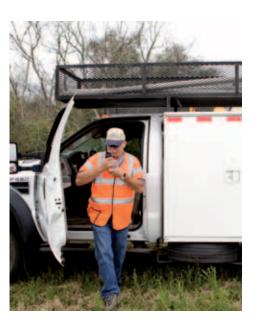# MOTOTRBO™ CONNECT PLUS

MULTI-SITE DIGITAL TRUNKING SYSTEM

What is MOTOTRBO Connect Plus?

MOTOTRBO Connect Plus multi-site digital trunking combines the best in two-way trunked radio with digital technology to provide reliable, high capacity voice and data communications over a large service area.

Connect Plus utilizes a control channel based architecture to efficiently manage high volumes of voice and data communication within a single site or across multiple sites and also offers key trunking features such as priority, queuing and dynamic site roaming. At the same time, Connect Plus leverages TDMA digital technology to deliver additional benefits including increased capacity, clear audio and integrated data application capability such as text messaging, GPS-based location tracking and dispatch console.

GENERAL

What's New In Connect Plus 1.2?

- Increased number of sites from 20 to 35.

- Enhanced selectable group scan list to include contacts from any zone to better stay in touch with what is happening in the field.

- Network Wide All Call allows XRT 9000 clients to place a network-wide one-way announcement call to all subscribers

- In urgent cases, the Emergency Alert over Control Channel feature alerts radio users of an emergency situation to quickly notify the right work teams.

Who are the target markets for Connect Plus systems?

Connect Plus is an operation-critical trunking solution for users in the utilities, public service, petro-chemical, transportation and other operations-critical markets requiring high capacity, wide area communication solutions.

How does Connect Plus fit within the MOTOTRBO solution?

The MOTOTRBO platform was developed and has continued to evolve to meet the specific needs of group oriented and dispatch environments. MOTOTRBO delivers the the ability to tailor a two-way radio solution into a conventional or trunked system to meet the needs of businesses.

Conventional: Ideal for users who have approximately 200 users or less operating at a single site.

IP Site Connect: With the ability to link up to fifteen (15) repeaters, IP Site Connect is ideal for users with approximately 200 users or less who need to operate across a wide area.

Capacity Plus: As a single-site trunking solution, Capacity Plus is ideal for customers with up to 1,200 users who need to operate at a single site.

Connect Plus: As a multi-site trunking solution, Connect Plus is ideal for customers who need communication for up to 2,900 users per site and need to operate across a wide area (up to 35 sites).

What are the primary differences between the Capacity Plus and Connect Plus digital trunking solutions?

Connect Plus utilizes a controller to efficiently manage voice and data communication on the system and delivers key trunking features such as priority, queuing and dynamic site roaming. With the use of one talk path as the dedicated control slot, Connect Plus provides 29 talk paths per site for voice and data communication, enabling up to 2,900 users to operate at each site. With operation at up to 35 sites, Connect Plus provides a wide area communication solution for users with a large mobile workforce such as utilities, public service, petro-chemical and transportation organizations.

Capacity Plus uses a dynamic home slot, rather than a dedicated control slot, and does not require the use of a controller to manage communication on the system. Accommodating as many as 1,200 users, Capacity Plus provides 12 voice or data paths and 24 additional dedicated data paths at a single-site. Capacity Plus is ideal for users with a large workforce who operate at a single-site facility such as those in manufacturing plants as well as entertainment and hospitality venues.

Both solutions deliver the benefits of TDMA digital technology including increased capacity, clear audio and integrated data applications.

What are the main components of a Connect Plus system?

The Connect Plus trunking system includes four major components:

1. **XRC 9000 Trunking Controller –** Manages site resources and real time processing of voice and data traffic.

2. **RF System –** Composed of MOTOTRBO XPR™ Series or MTR3000 repeaters and antenna distribution system designed to provide the RF coverage for radio users.

3. **Transport/Site Link System –** Composed of network equipment used to link the RF sites in a wide area configuration.

4. **Network Management System –** Monitors and manages all network system components. The Network Manager provides an interface to provision subscribers and talkgroups. In addition, it can be used to send the Connect Plus subscriber codeplug/personality over the air to a targeted subscriber. The software is inherent within the XRC 9000 controller. Please refer to the Connect Plus System Planner and your Motorola ACES team representative for pre-sale support and system design considerations.

5. **XRT 9000 Gateway –** Provides connectivity for authorized clients that are part of the Motorola Solutions Application Development Partner (ADP) Program to develop applications for the MOTOTRBO Connect Plus digital trunking system. Currently this gateway enables airtime billing and console applications.

In what frequency bands is Connect Plus available?

Connect Plus is available in all frequency bands – UHF Band 1 and Band 2, VHF and 800/900 MHz.

How many repeaters are supported per site in a Connect Plus system?

Connect Plus supports up to fifteen (15) repeaters which provide twenty-nine (29) talk paths per site to be used as voice or data resources. One talk path is reserved per site for control operation.

Does Connect Plus support multi-site operation?

Yes. Connect Plus supports up to thirty-five (35) trunking sites. Additional trunking sites will be supported in future system releases.

How do you link the various sites in a Connect Plus system?

Connect Plus uses IP (Internet Protocol) to interconnect the RF trunking sites. The Connect Plus IP network can be created using existing LAN s/WAN s, private microwave, spread-spectrum links or ISP's using standard 10/100 Base-T Ethernet switches and routers. Motorola recommends a private IP network. If links are required over the public IP network, proper security measures must be taken to secure the network from intrusion. Refer to the MOTOTRBO Connect Plus System Planner for IP network and bandwidth considerations.

Is there any networking equipment available from Motorola for Connect Plus systems?

Yes. Recommended IP Networking equipment includes:

DSJ9019B Hewlett-Packard ProCurve Switch 2510-24 (J9019B) - 24 ports

DSHPJF283A HPA-MSR20-20 Multi-Service Router (JF283A)

Please refer to Motorola Online and your Price Book for ordering information.

Is Connect Plus compatible with other MOTOTRBO modes of operation?

MOTOTRBO subscribers can operate in a Connect Plus trunking system and in the same radio, support MOTOTRBO digital operation in Conventional, IP Site Connect or Capacity Plus systems.

XRC 9000 TRUNKING CONTROLLER

What is the main function of the Connect Plus XRC 9000 Trunking Controller?

The XRC 9000 controller is the central equipment in each site of a Connect Plus trunking system. It is designed to manage site resources and real time processing of voice and data traffic. The XRC 9000 controller also manages all subscriber privileges in the system.

How do you order the Connect Plus XRC 9000 Trunking Controller?

The XRC 9000 Connect Plus controller is available in a single site configuration (model TT2213A) and a multi-site configuration (model TT2215A). A XRC 9000 field upgrade from single to multi-site (TT2214A) is also available to order. Please refer to your Reseller Price Book for ordering information.

What is the standard warranty for the Connect Plus XRC 9000 Trunking Controller?

The standard warranty for the Connect Plus XRC 9000 Controller is two (2) years.

XRT 9000 GATEWAY

What is the main function of the Connect Plus XRT 9000 Gateway?

The XRT 9000 Gateway is an optional component of the MOTOTRBO Connect Plus digital trunking system. XRT 9000 is designed to perform protocol translation for equipment and applications wishing to interact with the Connect Plus system. The XRT 9000 is an Internet Protocol (IP) based device that allows connectivity from authorized clients that are part of the Motorola Solutions Application Development Partner (ADP) Program.

REPEATERS

What repeaters are supported in a Connect Plus system?

Connect Plus supports the MOTOTRBO XPR 8300 (VHF/ UHF) and XPR 8380 (800/900 MHz) repeaters as well as the MTR3000 (VHF, UHF, 800/900 MHz) repeater. Please refer to your Reseller Price Book for ordering information.

What are the requirements for the MOTOTRBO XPR 8300 / XPR 8380 and MTR3000 repeaters to operate in a Connect Plus system?

The MOTOTRBO XPR 8300 / XPR 8380 repeaters require firmware version 1.08.12 or higher. The MTR3000 repeater requires firmware version 1.08.12 or higher. An external power amplifier may be required for XPR repeaters depending on the particular system application. Please consult your Motorola ACES team representative for design support.

SUBSCRIBERS

Are new subscriber units required for Connect Plus operation?

No. All current MOTOTRBO digital subscribers can support Connect Plus operation when equipped with the proper hardware and software.

What are the subscriber hardware and software requirements for Connect Plus operation?

MOTOTRBO subscribers equipped for Connect Plus operation require the following:

1. MOTOTRBO digital firmware release 1.08.32 or higher.

2. MOTOTRBO expansion card (Generic Option Board).

3. Connect Plus software.

4. Connect Plus software license.

5. Optional man-down software license.

Note: MOTOTRBO mobile models shipped prior to Q2 2008 do not support the expansion card; please contact Motorola Customer Service at 1-800-422-4210 for details as to how to upgrade these units.

How do I order new MOTOTRBO subscribers for Connect Plus operation?

New (FM and non-FM) Connect Plus subscribers are ordered using the same nomenclature as current MOTOTRBO models and adding a Connect Plus radio option (QA02005 for portables and QA00588 for mobiles) that will:

1. Ensure the MOTOTRBO radio is shipped with digital firmware release 1.08.10 or higher.

2. Equip the radio with the MOTOTRBO expansion card.

3. Install the Connect Plus software.

In addition, you must order separately a Connect Plus Software License (HKLN 4457A) for each subscriber unit. You can also order an optional man-down subscriber license (HKVN4072A) for each subscriber unit. The order of this license will trigger the generation of an Entitlement ID (EID) that will be required for you to activate the Connect Plus software licenses. Please refer to your Reseller Price Book for ordering and license activation information.

Are Connect Plus subscribers available with the Intrinsically Safe (IS) option?

Yes. MOTOTRBO Connect Plus subscribers are available from the factory with the Intrinsically Safe option when ordered with the proper battery option (QA00366). The radios will be labeled as FM and CSA Approved in accordance with Canada and US Codes as intrinsically safe for use in Class I, II, III, Division 1, Groups C, D, E, F, G, and Class I Division 2, Groups A, B, C, D.

In addition, the XPR 6580 IS radio is also available in 800/900 MHz for use on Connect Plus digital trunking systems in Canada. The radio, when properly equipped with the battery NNTN7789A, is certified for permitted use for Ex ib IIC T4, Class II, Groups E, F, G and Class III, and DIP A21 TA 110° C.

How do I upgrade existing MOTOTRBO digital subscribers to Connect Plus operation in the field?

The following requirements must be met when upgrading MOTOTRBO (non-FM) digital subscribers in the field to operate in a Connect Plus trunking system:

1. MOTOTRBO Subscriber firmware R1.06.30 or higher. Firmware R1.08.10 is now available for download in Motorola Online.

2. MOTOTRBO Expansion Card.

An expansion card (model PMLN5496AS) needs to be installed in the subscriber unit. Mobiles units require the Mobile Option Board Interface Kit (model HLN7001A) to install the expansion card in the field.

Notes:

- MOTOTRBO Subscriber Service Manuals include detailed instructions and requirements to install expansion cards.

- Does not apply to the 800/900 MHz MOTOTRBO digital subscribers since they already include the expansion card standard from the factory.

3. Connect Plus Software.

Connect Plus software needs to be installed in the expansion card. Software and installation instructions are available for download on Motorola Online > Resource Center > Software > Two Way > MOTOTRBO > Connect Plus Trunking.

4. Connect Plus User License.

A Connect Plus field license (HKLN4457A) must be ordered. The order of this license will trigger the generation of an Entitlement ID (EID) that will be required for you to activate the Connect Plus software licenses. Please refer to your Reseller Price Book for ordering and license activation information.

How do I upgrade existing MOTOTRBO 800/900 MHz units running the SMARTNET®/Privacy Plus™ software to Connect Plus operation?

MOTOTRBO 800/900 MHz radios running the analog SMARTNET/Privacy Plus software must be upgraded first to MOTOTRBO digital operation. Please refer to your Reseller Price Book for more information.

Once the radios are upgraded to digital mode, all steps in the section above will apply except the installation of the expansion card (Step 2) since the 800/900 MHz

SMARTNET/Privacy Plus units include the MOTOTRBO expansion card standard from the factory.

How do I program Connect Plus subscribers?

Connect Plus subscribers are programmed using the same MOTOTRBO CPS version 6.8 or higher. In addition, the new MOTOTRBO Connect Plus option board CPS is also required and is available on the Motorola Online Resource Center at no charge.

Are new programming cables required for Connect Plus subscribers?

No. Connect Plus uses the same programming cables used today in MOTOTRBO subscribers and repeaters

APPLICATIONS

What applications are available in Connect Plus systems?

The following 3rd party applications are available in the initial launch of the Connect Plus system:

- **neoConneX** – NeoTerra™ Systems. http://www.neoterra.ca

Provides Client/Server, Web Client support for GPS Location Services, Text Dispatch, Email Gateway and Presence applications.

- **Scout™ VoIP Dispatch Wire-line Console** – Avtec, Inc. http://www.avtecinc.com

Scalable VoIP wire-line console system that provides dispatchers a greater level of control and dispatch management of the Connect Plus trunking system.

Additional applications will be available in future releases as developers modify or create new applications for Connect Plus operation. Please refer to the Connect Plus System Planner and your Motorola ACES team representative for pre-sale support and system design considerations.

Please request a quote from Motorola ACES for the Avtec Scout on Connect Plus using the form posted on MOL. Email the completed completed form to indirectsystems@motorolasolutions.com.

The GW3-TRBO is an enhanced system & performance management tool for MOTOTRBO systems created by The Genesis Group. GW3-TRBO allows monitoring, managing, archiving, reporting, and notifications on Connect Plus MOTOTRBO systems. This system management software allows users to easily view and monitor live traffic, report and notify on system and subscriber activity, and manage system resources.

How do you order Connect Plus applications?

Connect Plus applications can be ordered by contacting the specific application provider.

LITERATURE

What Connect Plus marketing materials are available and where can I find them?

The Connect Plus system brochure, sales presentation, video, go-to-market materials and the XRC 9000 Trunking Controller specifications sheet can be found on Motorola Online > Print on Demand > Literature > Two-way Radios > MOTOTRBO > Connect Plus.

Is there a System Planner available for MOTOTRBO Connect Plus systems?

Yes. The MOTOTRBO Connect Plus system planner is available on Motorola Online > Resource Center > Product Information > Manuals > MOTOTRBO > Connect Plus Trunking.

WARRANTY / TECHNICAL SUPPORT

How do I get pre-sale technical support for designing Connect Plus systems?

Pre-sale technical design support for Connect Plus systems can be obtained by contacting your ACES team representative.

How do I get technical support for Connect Plus systems?

General pre-sale questions and post-sale technical support for Connect Plus are available by calling Motorola Customer Service at 1-800-422-4210.

TRAINING

How do I obtain training for Connect Plus systems?

Worldwide Learning Services (WLS) is developing a training course for channel partners on the new Connect Plus trunking system: MOTOTRBO Connect Plus Technical Overview - TBO350-V.

WLS is also updating existing MOTOTRBO service, data applications, and radio programming training courses to include Connect Plus trunking system content. More information is available by calling 847-538-7999 or visiting online at: www.motorola.com/Business/US-EN/Training+Home

*MOTO***TRBO**™
DIGITAL REMASTERED.

MOTOROLA