



MT680 Plus

TETRA mobile radio for vehicles

MT680 Plus is the mobile radio for vehicles by Hytera for TETRA users of all sectors. It stands out for high reliability, easy operation and ruggedness in all cases of application.



Radio

MT680 PLUS

TETRA mobile radio



Highlights

Versatile operating modes

Besides Direct Mode (DMO) and Trunked Radio Mode (TMO), the MT680 Plus supports ETSI DMO Gateway and ETSI type 1A DMO Repeater operation. By using one of those new operating modes, the MT680 Plus can boost the area of operation for other TETRA users.

Exceptional audio

The MT680 Plus features an advanced audio chip with new noise cancelling capability. Thus, users working in noisy environments benefit from a further improved audio quality.

Robust, durable constructions and easy handling

The robust design of the MT680 Plus is crowned by a large TFT LCD display with 260,000 colors that allows trouble-free access to all of the information even with bright sunlight.

The user-friendly user interface, entry via keypad and an efficient 4-Watt speaker ensure an excellent operation and handling and a high quality of communication. You can also tailor the menu structure of the user interface to your particular needs.

Extreme quality and flexible installation

Thanks to its high flexibility MT680 Plus can be practically installed everywhere. You can install the operating head wherever the control elements are easily accessible. The front panel is protected dust-proof and water-proof according to IP67 and is extremely efficient even in critical situations.

Versatile services and functions

MT680 Plus supports voice and data services of the TETRA standard. Thanks to the integrated GPS function a precise positioning is possible any time. The optional encryption and the recording function offer additional important advantages.

Immediate and direct communication

Thanks to the high 10-W-transmitting power you can reach your team colleagues even over large distances. The MT680 Plus offers fast access to the TETRA mobile radio network and the roaming services. Moreover, the device is compatible with the base stations and other terminals of different manufacturers.

The features marked by * will be available in future versions of the MT680 Plus.

Encryption features are optional and have to be configured separately. They are also subject to German and European export regulations.



Functions

Operating modes

- Trunked radio mode (TMO): Communication via the TETRA radio network (semi-duplex and duplex mode)
- Direct mode (DMO): Direct communication between the devices without using the radio network (semi-duplex)
- ETSI DMO Gateway operation
- ETSI type 1A DMO Repeater operation

Voice services

Group call

- Group call with defined priority (incl. pre-emptive priority)
- Dynamic Group Number Assignment (DGNA)
- Broadcast call (group, TMO)
- Subscriber identification (talking party identification, TPI)
- Late entry
- Open group call
- Priority group scanning

Individual call

- Individual call, half-duplex
- Individual call, duplex (TMO)
- Individual call with defined priority (also pre-emptive priority)
- Calling Line Identification Presentation (CLIP)

Emergency call

- Emergency call to selected group / to predefined group
- Emergency individual call
- Emergency PABX/PSTN call
- Hot Mic & emergency cycle
- Silent alert (TMO)

Call to telephone networks (PSTN/PABX) (TMO)

- PSTN/PABX individual call, full-duplex
- PSTN/PABX individual call, half-duplex
- DTMF
- Calling Line Identification Presentation (CLIP)

Additional call services

- Callout
- Gateway call (DMO) / repeater call (DMO)

Security services

- Authentication & mutual authentication
- Air interface encryption (TEA1, TEA2*, TEA3, TEA4)
- End-to-end encryption (E2EE): by software (AES128 / AES256), by SIM card, encryption of voice and SDS
- Access control with PIN/PUK code
- TETRA security class 1, 2, 3: non-encrypted, static encryption (SCK), dynamic encryption (CCK/DCK)
- Static encryption in DMO (SCK)
- Key distribution via air interface (OTAR)
- Activation / deactivation via air interface (Enable/Disable)
- Ambience Listening

Safety functions for the user

- Emergency button
- Call barring
- Configuration protection / configuration password
- Programmable key lock (dedicated keys can be excluded from locking)
- Lone worker function
- TX Inhibit (TXI)

Functions of the user interface

- 16 programmable keys for direct access to the individual functions
- User profiles*
- Multi-function group selector switch and volume control
- 4-ways navigation key
- Call log: missed / answered calls, dialed numbers
- Flexible dialing (e.g. direct dialing, redialing, dialing lists etc.)
- External handheld microphone (standard) or table microphone (optional)
- Adjustable display brightness & screen saver
- Many international languages are already available, installation of several selectable languages on mobile station
- GPS positioning based on ETSI LIP or NMEA protocol
 - Completely integrated GPS/GLONASS/Beidou receiver
 - Display the calling party's relative direction and position
 - Location information sending (TMO) on emergency call
 - Overspeed alarm
- PEI interface (AT commands)
- Clock synchronization via GPS/SAT, radio network or local time
- Automatic cell re-selection without call interruption (handover)
- Programming several selectable network identifications (TMO, DMO)
- Programming several selectable PSTN/PABX gateways
- Customizable alarm tones
- Radio User Assignment (RUA)
- Ignition sense
- Over the air programming (OTAP)

Data / message services

- Short data service (SDS) – types 1, 2, 3, 4 and TL
- Concatenated SDS (Long SDS) and Flash SDS
- Status message/text message
- SDS and status via DMO gateway
- Sending and receiving of messages during calls & notification on new messages during calls
- Packet Data service (packet data, single-slot, multi-slot)
- Circuit Mode data service
- Java™ platform MIDP 2.0, WAP



Technical Data

General data	
Dimensions (H x W x D) (with front panel)	70 x 184 x 201 mm
weight (with front panel)	1.9 kg
Operating voltage	10.8 – 15.6 V (standard 13.2 V)
Call group number – TMO	3000
Call group number – DMO	2000
Phone book	1000 entries
Group lists – TMO (used for scanning, scan lists)	200 (200 groups per list)
Group lists – DMO	50 (200 groups per list)
Number of short messages (SDS) (inbox, outbox, drafts)	400 / 50 / 50
Number of status messages	200
LCD display	320 x 240 Pixel, 260.000 colors
Audio power output	4 W (internal), 10 W (external, optional)

Ambient data	
Operating temperature range	-25 °C to +65 °C
Storage temperature range	-40 °C to +85 °C
Relative humidity	ETS 300 019 (95 %)
Dust and water protection	IP54 (radio unit); IP67 (control unit) IEC60529 or GB-4208-93
Shock and vibration resistance	MIL-STD-810 F/G

Radio characteristics	
Frequency ranges	380 – 430 MHz 350 – 400 MHz* / 410 – 470 MHz* / 806 – 870 MHz*
Channel spacing	25 kHz
Transmitting power	maximally 10 W (settable)
Receiver class	ETSI EN 392-2/396 class A
Static receiver sensitivity	-112 dBm (standard -116 dBm)
Dynamic receiver sensitivity	-103 dBm (standard -105 dBm)






GPS data	
GPS antenna	External antenna
Sensitivity	≤ -154 dBm

The features marked by * will be available in future versions of the MT680 Plus.

All technical specifications were tested according to the relevant standards. Subject to change on the basis of continuous development.

The illustrations below are solely for reference. The products might differ from these illustrations.

Standard scope of delivery

				
Handheld microphone SM16A1	Handheld microphone support with screws	Power cord PWC10	Flat fuse POA08	Installation clip BRK11

Optional accessories (excerpt)

					
Table microphone SM10A1	External speaker SM09D1	Programming cable (USB-to-serial) PC35	GPS antenna GPS04	Data cable (USB to serial) PC39	External voltage supply PS22002

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