

**MOTBRIDGE™
IP Interoperable
Solution**



Federal, state, and local agencies with widely differing systems can come together today with MOTBRIDGE™ IP Interoperable Solution. An easy and fast way to establish communications between disparate systems in support of emergency response and day-to-day operations, the bridges between systems are standing by 24/7, ready to be activated the moment they're needed.

The MOTBRIDGE™ Solution consists of the following products:

OPERATIONS MANAGEMENT CENTER (OMC) SERVER

One Operations Management Center (OMC) Server is required in each MOTBRIDGE Solution. The OMC server contains the user database and provides control, administrative functions, and network management tools, which are all used for user management, resource provisioning, and database management functions.

MAIN/REDUNDANT CONFIGURATION (OPTIONAL)

For applications where any system downtime is unacceptable, the OMC server is available in a hot-standby configuration. In this configuration, an identical server runs in parallel with the main one, ready to take over the database management.

SESSION INITIATION PROTOCOL (SIP) PROXY SERVER

One Session Initiation Protocol (SIP) Proxy server is required in each MOTBRIDGE Solution. The SIP Proxy server uses standard SIP protocol to manage the Voice over Internet Protocol (VoIP) audio connections. The SIP Proxy server that makes and breaks connections between the system's radio gateway units and their associated RF networks. In addition, it enables the connections of dispatchers to other dispatchers or to other RF networks.

MAIN/REDUNDANT CONFIGURATION (OPTIONAL)

For applications where any system downtime is unacceptable, the SIP Proxy server is available in a hot-standby configuration. In this configuration, an identical server runs in parallel with the main one, ready to take over management of the VoIP connections should the main SIP Proxy server be compromised. Existing talk-paths are maintained resulting in a seamless switchover to the redundant server.

**WORKSTATION GATEWAY UNIT /
DISPATCH APPLICATION**

For ease of maintenance, MOTBRIDGE Solution Gateway Units are based on a common hardware platform, which can be configured to serve as either a Radio Gateway Unit (RGU) or a Workstation Unit (WSGU) through a simple software selection. The hardware and software contained on each gateway device is identical and contains a robust set of features designed for mission critical communications, including on-board security (i.e. encryption) features and DSP processors utilizing a real-time operating system. A Dispatch application loaded on a PC, running Windows 2000/XP™, is used as a Graphical User Interface that will interact with the WSGU. All of the user's activities are translated to commands both to and from the WSGU. The GUI application will support remote radio connections, intercom connections, telephony, conferences, and radio patching capabilities.

RADIO GATEWAY UNIT

The Radio Gateway Unit (RGU) is used to connect various radio systems into the MOTBRIDGE Solution. The RGU is small and robust which makes it possible to be mounted at a remote tower site, at the master site, or in a small radio closet at the command center. Setup and configuration are made simple with the software tools provided. The intelligence and reliability built within the unit comes from the multiple processors that are task and priority responsive.



OPERATIONS MANAGEMENT CENTER (OMC) SERVER

- Holds system information that is distributed to authorized administrators and dispatchers based on their privilege levels. This information includes: The MOTOBRIDGE Solution user directory, the current active talk-paths, and detailed resource information such as resource attributes, resource operation and health status, resource active talk-paths, and resource dynamic parameters
- Provides a central location for management of system configuration and users (Add, Delete, Edit)
- Services up to 10 concurrent administrator control panel client applications
- Services up to 500 concurrent dispatcher client applications
- Manages up to 1000 concurrent soft-switched gateway units (RGU, WSGU)
- Provides a central point for system Audio-Encryption-Key load management
- Provides a central point for remote software download to a selected gateway unit, or to all gateway units; keeps images of last two gateway software versions
- Supports 8 Push-to-Talk priority levels and 9 user privilege levels
- Provides performance monitoring capabilities:
 - Bandwidth consumption per soft-switched gateway unit (WSGU, RGU)
 - Packet error rates, packet jitter per soft-switched gateway unit (WSGU, RGU)
 - Round-trip delay information per talk-path
- Provides centralized fault monitoring capabilities
- Available in Main/Redundant Configuration (Optional)

GENERAL SPECIFICATIONS

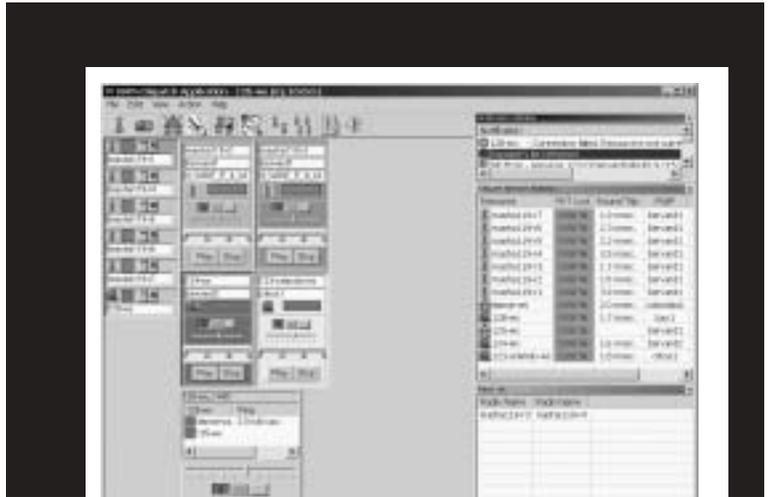
Processors	Intel® Xeon™ dual-processor 3.20GHz/2MB 533 FSB 2GB SDRAM	Input Requirements	
Operating System	Red Hat Enterprise Linux ES 3	Range Line Voltage	90 to 264 VAC
Storage Controller	Integrated dual channel wide-Ultra3 SCSI adapter	Rated Input Voltage	90 to 264 VAC
Controllers	Smart Array 642 controller with 64MB battery backed write cache (RAID) RAID 1 setting	Rated Input Frequency	47 to 63 Hz
Hard Drives	4 x 36.4GB pluggable Ultra320 SCSI 15,000 rpm universal hard drive (1")	Rated Input Current	7.3A (110V) to 3.6A (220V)
HP StorageWorks hot plug tape drive options	DAT 72 hot plug tape drive	Rated Input Power	800W
Floppy Disk Drive	1.44MB floppy disk drive	BTU Rating	2,732 BTU/HR
CD-ROM/DVD	48X CD-ROM drive	SCSI Connectors	Two internal HD68 connectors and one external VHDCI connector supporting Ultra3
Network Card	Compaq NC7781 PCI-X Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)	Power Supply Output	
Power Supply	Hot plug redundant power supply	Steady State Power	500W
Fan	Hot plug redundant fan	Maximum Peak Power	550W
Server Management	Integrated Lights-Out (iLO) management (ASIC on motherboard)	Temperature Range	
System Unit – Tower Dimensions	18.46 x 8.69 x 28 in (46.88 x 22.07 x 71.12 cm)	Operating	41° to 95°F (5° to 35°C)
Weight	70 lb (31.75 kg) (without hard drives, no RPS)	Shipping	–40° to 185°F (40° to 85°C)
		Relative Humidity (non-condensing)	
		Operating	5% to 95%
		Non-operating	5% to 95%

SESSION INITIATION PROTOCOL (SIP) PROXY SERVER

GENERAL SPECIFICATIONS

Processors	Intel® Xeon™ dual-processor 3.20GHz/2MB 533 FSB 2GB SDRAM
Operating System	Red Hat Enterprise Linux ES 3
Storage Controller	Integrated dual channel wide-Ultra3 SCSI adapter
Controllers	Smart Array 642 controller with 64MB battery backed write cache (RAID) RAID 1 setting
Hard Drives	4 x 36.4GB pluggable Ultra320 SCSI 15,000 rpm universal hard drive (1")
HP StorageWorks hot plug tape drive options	DAT 72 hot plug tape drive
Floppy Disk Drive	1.44MB floppy disk drive
CD-ROM/DVD	48X CD-ROM drive
Network Card	Compaq NC7781 PCI-X Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
Power Supply	Hot plug redundant power supply
Server Management	Integrated Lights-Out (iLO) management (ASIC on motherboard)
System Unit – Tower Dimensions	18.46 x 8.69 x 28 in (46.88 x 22.07 x 71.12 cm)
Weight	70 lb (31.75 kg) (without hard drives, no RPS)
Input Requirements	
Range Line Voltage	90 to 264 VAC
Rated Input Voltage	90 to 264 VAC
Rated Input Frequency	47 to 63 Hz
Rated Input Current	7.3A (110V) to 3.6A (220V)
Rated Input Power	800W
SCSI Connectors	Two internal HD68 connectors and one external VHDCI connector supporting Ultra3
Power Supply Output	
Steady State Power	500W
Maximum Peak Power	550W
Temperature Range	
Operating	41° to 95°F (5° to 35°C)
Shipping	-40° to 185°F (40° to 85°C)
Relative Humidity (non-condensing)	
Operating	5% to 95%
Non-operating	5% to 95%





WORKSTATION GATEWAY UNIT / DISPATCH APPLICATION

- Windows 2000/XP PC running the dispatch application
- Workstation Gateway Unit (WGSU)
- User Authentication (PTT priority)
- Dynamic setup and tear down or talk-paths: dispatch to radio, radio to radio, dispatch to dispatch, and conferencing
- 10 talk-path modules
- Audio summation with separate volume control for each talk-path module
- Supports Remote Control Head operations
- Audio Replay per module
- End-to-end audio encryption
- Configurable remotely or locally
- Able to upgrade S/W remotely
- All talk-paths are maintained even in the absence of SIP and OMC servers (but no new talk-path can be set up)
- Multiple vocorders allow for efficient use of bandwidth
- Uses Standards-based protocols
- Supports Emergency message transfer

DIMENSIONS

Height	1.75"
Width	Desk mount – 17" Wall/Rack mount – 19"
Depth	9.5"

ENVIRONMENT

Operating	0° to 50°C
Non-operating	-20° to 80°C
Humidity	10% to 90%

POWER

GU Input Power	+20 to +60 VDC, -20 to -60 VDC
Dispersion	20W

AUDIO

Mic	+10V, 2K Ω pull-up
Headset	
Input Impedance (Mic)	2K Ω
Output Impedance (Earpiece)	50 Ω
Speaker Output	600 Ω

COMMUNICATIONS / PORTS

2 RJ45 10/100Mb Ethernet Ports
1 DB9 MMI local configuration port
1 Speaker output
1 Headset Stereo/Mono connection
1 PTT connection



RADIO GATEWAY UNIT (RGU)

- Supports up to 8 audio ports
- Standard EIA 19" rack mount configuration
- Compact dimensions utilize site space efficiently
- Each external Radio-system can be linked (connected through a talk-path) to up to 7 parallel destinations (dispatch or radio-systems) in the MOTOBRIDGE Solution
- PTT priority among all talk-paths (including pre-emption) employed on PTT and audio Tx lines
- Rx audio and Tx-monitor audio distribution to all talk-path's destinations
- End-to-end audio encryption
- Configurable remotely or locally
- Able to upgrade S/W remotely
- All talk-paths are maintained even in the absence of SIP servers (but no new talk-path can be set up)
- All talk-paths are maintained even in the absence of OMC servers
- Multiple vocorders allow for efficient use of bandwidth
- Uses Standards-based protocols
- Supports Emergency message transfer

DIMENSIONS

Height	1 rack unit
Width	Desk mount – 17" Wall/Rack mount – 19"
Depth	9.5"

ENVIRONMENT

Operating	0° to +50°C
Non-operating	-20° to +80°C
Humidity	10% to 90%

POWER

GU Input Power	+20 to +60 VDC, -20 to -60 VDC
Dispersion	20W

RADIO

Output Voltage	-25dBm to +10dBm @ 600Ω
Output Impedance	600Ω
Input Voltage	20mV to 3V RMS @ 10K Ω
Input Impedance	600-10K Ω

COMMUNICATIONS / PORTS

8 DB25 Audio Ports
2 RJ45 10/100Mb Ethernet Ports
1 DB9 MMI local configuration port



Motorola's Commercial, Government and Industrial Solutions Sector is a recipient of the prestigious 2002 Malcolm Baldrige National Quality Award. This honor demonstrates our commitment to performance excellence and quality achievement.



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Specifications subject to change without notice.