MC-X Dispatcher
Mission-Critical Flexibility

Content

Introduction

The next generation in Mission-Critical Dispatching

As a Dispatcher, you provide crucial information and coordination to first-line safety personnel. Your response can make all the difference in keeping people away from danger. Yet we can only respond as efficiently as the tools at our disposal allow. Many of today's dispatching solutions are based on legacy systems that are slow, aged, and inefficient. Precious time is lost in dealing with the complexities of these systems. That is why we have created a cutting-edge Dispatching Console, built from the ground up to tailor to your mission-critical requirements. Based on our extensive collaboration with dispatching operators, it has been carefully designed to give you the confidence and flexibility to manage any situation that comes your way.

Features

Feature Highlights

VOICE DISPATCHING
Crystal-clear voice communication through the use of DECT™ technology, built-in Echo Cancellation (AEC), Active Noise Cancellation (ANC) and Close Conversation Limiting.

FULLY MODULAR DESIGN
Designed from the ground up for modularity. Components can interface: wirelessly while detached, wired via USB-C, or in Attached Mode. All components are hot-swappable.

BUILT IN BATTERY
Every module is battery operated with 24h stand-by time, allowing Dispatch Operators to flexibly adapt their Console to operational requirements. Battery functions as UPS during a power outage.

INDUSTRY-LEADING CONNECTIVITY
Connectivity options include Wi-Fi, 2 x Redundant Gigabit Ethernet Connections, DECT™, Bluetooth, 4G, 5G, and GSM-R.

LAN FAILURE FALLBACK OVER 4G/5G/GSM-R
Additional network redundancy can be provided by the connectivity capabilities of the tablet for 4G/5G or by the addition of the standalone Fallback Module accessory for 4G/5G/GSM-R.

MISSION-CRITICAL RELIABILITY
Industrial Grade Components, Shielded Strain Relief Connectors, Rated IP52 for Dust and Water Protection, Silent Operation without moving parts, and LED Indicators for operational status.

LOW POWER REQUIREMENT
Designed from the ground up for power efficiency. Built-in Power Reduction Functionalities like Screen Brightness Reduction, Sleep Mode and Battery Charging Regimes.

MODULAR DESIGN

ATTACHED MODE

Modules are hot-swappable. They automatically connect using magnetism and Powered USB Pogo pins. Modules can be adjusted on the fly based on operator preference.

The Dispatcher Console can be permanently attached as a Monoblock Configuration using mounting brackets.

DETACHED MODE

Modules can be used in Detached Mode through wireless DECT™ technology. Detach the module, and it will automatically continue operating wirelessly.

The Phone Handset can both be used connected by wire or disconnected using DECT™ technology. It will automatically charge when docked.
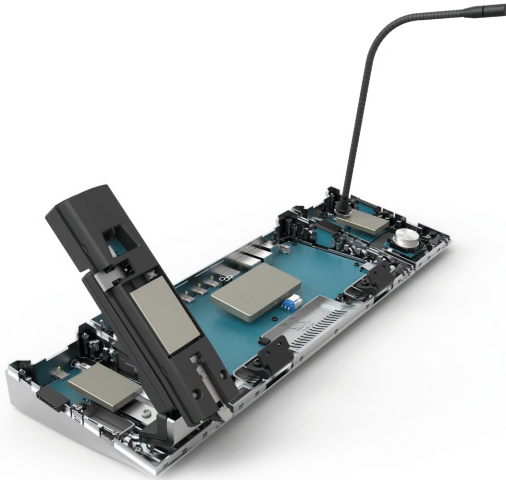
WIRED MODE

All modules and the Dispatcher Headset can be connected using USB-C cables.

The Phone Handset can be connected using a specially designed Seated USB-C Shielded Connector. This prevents breakage of the Spiral Cord Connector that is common in other Dispatcher Consoles.

24 hours ▷ INTEGRATED BATTERY & UPS

Every module has a **built-in battery** that allows it to operate as a standalone device. When the Dispatcher Console is used in Attached Mode, the integrated battery will serve as **built-in UPS** (Uninterruptible Power Supply). This allows the Dispatcher Operator to continue operations in case of a complete power outage.

The Gooseneck and Telephone Module are rated for **24-hour battery operation** based on 20% call and 80% standby use.

CONNECTIVITY

Effective communication is the foundation of every dispatching call. That is why we have equipped the MC-X Dispatcher Console with **best-in-class connectivity** options.

- **DECT**™ technology allows for encrypted wireless interfacing between modules, headset and phone handset for a range of up to 180 meters in direct line of sight. DECT™ voice communication has built-in 64-bit encryption, ensuring your call is private.
- Two **redundant gigabit ethernet** ports provide the ability to survive a single cable failure by providing alternate data paths.
- **Wi-Fi** provides wireless LAN capabilities*.
- **4G and 5G connectivity*** allow for fallback during evacuation scenarios or signal loss.
- The dispatcher console has been designed to comply with existing **GSM-R** networks and its successor, the Future Railway Mobile Communications System (**FRMCS**). FRMCS will act as a key enabler for rail transport digitalisation.

LAN FAILURE FALLBACK OPTIONS

UNDOCK TABLET AS FALLBACK DEVICE

During an evacuation or required displacement, the **tablet can be undocked** from the Main Body by lifting the locking clasp and disconnecting the USB-C connector. It will seamlessly **switch to 4G/5G*** without any operational interference.

OPTIONAL FALLBACK MODULE AS FALLBACK DEVICE

The **Fallback Module** is **available as an accessory** to the MC-X Dispatcher Console. The Fallback Module is used in situations where the Dispatcher Console is unable to establish a connection with the Dispatcher System Core. In this situation, the Fallback Module will ensure that the user can still communicate over the GSM-R network by establishing a direct communication link using the built-in **GSM-R Modem** and over the 4G/5G networks using the built-in **LTE Modem**.

The Fallback Module is fully designed to interface with the base MC-X modules. Once the system is in operation, simply attach the module using the Powered USB Pogo pins. If required, it can be permanently affixed in a **Monoblock Configuration**. The Fallback Module can be used as a **standalone USB device**.

* Depending on the type of tablet.

Key Benefits

Reduced TCO

Modules can be replaced individually. DECT™ wireless technology allows for more simultaneous devices in one location, reducing operational footprint. Future-proof components! We ensure support throughout the product's lifetime.

Crystal-Clear Voice

Clear communication through the use of DECT™ technology, built-in echo cancellation (AEC), and close conversation limiting. The volume between input devices (Gooseneck, Phone set, Headset) is automatically balanced.

Instant Response

Modern computational hardware and interfaces ensure immediate response at the push of a button. Push To Talk Buttons have been specifically chosen for haptic feedback and consistency.

Easy-to-use

The Dispatcher Console has been designed for ease of operation. The only input devices you need are the touch screen and push-to-talk button.

Adapt to user

The Dispatcher Console allows for easier operational maintenance; users can swap modules that pair automatically. Configurable setup as per operator requirement. Flexible inclination mechanism for the handset and touch screen.
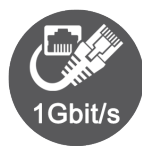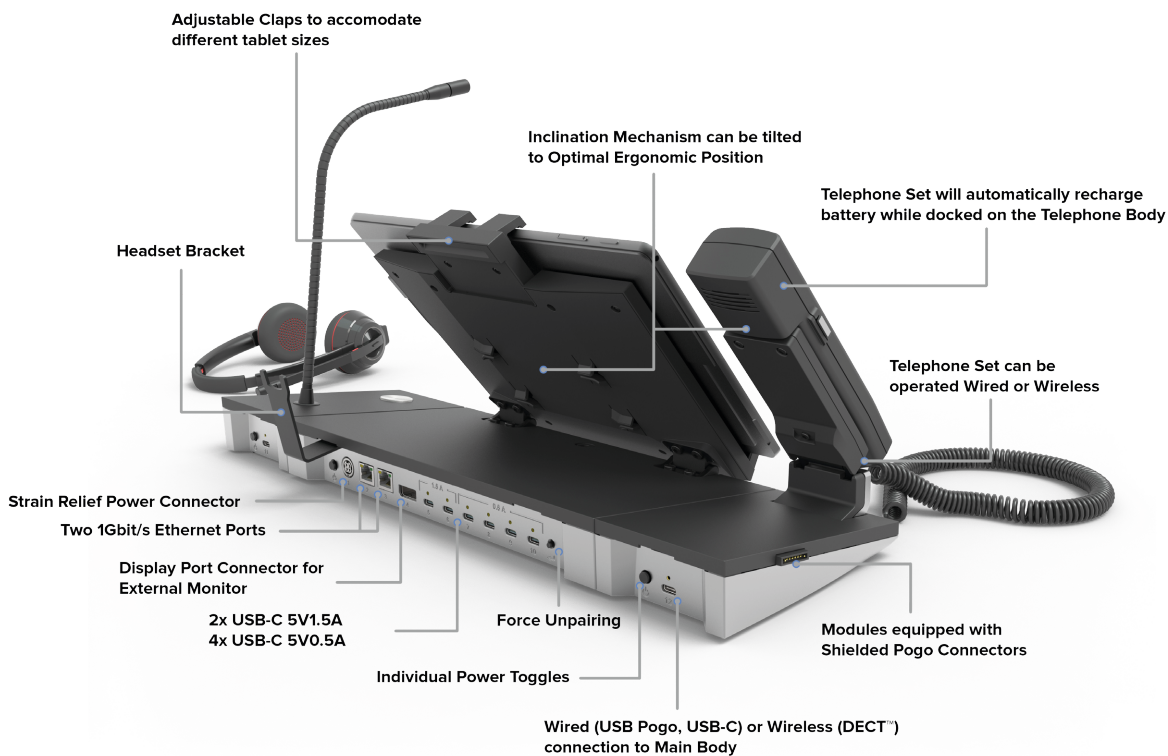
Improved Call Stability

DECT™ allows for a long range between accessories and the Main Body (up to 180m) Up to 8 communication devices can be connected simultaneously using DECT™ wireless technology.

Design & Ergonomics

BUILT FOR MISSION-CRITICAL RELIABILITY

The MC-X Dispatcher Console has been built specifically for Mission-Critical Reliability and Durability. All cables are equipped with **Strain Relief Connectors**. This prevents accidental unplugging of data or power cables; a problem often seen in this type of application. The Console offers **IP52 Protection*** against dust and water. **Industrial grade components** are used to ensure durability over the product's lifetime. The Console lacks moving parts, ensuring **silent operation**. **LED lights** on the front of the Console indicate operational status.


Adjustable Claps to accomodate different tablet sizes

Inclination Mechanism can be tilted to Optimal Ergonomic Position

Telephone Set will automatically recharge battery while docked on the Telephone Body

Headset Bracket

Telephone Set can be operated Wired or Wireless

Strain Relief Power Connector

Two 1Gbit/s Ethernet Ports

Display Port Connector for External Monitor

2x USB-C 5V1.5A
4x USB-C 5V0.5A

Force Unpairing

Modules equipped with Shielded Pogo Connectors

Individual Power Toggles

Wired (USB Pogo, USB-C) or Wireless (DECT™) connection to Main Body

IP52 | USB Type-C | 1Gbit/s | CE

DIMENSIONS

Main Body

- **Height Min.:** 10.80 cm (4.25 inch)
- **Height Max.:** 23.00 cm (9.05 inch)
- **Width:** 31.50 cm (12.40 inch)
- **Depth:** 18.40 cm (7.24 inch)
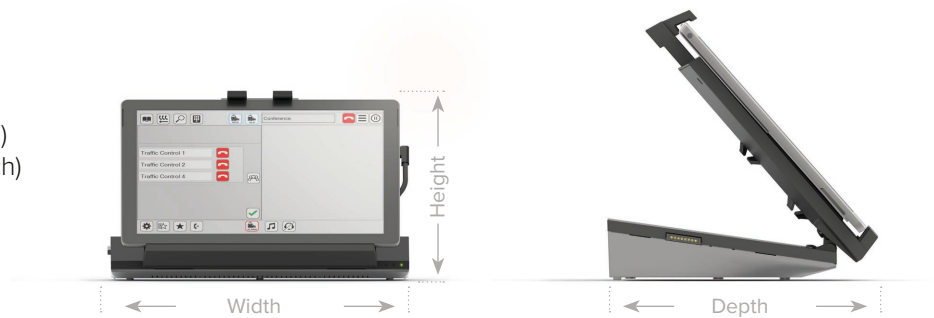
Gooseneck Module

- **Height:** 30.80 cm (12.13 inch)
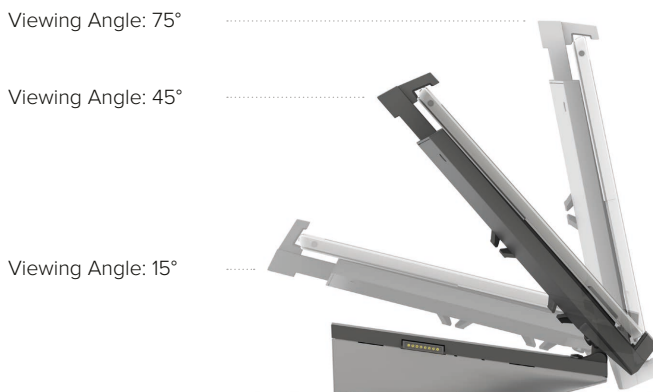- **Width:** 9.30 cm (3.66 inch)
- **Depth:** 16.70 cm (6.57 inch)

Telephone Module

- **Height Min.:** 9.30 cm (3.66 inch)
- **Height Max.:** 12.70 cm (5.00 inch)
- **Width:** 9.30 cm (3.66 inch)
- **Depth:** 16.70 cm (6.57 inch)

INCLINATION MECHANISM

Viewing Angle: 75°

Viewing Angle: 45°

Viewing Angle: 15°

The **Inclination Mechanism** allows the operator to customise the working area by tilting the screen between 15° and 90°. Adjustments can be made on the fly without requiring any tools.

Fully compressing the unit allows it to be stored under a dispatching screen setup without interfering with the operator's workflow.

Accessories

4G/5G/GSM-R FALLBACK MODULE

The Fallback Module allows for additional fallback redundancy using 4G/5G/GSM-R when the connection to the Dispatcher Core has been lost.

TRAINING HANDSET

The MC-X Handset can be used for training purposes. It can be connected through USB, allowing the instructor to listen in on the operator's calls. Equipped with Echo Cancellation (EAC).

DECT™ DISPATCHER HEADSET

Tune out noise pollution and fully focus on the conversation. The Dispatcher Headset has built-in Noise Cancellation (ANC), Close Conversation Limiting, Echo Cancellation (EAC), a range of 180m, and 13 hours of talk time. Mono and stereo options are available.

DESKTOP SPEAKER

The USB-C Desktop Speaker connects directly to the MC-X Dispatcher Console. Depending on the model, the speaker can be equipped with adjustable volume control for more operational control.

BUSYLIGHT WITH ADHESIVE SURFACE

Adding a Busylight to your Dispatcher Console makes your status visible to your colleagues, so you can fully focus on the conversation. The Busylight can be connected to flat surfaces using the included adhesive patch.
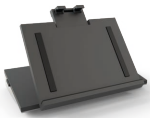
FRONT/REAR HINGED PTT FOOT PEDAL

The Front/Rear Hinged PTT Foot Pedal allows the user to comfortably rest a foot on the main pedal and keep it active for long periods. Activation of the pedal requires slight additional pressure from the toe or ankle. Great for hands-free procedures.

Specifications

Technical Specifications - Main Body

Display	
External Display	• Display Port connector for external monitor
Human Interface	
Power	• On/Off Push Button
Unpair	• Push button to force unpairing of all wirelessly connected modules

Status Indication	• Three LEDs that indicate status information about the workings of the system
	  • Indication of normal operation
	  • Indication of an error condition
	  • Free to assign by the host application

Wireless Connections	
Fixed Part	• DECT™ based Voice Data • Host communication using USB Audio profile
Audio Channels	• 4 Speech circuits simultaneously
Portable Part	• Up to 8 Portable Parts supported
Audio Quality	• 20Hz-20kHz audio bandwidth • Dynamic range for microphone and speaker over 105dB
Compatibility	• DECT™ 6.0, multi-region support • GAP profile, support for generic DECT™ peripherals
Data Connections	
Host Connection	• USB 3.2 gen 1 DRP
MC-X System Connector	• USB 2.0 DFP, maximum speed 480Mb/s • Module Detect
USB-C Ports	• USB 2.0 DFP, maximum speed 480Mb/s
Ethernet	• Dual IEEE 802.3ab, 1Gbit/s

Power Connections		
Mains Power	•	External Power Supply AC/DC convertor < 100W, Meanwell
Battery Power	•	Backup Power activated when Mains Power is lost. Performs an UPS function, using an internal Li-Ion battery. Battery is replaceable
Battery Operation	•	Ranges from one to four hours; time of use depending on active peripherals and configuration
Power On/Off	•	Power push button to switch off the internal power of the MC-X, mains power will remain available

Output Power	•
	
	  •
	  •
	  •
	•
		All ports can be individually switched OFF/ON and feature short-circuit and over-current protection as well as 8kV HBM ESD protection. Port Status information is provided to the connected host via software. All these ports feature USB2.0 DFP
		  2 x MC-X system connectors providing 1.5W power at 5V
		  4 x USB Type-C connectors providing output power of 0.5W at 5V
		  2 x USB Type-C connectors providing output power of 1.5W at 5V
		All USB-C connectors feature a strain relief option by using the appropriate cable

Host Connection	• • •	1 x USB 3.2 gen 1 DRP 4 x USB-C Connection cable 2 x USB-PD 3.0 (max 60W 20V at 3A)
MC-X System Connector	•	The system connector allows up to three modules to be daisy-chained together. This may be any combination of the Gooseneck Module and the Telephone Module. Modules are detected when attached or detached. Module type is also detected.

Technical Specifications - Telephone Module & Set

Power Supply	
MC-X System Connections	• For cascading multiple modules together and provide power and data. A maximum of two adjacent modules is supported.
USB-C	• To connect to a generic USB-C port as alternative for power and data • Screw lockable connection
Module Power Consumption	• Less than 2.5W • Battery Charger
Battery	• Rechargeable Li-Polymer • Only powers the Module when operating in stand-alone (wireless) • 24 Hour, based on 20% call and 80% standby use
Telephone Set	• USB-C spiral cord connection between Telephone Module and Telephone Set
Data Communications	
Host	• USB2.0 UFP over MC-X System Connection or USB-C port
Audio	• USB Audio 1.0 Profile
Control	• USB HID, CDC, Proprietary protocol
Wireless	• DECT 6.0, Portable Part, single speech circuit for simplex audio
Audio	
Microphone	• Kidney pattern, MEMS microphone build-in Telephone Set
Speaker	• Build-in Telephone Module
Audio	• DA78xx Codec for conversion used by USB and DECT™
Human Interface	
Power	• On/Off Push Button when in stand-alone use
Push Button	• Push Button, application designated use (PTT or PTM)

Status Indication	• Two LEDs that indicate status information about the workings of the system:
	    • Indication of normal operation or error condition
	    • Free to assign by the host application

Technical Specifications - Gooseneck Module

Power Supply		
MC-X System Connections	•	For cascading multiple modules together and provide power and data. A maximum of two adjacent modules is supported.
USB-C	•	To connect to a generic USB-C port as alternative for power and data
	•	Screw lockable connection
Module Power Consumption	•	Less than 2.5W
	•	Battery Charger
Battery	•	Rechargeable Li-Polymer
	•	Only powers the module when operating in stand-alone (wireless)
	•	24 Hour, based on 20% call and 80% standby use
Data Communications		
Host	•	USB2.0 UFP over MC-X System Connection or USB-C port
Audio	•	USB Audio 1.0 Profile
Control	•	USB HID, CDC, proprietary protocol
Wireless	•	DECT™ 6.0, Portable Part, single speech circuit for simplex audio
Audio		
Microphone	•	Kidney pattern, electret microphone build-in gooseneck
Audio	•	DA78xx Codec for conversion used by USB and DECT™
Human Interface		
Power	•	On/Off Push Button when in stand-alone use
Push Button	•	Push Button, application designated use (PTT or PTM)
Status Indication	•	Two LEDs that indicate status information about the workings of the system.
		• Indication of normal operation or error condition
		• Free to assign by the host application

Technical Specifications - Headset

Power Supply	
USB-C	• To connect to a generic USB-C port as alternative for data and charging
Battery	• 700 mAh rechargeable replaceable lithium-ion polymer battery • Up to 13 hours of talk time • Up to 50 hours of standby time • Charge time until fully charged: 3 hours
Data Communications	
DECT™ Frequency	• EU DECT™: 1.88 - 1.90 Ghz
DECT™ Range	• Up to 180 meters from DECT™ headset base to headset in direct line of sight
Wireless	• DECT™
Audio	
Microphone	• Active noise-cancelling microphone
Audio	• Noise cancelling with close conversation limiting
Human Interface	
Power	• On/Off Toggle Switch when in stand-alone use
Call Control	• Multi-function button support for answer calls, end calls, docking operations

Certification

Certification	
Electrical Safety	• Low Voltage Directive 73/23/EWG • CE Marking Directive 93/68/EWG (NEN EN IEC 62368-1:2001
EMC	• EMC Directive 89/336/EWG • CE Marking Directive 93/68/EWG (EN 55022 Class B, EN 50121-4, EN 61000-6-3, -4, EN 55024, EN 61000-6-1, -2)
Telecom	• RED Directive 2014/53/EU
Environmental	• IEC 60721-3-3 • IEC 60068-2-6 • IEC 60068-2-1, -2, 14, 30, 78

Notes

RideOnTrack