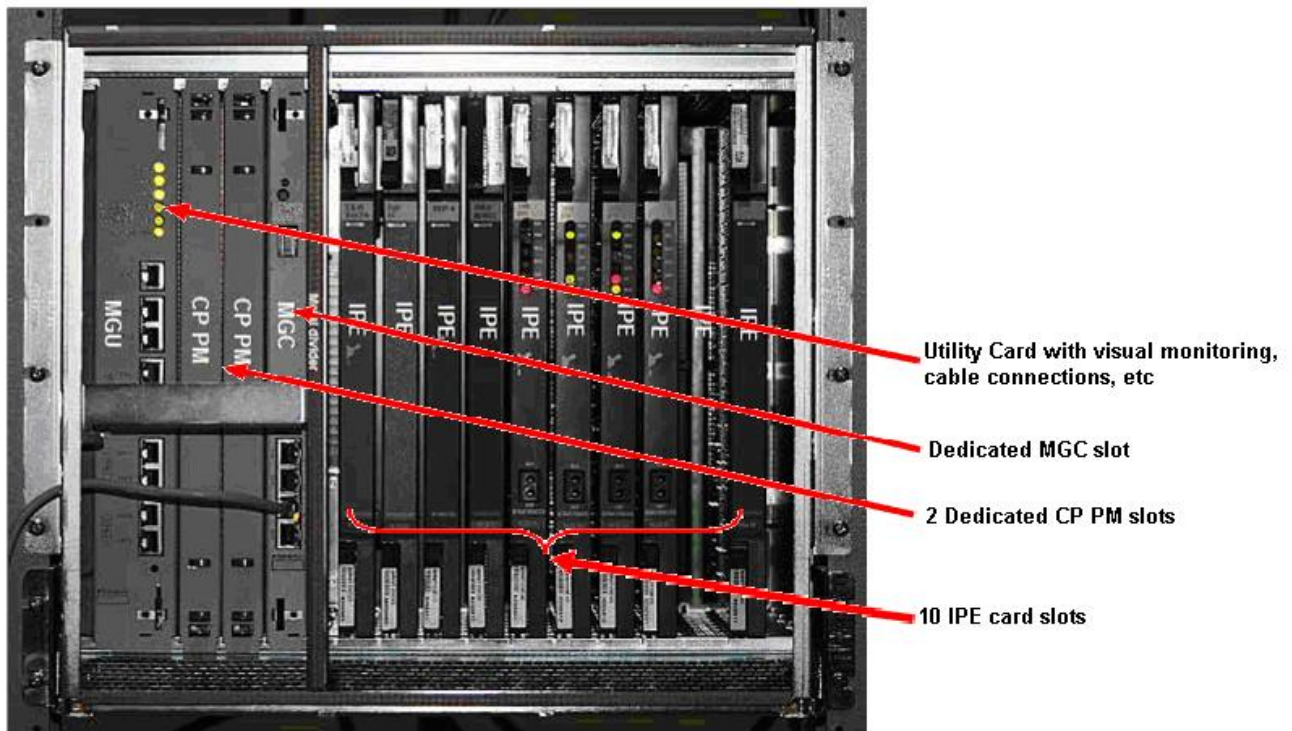
For more information about MG 1010, see Communication Server 1000E Planning and Engineering (NN43041-220 Rev 3.07).

Front Components

Media Gateway 1010 without the front cover. Note the following:

- > Ten IPE card slots
- > Two CP PM card slots
- > One MGC card slot
- > One Media Gateway Utility (MGU) card provides LED status, ringing, message waiting voltage, dual homing Ethernet cable ports, and serial cable ports
- > One metal divider in chassis to separate MGU, CP PM, and MGC from the IPE cards.

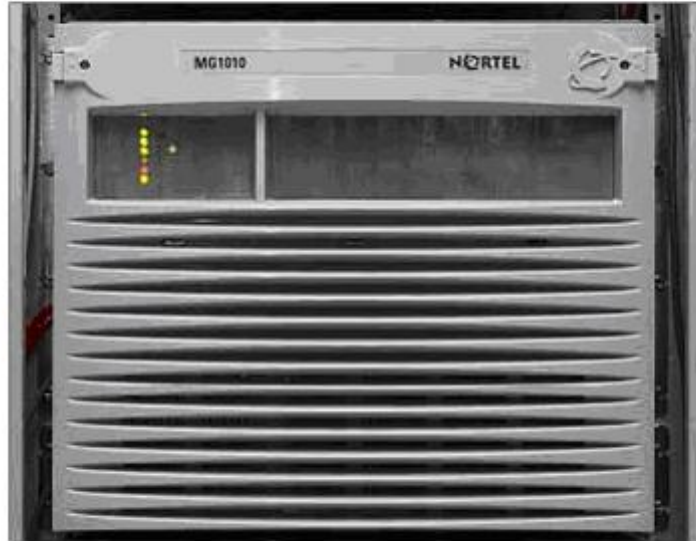
Front Components in the MG 1010E



MG 1010 with the front cover. Note the following:

- > Window to view LED status of all cards
- > Decorative cover provides additional EMC shielding

MG 1010E Front Cover



Rear Components

Media Gateway 1010 rear view. Note the following:

- > Hot swappable redundant power supplies
- > Hot swappable fans in a redundant N + 1 configuration for chassis cooling
- > One DECT connector
- > One AUX connector
- > Ten MDF connectors

Rear Components of the MG 1010E



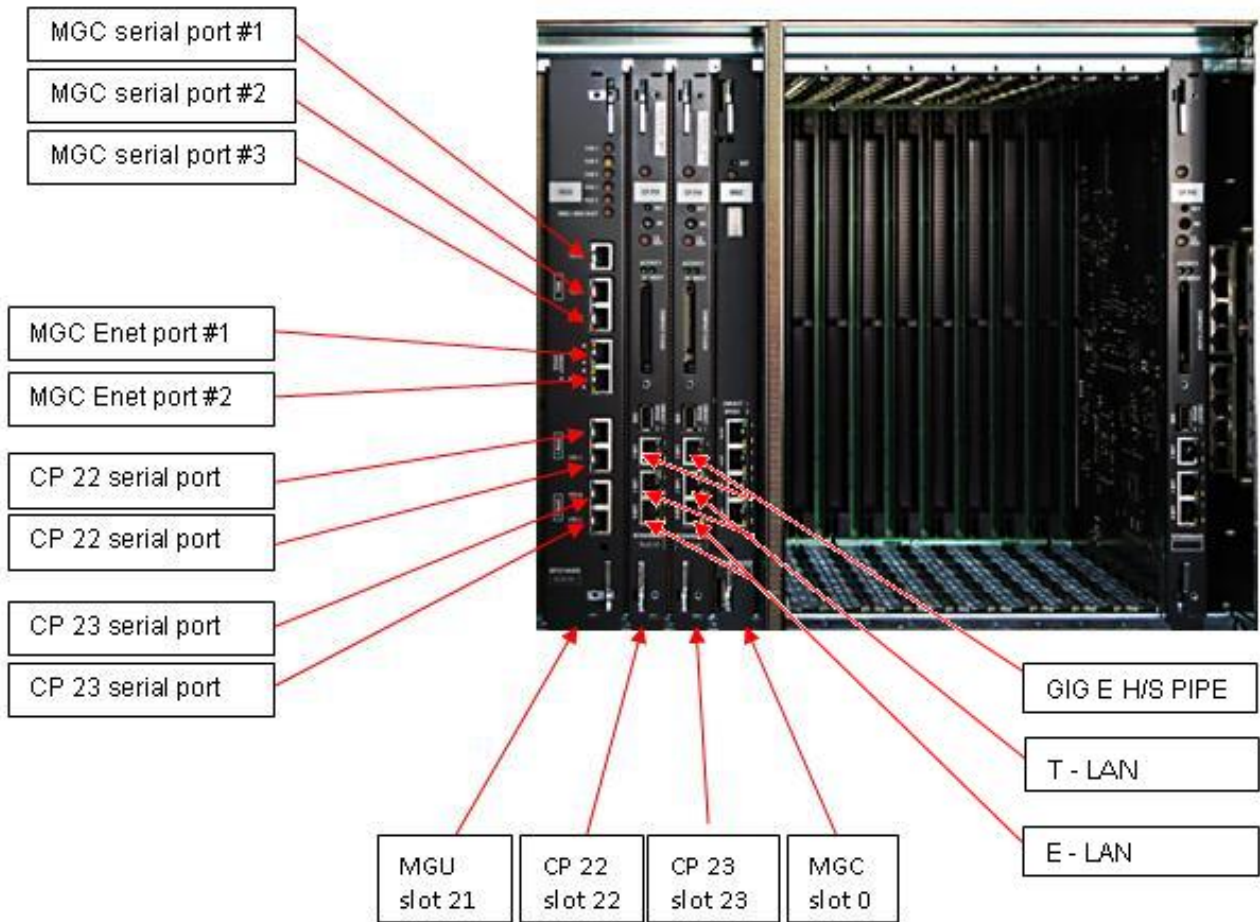
NTC350AAE6 - MG1010 EMC Shielding Kit

The NTC350AAE6 EMC Shielding Kit is required when the MG 1010 IPE slots are used exclusively to house 3 or more CPPM common processors. In this configuration, only CPPM processor cards are housed in the IPE slots of the MG 1010. The chassis and its processors become a server farm. The shielding kit aids in the control of EMC conducted along the face plate cables.

Cabling Requirements

This document provides the pinout specification for the Call Processor and Media Gateway Card (MGC) Serial Data Interface (SDI) ports provided on the MG1010 Media Gateway Utility (MGU) card. The MGU provides connectivity, via 8 pin RJ45 connectors following the TIA-561 pinout, to the three serial ports of the MGC inserted in slot 0 and to the two serial ports of each call processor card inserted in slots 22 and 23.

Figure 1: MG1010 Left Side Port and card Locations



MGU Cabling

The NTC325AAE6 cable kit includes one RJ45 to DB25 (male) adapter N0211606 which is intended to connect the MG1010 to a DCE device such as a modem, and two RJ45 to DB9 (female) adapters N0211605 which have an integrated null modem and are intended to connect the MG1010 to DTE devices such as a terminal or PC serial port. A standard UTP Ethernet cable of sufficient length must be supplied by the customer to connect the MGU to the appropriate adapter.

Pin definitions and connection details are provided for the DB25 adapter in Table 1 and for the DB9 adapter in Figure 2. The pinout for a standard DB9 RS-232 connector and for the MGU faceplate serial ports is listed in Table 1 for reference.

CPPM Cabling

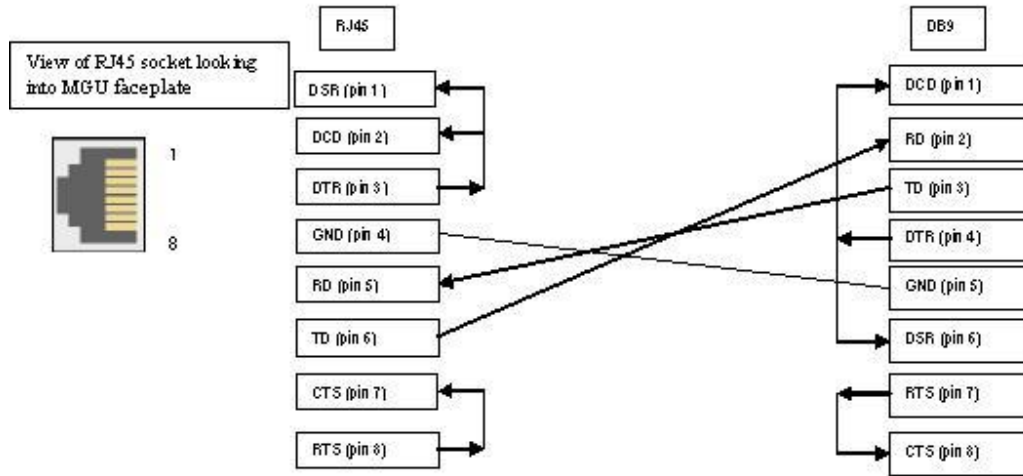
The NTC325BAE6 cable kit includes two RJ45 to DB9 (female) adapters N0211605 which have an integrated null modem and are intended to connect the CPPM cards when in the power slots on the left hand side of the MG 1010 chassis. When installing the CPPM card in any of the IPE slots of the MG 1010 or other chassis use the NTAK19ECE6 cable in the corresponding 50 pin connector in the rear of the chassis. Pin definitions and connection details are provided for the DB25 adapter in Table 1 and for the DB9 adapter in Figure 2.

The pinout for a standard DB9 RS-232 connector and for the MGU faceplate serial ports is listed in Table 1 for reference.

Table 1 Serial Data Interface Pin Descriptions

RJ45 Pin #	MGC SDI 1	MGC SDI 2 & 3	CP 22 & 23 SDI 1 & 2	N0211606 DB25 modem (DCE)	Standard DB9 serial port pin definition	Description (signal direction is from DTE's perspective)
	Signal	Signal	Signal	DB25 Pin #	DB9 Pin #	
1	nc	nc	DSR	6	6	Data Set Ready (in)
2	DCD	nc	DCD	8	1	Data Carrier Detect (in)
3	12V	nc	DTR	20	4	Data Terminal Ready (out)
4	GND	GND	GND	7	5	Ground
5	RD	RD	RD	3	2	Received Data (in)
6	TD	TD	TD	2	3	Transmitted Data (out)
7	nc	nc	CTS	5	8	Clear To Send (in)
8	12V	nc	RTS	4	7	Request To Send (out)

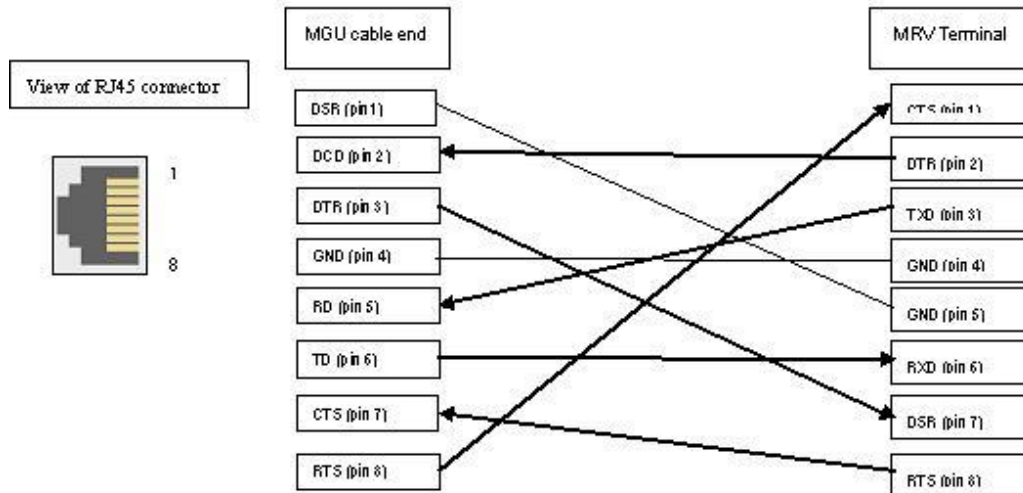
Figure 2: N0211606 DB9 Null Modem adapter (supplied in NTC325AAE6 cable kit)



Adaptor for MRV server

To connect the MG1010 to the MRV terminal server, an adaptor can be constructed (not provided in cable kit) based on the following wiring table.

Figure 3: RJ45-RJ45 adapter for MRV terminal server (not provided)



Recommendations:

Regional Availability

Initial availability is restricted to the following countries. Type approval into any other country will be announced via bulletin as localized type approval is received:

EMEA - Available in:

- > Andorra, Faeroe Islands, Gibraltar, Greenland, Holy See (Vatican), Iceland, Liechtenstein, Monaco,
- > Norway, R?union, Saint Helena, St Pierre et Miquelon, San Marino, Saudi Arabia,
- > Svalbard and Jan Mayen Islands, Switzerland, Turkey, Austria, Belgium, Bulgaria, Cyprus,
- > Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia,
- > Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia (Slovak Republic),
- > Slovenia, Spain, Sweden, United Kingdom.

North America

- > Canada
- > USA

Asia/Pacific

- > American Samoa, Bangladesh, Brunei, French Polynesia, Guam, India, Indonesia, Malaysia,
- > Pitcairn, Thailand, Wallis and Futuna Islands, Hong Kong, Macau, Taiwan, PRC (China)

CALA

- > Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Bermuda, Bolivia, Cayman Islands,
- > Chile, Columbia, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Falkland Islands
- > French Guiana, Guadeloupe, Guatemala, Guyana, Jamaica, Martinique, Montserrat, Panama,
- > Puerto Rico, Saint Barthelemy (St. Barts), Saint Croix, Saint John, Saint Kitts and Nevis,
- > Saint Martin, Saint Thomas, St Vincent & the Grenadines, Turks and Caicos Islands,
- > Uruguay, Virgin Islands (British), Virgin Islands (U.S.)

Ordering Information Package Codes

Order Code	
NTDU22EH	MG1000B CPPM 0L/0T (MG1010)
NTDU22LA	Media Gateway MG1010 Chassis
NTHU60DA	CS 1000E CPPM 0 Line 0 Trunk - High Availability (MG1010)
NTHU61DA	CS 1000E CPPM 0 Line 0 Trunk - Standard Availability (MG1010)
NTHU61HA	CS1000E TDM CPPM 0L/0T -MG1010
NTHU74AA	CS 1000B CPMG MG 1010 RIs 6

Merchandise Codes

NTC310AAE6	MG1010 Media Gateway Chassis
NTC31001E6	MG1010 Door Assembly
NTC312AAE6	MG1010 Power Supply
NTC314AAE6	MG1010 Media Gateway Utility (MGU)
NTC315ABE6	MG1010 Air Filter Assembly
NTC315ACE6	MG1010 Air Filter used on NTC315ABE6
NTC320AAE6	MG1010 Blower Module
NTC325AAE6	MG1010 Serial adapter kit (incl. aux cable)
NTC325BAE6	CPPM Serial adapter kit
NTC350AAE6	MG1010 EMC shielding kit (for an all-CPPM configurations)

Documentation

The MG 1010 is referenced in the updated collection of NTPs which can be found in the technical documentation section on the www.nortel.com <<http://www.nortel.com>> website. The latest collection is dated Jan 11, 2010. Updated NTPs include:

- Communication Server 1000E Overview (NN43041-110 Rev 3.04)
- Communication Server 1000E Planning and Engineering (NN43041-220 Rev 3.07)
- Communication Server 1000E Installation and Commissioning (NN43041-310 Rev 3.05)
- Communication Server 1000E Installation and Commissioning Branch Office (NN43041-314 Rev 3.09)
- Communication Server 1000E Upgrades Hardware (NN43041-464 Rev 3.06)
- Communication Server 1000E Maintenance (NN43041-700 Rev 3.15)

Required Actions:

N/A

Attachments:

There are no attachments for this bulletin

Products and Releases:

The information in this bulletin is intended to be used with the following products and associated releases:

PRODUCT	RELEASE
Enterprise VoIP-Core-CS 1000E	

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