DIGITAL RADIO MODULE FOR FRMCS - MTC18

HIGHLIGHTS AND TECHNICAL INFORMATION

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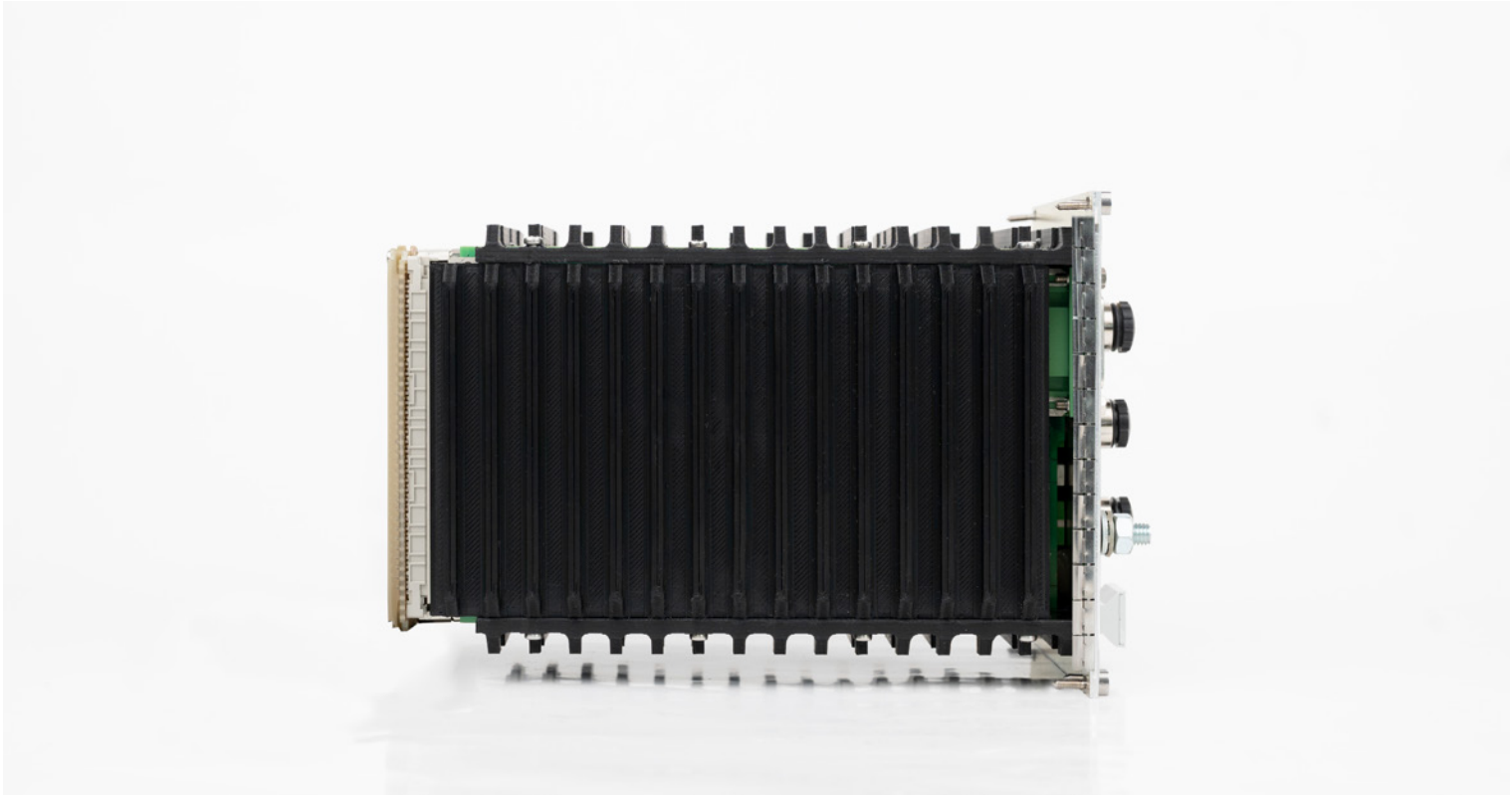

The next generation of cab radios will be based on FRMCS technology and will initially use a data transmission system that offers extremely high bandwidth and remarkably low latency. In addition, safety and reliability will be improved through the use of private and commercial 5G networks. Based on its many years of expertise in GSM-R, analogue train radio and LTE-based radio modules, Funkwerk has developed a 5G-based radio interface with a processor unit for the next generation of train communication.

The mobile communications interfaces are implemented using the integrated industry-standard-compliant modem. This not only ensures support for various mobile communications systems and frequency bands, but also outstanding future-proofing and flexibility.

As a result the **MTC18** will also meet future requirements for global use and can be easily adapted to national conditions.

HIGHLIGHTS

- Supports a wide range of 5G bands
- Wide voltage supply range from 24 to 110 V DC
- Control via a patchable embedded operating system based on Linux
- Integrated industry standard-compliant FRMCS modem
- meets the requirements of EU Implementing Regulation (EU) 2021/1730

TECHNICAL DATA

DIMENSIONS & WEIGHT

CONSTRUCTION	Compact slide-in module for 19“ rack	
HEIGHT	128.4 mm	including front panel and antenna connectors
WIDTH	106.3 mm	including front panel and antenna connectors
DEPTH	198.4 mm	including front panel and antenna connectors
DIMENSION FRONT PLATE	21 HP / 3 U	
WEIGHT	max. 0.75 kg	

ENVIRONMENTAL CONDITIONS

DEGREE OF PROTECTION ACCORDING TO EN 60529	IP20 (when installed)
VIBRATIONS AND SHOCKS	according to EN 50155
EMC	according to EN 50121-3-2 and EN 50155

CLIMATIC CONDITIONS

OPERATING TEMPERATURE RANGE	-25 °C bis +70 °C
STORAGE TEMPERATURE RANGE	-40 °C bis +85 °C
MAXIMUM GRADIENT	± 1 °C/min of ambient temperature
RELATIVE HUMIDITY	according to EN 50155

ELECTRICAL PROPERTIES

OPERATING VOLTAGES (TOLERANCES ACCORDING TO EN 50155)	24 V to 110 V DC	
INTERRUPTION OF VOLTAGE SUPPLY	S1 (no interruption) according to EN 50155	
MAXIMUM POWER CONSUMPTION	130 W	

RF PROPERTIES

TRANSMISSION POWER	31 dBm (5G Power Class 1)	
OPERATING FREQUENCIES	5G bands	n1, n3, n7, n8, n20, n28, n38, n40, n78, n100, n101
	4G band	B1, B3, B7, B8, B20, B28a, B38, B40
	GNSS	GPS, GLONASS, BDS, Galileo
SENSITIVITY, RF FILTERING / BLOCKING PROPERTIES	The module complies with the relevant requirements of 3GPP.	

MECHANICAL DESIGN

RF CONNECTION	2
GNSS CONNECTION	1
ETHERNET INTERFACES	2
SERIAL INTERFACE RS422	1
POWER SUPPLY	1
PE CONNECTION	1
RESET BUTTON	1
LED	8 LEDs for operating statuses

The **MTC18** implements FRMCS operation in a single, stand-alone module. It provides interfaces to the vehicle-side infrastructure, as well as a powerful application processor with a Linux-based operating system.

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