



SmartPTT PLUS 9.13

System Requirements

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Introduction

SmartPTT-based dispatch system can include several dispatch consoles, SmartPTT Radioservers and communication channels connecting them. Thus, technical requirements are related to the following system components:

- SmartPTT Dispatcher
- SmartPTT Radioserver Configurator
- Communication channels connecting SmartPTT Dispatcher and SmartPTT Radioserver, and communication channels connecting SmartPTT Dispatcher, MOTOTRBO repeaters, and control stations.

Number of the required components can increase. This depends on the product type and required functionality.

Minimum System Requirements for SmartPTT Dispatcher

Software Requirements

SmartPTT Dispatcher can be installed and used on Windows computers only.

OS Family	Version
Windows 11	Pro (64 bit)
Windows 10	Pro version 1909 or later (64 bit)
	Enterprise 2016 LTSB (64 bit)
Windows 8.1	Windows 8.1 (64 bit)

NOTE
Windows 8.1 must have the latest updates or the KB 2919355 update. For details, see [Microsoft Support information](#).

NOTE

To ensure operating system security and SmartPTT stable operation, it is recommended to install the latest Windows updates.

Hardware Requirements

Processor:	Intel® Core™ i5 (7th generation or higher) for systems with less than 3,000 subscribers.
	Intel® Core™ i7 for systems with more than 3,000 subscribers or activated GPS/Monitoring/Indoor services.
Memory (RAM):	4 GB for systems with less than 3,000 subscribers.
	8 GB for systems with more than 3,000 subscribers or activated GPS/Monitoring/Indoor services.
Storage:	7200 rpm SATA drive.
	20 GB space for software and database.
Graphics adapter:	1 GB RAM PCI-E or similar CPU-integrated for systems with voice transmission only.
	2 GB RAM PCI-E or similar CPU-integrated for systems with activated GPS/Monitoring/Indoor services.
Monitor:	display size: 23"
	screen resolution: 1366 × 768 px
	color depth: 16 bit
Input/output ports:	1 input port per input device or Human Interface Device (HID).

Minimum System Requirements for SmartPTT Dispatcher

1 analog audio output per playback device (speaker or headset).

1 audio input per microphone.

Sound adapter: Multichannel sound adapter.

Audio recording device: A microphone or a headset.

Playback device: Headphones or a headset.

LAN: 10/100/1000 Mbps Ethernet adapter.

Pointer: A mouse or a trackball.

Keyboard: A standard keyboard.

NOTE

These are standard system requirements for SmartPTT Dispatcher. They can change depending on the configuration, complexity and/or workload of the system.

NOTE

We have experienced issues with USB ports on Dell PCs that cause audio peripherals to disconnect. For this reason we recommend installing SmartPTT on HP or other brands of PCs.

Minimum System Requirements for SmartPTT Radioserver

Software Requirements

SmartPTT Radioserver can be installed on Windows computers only.

OS Family	Version
Windows 11	Pro (64-bit)
Windows Server	Windows Server 2019
	Windows Server 2016
	Windows Server 2012 R2
Windows 10	Pro version 1909 or later (64-bit)
	Enterprise 2016 LTSB (64-bit)
Windows 8.1	Windows 8.1 (64-bit)

NOTE

Windows 8.1 must have the latest updates or the KB 2919355 update. For details, see [Microsoft Support information](#).

NOTE

To ensure operating system security and SmartPTT stable operation, it is recommended to install the latest Windows updates.

Hardware Requirements

Processor:	Intel® Core™ i5 (7th generation or higher) for systems with less than 3,000 subscribers.
	Intel® Core™ i7 for systems with more than 3,000 subscribers or activated GPS/Monitoring/Indoor services.
Memory (RAM):	4 GB for systems with less than 3,000 subscribers.
	8 GB for systems with more than 3,000 subscribers or activated GPS/Monitoring/Indoor services.
Storage:	7200 rpm SATA drive.
	40 GB space (software and database only).
	190 GB space (software, database, and voice records).
Input/output ports:	1 USB port per connected USB device (mouse, speaker, etc.)
	<i>(Optional)</i> 1 analog audio output per speaker
	<i>(Optional)</i> 1 analog audio input per microphone

LAN: 10/100/1000 Mbps Ethernet adapter.

NOTE

These are standard system requirements for SmartPTT Radioserver. They can change depending on the configuration, complexity and/or workload of the system.

NOTE

We have experienced issues with USB ports on Dell PCs that cause audio peripherals to disconnect. For this reason we recommend installing SmartPTT on HP or other brands of PCs.

Networking Requirements

Network Quality

Computer networks where SmartPTT is installed and used, must comply with the following requirements:

Parameter	Value
Packet Loss	Slightly distorted voice: 0.0–2.5 %
	Distorted voice: 2.5–15.0 %
Two-Way Delay	Radio network connection: 0–90 ms
	PBX connection: 0–60 ms
Jitter	Radio network connection: 0–90 ms
	PBX connection: 0–60 ms

IP access to the radio network means the connection to hardware/software solution that provides access to the radio network:

- Connection to the RG-1000e or RG-2000 device.
- Connection to repeaters:
 - Master repeater (for voice calls and monitoring).
 - Other repeaters (for monitoring).
- Connection to a computer with a MNIS Data Gateway Relay application.
- Connection to a computer with Device Discovery and Mobility Service (DDMS).
- Connection to the XRC controller (Connect Plus).
- Connection to the XRT gateway (Connect Plus).
- Capacity Max System Server (CMSS) connection.

NOTE

Motorola radio hardware may have more specific requirements for the above parameters. For this information, refer to the respective hardware documentation.

Bandwidth Requirements

Computer networks where SmartPTT is installed and used must provide specific bandwidth between the computer with SmartPTT Radioserver and the other IP devices of the dispatch system. All following requirements are applicable to one-way transmissions.

Voice transmission

All following requirements are applicable to a single voice stream.

Source/Target	Minimum	Comments
SmartPTT Dispatcher application	13 kbps	For DMR vocoder

Source/Target	Minimum	Comments
	100 kbps	For G.711 vocoder
RG-1000e/RG-2000 radio gateway	from 65 kbps	Exact value depends on vocoder parameters
Master repeater	20 kbps	
XRT Gateway	20 kbps	Applicable to Connect Plus only
Capacity Max System Server	20 kbps	
PBX	65 kbps	For G.729 or Speex vocoders
	100 kbps	For G.711 vocoder
Applications that use SmartPTT WebSocket	from 65 kbps	For each of the following applications: <ul style="list-style-type: none"> SmartPTT Web Client SmartPTT Mobile Third Party app over SmartPTT Server API Exact value depends on vocoder parameters.

Required bandwidth should be increased if you use the bridging, cross patches, conference calls, or voice communication between dispatchers. For details on increased bandwidth, contact Elcomplus, Inc. representative in your region.

If you have an alternate/redundant SmartPTT Radioserver, the bandwidth to that computer must comply with the synchronization settings between the main and redundant servers.

Voice traffic between SmartPTT Dispatcher applications (the Dispatchers feature) is not sent to SmartPTT Radioserver. To provide this feature, the bandwidth between dispatcher computers must be 65 kbps or more per each configured contact.

Data transmission

In SmartPTT, data transmission includes text messages, indoor and outdoor location, telemetry information and control commands.

Source/Target	Minimum	Comments
SmartPTT Dispatcher application	3.5 kbps	For Enhanced CSBK location data from 10 subscribers and location update period 7.5 s
Master repeater	20.0 kbps	For each repeater without a revert channel
	45.0 kbps	For each repeater with a revert channel
Remote MNIS host	20.0 kbps	For each repeater without a revert channel
	45.0 kbps	For each repeater with a revert channel
XRC controller	20.0 kbps	For each repeater without a revert channel
	45.0 kbps	For each repeater with a revert channel

Source/Target	Minimum	Comments
Avigilon server	3150 kbps	<p>For each camera.</p> <p>This value is obtained based on the following conditions:</p> <ul style="list-style-type: none"> Resolution is 1920 x 1080. FPS is 25. Service packets in stream no more than 5% of the video stream. <i>H.264 Base codec - medium quality.</i> Average dynamics of the image change.

Bandwidth must be increased if you activate and use the Bridging feature in SmartPTT Radioserver, create a cross patch, or organize a conference call.

If you have a redundant SmartPTT Radioserver, the bandwidth to that computer must comply with the synchronization settings between the main and redundant servers.

Monitoring service

Source/Target	Minimum	Comments
SmartPTT Dispatcher application	42 kbps	For each configured repeater if the Monitoring panel is closed
	45 kbps	For each configured repeater if the Monitoring panel is opened
Repeater	42 kbps	For each configured repeater

Support and Compatibility

MOTOTRBO Infrastructure

SmartPTT 9.13 has been tested and found compatible with the MOTOTRBO firmware and software listed in the table below.

WARNING

Different MOTOTRBO firmware and software versions may not be mutually compatible. For information on MOTOTRBO products compatibility, contact Motorola Solutions representatives in your region.

Firmware/Software	Version	Comments
Subscriber radio Firmware	M2022.02	
	M2022.01	
	M2021.04	
Repeater Firmware	M2022.02	
	M2022.01	
	M2021.04	
Control Station Firmware	M2022.02	
	M2022.01	
	M2021.04	
MOTOTRBO Network Interface Services Software (MNIS)	M2022.02	Provides data transmission in IP Site Connect, Capacity Plus, and Linked Capacity Plus
	M2022.01	
	M2021.04	
Device Discovery and Mobility Service Software (DDMS)	03.100.5001	Provides radio registration information in IP Site Connect, Capacity Plus, and Linked Capacity Plus
XRC and XRT Firmware	R02.80.XX	Connect Plus only
Capacity Max System Server (CMSS) Firmware	M2022.02	
	M2022.01	
	M2021.04	

Additional information on infrastructure:

- Within the radio system, all repeaters, subscriber radios and control stations should use the same or compatible firmware versions.
- If you activate the Bridging feature, you should bridge only the radio fleet objects which are associated with the same or compatible firmware versions.
- Access and operation in radio systems for SmartPTT require separate licensing.

Elcomplus Products

SmartPTT is compatible with the following Elcomplus, Inc. products:

Product	Version	Comments
Radio gateway RG-1000e	R3.X	Current version of firmware used on the device for control station remote connection and operation.
	R2.2	Previous version of firmware used on the device.
Radio gateway RG-2000	Any version	Version of firmware used on the device for control station remote connection and operation.

Third Party Products

SmartPTT is compatible with a range of third-party products. Below you will find a list of hardware and software products that proved to be compatible with the SmartPTT applications.

Database Management Systems

SmartPTT uses Microsoft SQL Server as a database. The following versions are supported:

- Microsoft SQL Server 2022
- Microsoft SQL Server 2019 Express
- Microsoft SQL Server 2019 Enterprise

For information on use of other Microsoft SQL Server versions and editions, submit a request to [SmartPTT Technical Support Center](#).

Option Boards

- Connect-RTLS RF800 (BluFi Wireless).
- K-TERM 44 (Kilchherr Elektronik AG).

Beacons

- Connect-RTLS RF800 (BluFi Wireless).
- K-TERM 70IC Beacon Transmitter (Kilchherr Elektronik AG).
- iBeacons.

Option Boards Software

SmartPTT supports MOTOTRBO™ option boards programmed using Tallysman Sprite Configurator. Use the version 0.3.16 for the Movement Reports Restoration feature.

Sound cards

- Internal PCI-E Sound Blaster Audigy RX.

- External Sound Blaster X-Fi Go.
- ESI MAYA44XTe.
- ICON Digital Cube Pro USB.

Accessories

SmartPTT supports HID-compliant devices. The devices listed below have been tested in SmartPTT and are fully compatible with it.

- Desktop USB microphone [D-9 by Holmco](#)
- Desktop USB microphone [PS12/PS20 by pei tel](#)
- Desktop microphone [DM-160 by CXD](#)
- Desktop USB microphone [VM-1S™](#)
- Desktop USB microphone [TM-2 USB V2](#)
- Desktop USB microphone [VCC-3 USB Command Console](#)
- Desktop USB microphone [VCC-2 USB mini-Command Console](#)
- Push-to-talk button [PTT-13 by Imtradex](#)
- USB corded headsets [Blackwire C310-M and C320-M by Plantronics](#)
- Yellow foot switch [X-keys XK-3 USB Switch Interface by P.I. Engineering](#)
- Modular console [Tipro TM-HHA-6AW](#) with analog interface without touchcomputer.

Hardware

- SmartPTT Dispatcher can be installed and used on [BeFREE 10](#) computers.
- SmartPTT supports the IP Gear Claro 30 SIP-gateway (by ESTel) for access to analog telephone networks.
- SmartPTT can connect to [NexLog recorders](#) running under NexLog Recorder Software 2.8.2.
- SmartPTT can connect to [Avigilon](#) system cameras using the [Avigilon Control Center Server 7](#) software.

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Contact Information

If you have a request or want to learn more about our solutions, please contact our sales managers via email sales@smartptt.com

Customer support is provided by SmartPTT Technical Support Center. You can contact a support engineer via email support@smartptt.com or by submitting a request on the official support website support.smartptt.com

You can find the full SmartPTT Terms of Technical Support on the official website <https://smartptt.com/smartptt-terms-of-technical-support/>

SmartPTT Technical Support Center does not consult on deployment and maintenance of Motorola Solutions products except on settings related to SmartPTT connection and data communication.

For technical support on Motorola Solutions products, please contact an authorized Motorola Solutions representative in your region.

To share your feedback on the product, documentation, and services, email us at feedback@smartptt.com



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