

## MC2X8-R

### Industrial cellular router (3G/4G/5G) + WiFi 6e (802.11ax)

#### Description:

The MC2X8-R connects components that communicate via Ethernet LAN or serial interfaces to other networks via WLAN or 5G (LTE).

The typical usage area for the MC2X8-R is machine-to-machine communication, locally over WLAN as well as remotely connected over mobile networks (5G).

#### Properties:

##### Hardware:

- Processor: iMX8 (NXP)
- Memory: 512MByte DDR4-RAM and 4GB Flash
- WiFi: 802.11ax for 2.4 + 5 GHz WiFi6 + 6GHz WiFi6e
- Cellular: 5G/LTE RedCap
- Navigation: Multi-constellation GNSS
- Ethernet: 2 x Gigabit LAN interface
- Serial: 1 x RS232 or RS485 serial interface
- USB: 1 x USB2 Port also for interface extensions
- IO: 1 x relay switch (dependent on power connector)  
1 x aux input (dependent on power connector)
- Power supply: 12-60V or 802.3af PoE via LAN Port 1
- Housing: Robust aluminum housing with various mounting options

##### Functions:

- Configuration via website, REST-API or by using the MC-Config program.
- Different bridge modes to connect the LAN clients.
  - NAT
  - Single Client NAT
  - VPN (openVPN, Wireguard or IPSec)
- WEP, 802.11i WPA-WPA2-WPA3-AES-TKIP-PSK
- WPA Enterprise 802.1x PEAP LEAP TLS TTLS
- Certificate management for authentication via 802.1x
- SCEP (Simple Certificate Enrollment Protocol)
- MQTT-Client
- Connects worldwide to 3G, 4G or 5G networks
- Precedence selection to prefer WLAN over LTE and vice versa
- Serial-Client via TCP or UDP or MQTT
- ipv6 + ipv4



#### Device Options:

##### Mounting:

- 1) side mounting brackets (MC2X8-R-SL...)
- 2) DIN rail mounting clip (MC2X8-R-SC...)

##### Power supply connection:

- 1) 5 pol. M12 connector (MC2X8-R-Sx-M12)
  - always with relay
- 2) 8pol terminal block (MC2X8-R-Sx-WK8)
  - always with relay and auxiliary input

##### Antenna connector WLAN:

- 1) 2 x RP-SMA

##### Antenna connector 5G:

- 1) 4 x LTE antenna SMA

##### Serial Interface:

- 1) 1 x RS232 (Standard)
- 2) 1 x RS485
- 3) 1 x RS422

**Technical data:**

<b>Specification:</b>	
Ethernet	2 x 10/100/1000 MBit Auto MDI/MDIX
Serial	1 x RS232, 300-460,8 KBit/s, RTS, CTS, DSR, DTR or RS485
USB	1 x USB 2.0 to connect printers or USB adapter with various other interfaces
Relay	1 x change-over switch max 1A@24V, max 125VAC
AUX-Input	1 x galv. isolated 10 – 60V
Antenna connectors	2 x RPSMA (WiFi) 4 x SMA (5G )
Sim card slot	1 x Standard/Mini-SIM slot
Power supply	12 – 60 VDC or 802.3af PoE via the LAN Port
Energy consumption	max 15W (4.5W idle)
Operating temperature range	0-60°C
Dimensions	105x125x35mm
Weight	ca. 500g

<b>WLAN-Interface:</b>	
Technologies	802.11 ax WLAN (2.4 + 5 + 6GHz Band) IEEE 802.11-Standards: a/b/g/n/ac/ax Features: OFDMA, 1024QAM, MU-MIMO, TPC/DFS, TWT Frequency: 2,4 GHz, 5 GHz, 6GHz
Antennas:	2 Antennas (2T2R MIMO)
Encoding	WEP (64,128bit) + TKIP/AES
Security	802.11i WPA(2+3) – PSK 802.1x EAP-PEAP, -TLS, -TTLS, -LEAP
Fast Roaming	802.11r + 802.11k
Channels	2,4GHz ETSI 1-13, USA/Canada 1-11 5.0GHz ETSI + USA/Canada 24 (36 – 165) (U-NII-1 + UNII-2A + U-NII-2C+U-NII-3) 6.0GHz 5.945 - 6.425 MHz (EU)

<b>5G-Interface:</b>							
<i>Technologies / Bands</i>							
5G	<p>NR SA 3GPP Release 17 RedCap SA operation, Sub-6 GHz n1/ 2/ 3/ 5/ 7/ 8/ 12/ 13/ 14/ 18/ 20/ 25/ 26/ 28/ 30/ 38/ 40/ 41/ 48/ 66/ 70/ 71/ 77/ 78/ 79</p> <p>DL 2 x 2 MIMO n1/ 2/ 3/ 5/ 7/ 8/ 12/ 13/ 14/ 18/ 20/ 25/ 26/ 28/ 30/ 38/ 40/ 41/ 48/ 66/ 70/ 71/ 77/ 78/ 79</p>						
LTE	<p>LTE-FDD B1/ 2/ 3/ 4/ 5/ 7/ 8/ 12/ 13/ 14/ 17/ 18/ 19/ 20/ 25/ 26/ 28/ 30/ 66/ 70/ 71</p> <p>LTE-TDD B34/ 38/ 39/ 40/ 41/ 42/ 43/ 48</p> <p>DL 2 x 2 MIMO B1/ 2/ 3/ 4/ 5/ 7/ 8/ 12/ 13/ 14/ 17/ 18/ 19/ 20/ 25/ 26/ 28/ 30/ 34/ 38/ 39/ 40/ 41/ 42/ 43/ 48/ 66/ 70/ 71</p>						
GNSS	GPS/ GLONASS/ BDS/ Galileo/ NavIC						
<i>Antennas:</i>	2 Antenna						
<i>GNSS</i>	GPS, GLONASS, BeiDou, Galileo						
<i>Data rates (max.)</i>	<table border="1"> <thead> <tr> <th>Mode</th> <th>Data rate</th> </tr> </thead> <tbody> <tr> <td>5G SA Sub-6</td> <td>223 Mbps (DL)/ 123 Mbps (UL)</td> </tr> <tr> <td>LTE</td> <td>195 Mbps (DL)/ 105 Mbps (UL)</td> </tr> </tbody> </table>	Mode	Data rate	5G SA Sub-6	223 Mbps (DL)/ 123 Mbps (UL)	LTE	195 Mbps (DL)/ 105 Mbps (UL)
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**Order codes:**

	<b>Option</b>	<b>Order code</b>
<b>Housing</b>		
	Housing with mounting brackets	MC2X8-R-SL....
	Housing with DIN-rail-clip	MC2X8-R-SC....
<b>Power supply connection</b>		
	M12 connector	MC2X8-R-Sx-M12....
	8pol. Weidmüller terminal block	MC2X8-R-Sx-WK8....
<b>IO-Option</b>	optional, if not included in connector	
	Aux-Input	MC2X8-R-Sx-....-INP
<b>Serial</b>	Standard: 1 x RS232	MC2X8-R-Sx-....
	1 x RS422	MC2X8-R-Sx-xx-RS422
	1 x RS485	MC2X8-R-Sx-xx-RS485