

## MC2L

### 802.11a/b/g/n WLAN & mobile networks (LTE), Ethernet & Serial adapter

#### Description:

The MC2L connects components that communicate via Ethernet LAN or serial interfaces to other networks via WLAN or LTE. The typical usage area for the MC2L is machine-to-machine communication, locally over WLAN as well as remotely connected over mobile networks (LTE).

#### Properties:

##### Hardware:

Processor board with ARM® Cortex®-A9 Core  
 Memory: 128MByte DDR-RAM and 4GB Flash  
 802.11a/b/g/n for 2.4 + 5 GHz WLAN, Data rate up to 300 Mbit/s  
 LTE Cat 4, 3GPP Rel. 11, up to 150Mbps downlink and 50Mbps uplink  
 2 x Gigabit LAN interface  
 1 x RS232 or RS485 or RS422 serial interface  
 1 x USB2 Port also for interface extensions  
 1 x relay switch (dependent on connectors)  
 1 x aux input (dependent on connectors)  
 Power supply 10-60V or 802.3af PoE via LAN Port 1  
 Robust aluminum housing with various mounting options

##### Functions:

Configuration via the website, REST-API  
 or by using the MC-Config program.  
 Different bridge modes to connect the LAN clients.  
 - NAT  
 - Single Client NAT  
 - Single Client Cloning  
 - Level 2 Bridge  
 - MWLC Mode  
 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)

Connects worldwide to 2G, 3G or 4G networks  
 Precedence selection to prefer LAN over LTE and vice versa  
 Serial-Client via TCP or UDP



#### Device Options:

##### Mounting:

- 1) side mounting brackets (MC2L-SL...)
- 2) DIN rail mounting clip (MC2L-SC...)

##### Power supply connection:

- 1) 5 pol. M12 connector (MC2L-Sx-M12)  
- always with relay
- 2) 8pol terminal block (MC2L-Sx-WK8)  
- always with relay and auxiliary input
- 3) 3pol M8 connector (MC2L-Sx-M8)
- 4) DC-Jack (MC2L-Sx-J)  
for Plugs with 5 x 2,1mm diameter

##### Antenna connector WLAN:

- 1) 2 x RP-SMA (Standard)
- 2) 1 or 2 TNC or RPTNC

##### Antenna connector LTE:

- 1) 1 x LTE antenna SMA (Standard)
- 2) 1 x LTE + 1 x GNSS SMA antenna

##### 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 – 72V
Antenna connectors	2 x RPSMA (optional TNC or RPTNC)
Sim card slot	1 x Standard/Mini-SIM slot
Power supply	10 – 60 VDC or 802.3af PoE via the LAN Port
Energy consumption	max 10W (4.5W idle)
Operating temperature range	0-60°C
Dimensions	105x125x35mm
Weight	ca. 500g

<b>WLAN-Interface:</b>		
Technologies	802.11 a/b/g/n WLAN (2.4 + 5 GHz Band)	
Antennas:	2 Antennas (2T2R MIMO) up to 300 Mbit /s	
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	802.11b/g/n ETSI 1-13, USA/Canada 1-11 802.11a/n ETSI 19, USA/Canada (U-NII-1 + UNII-2A + U-NII-2C+U-NII-3)	
Data rates	Mode	Data rate
	802.11b:	1, 2, 5.5, 11Mbps
	802.11g / a	6, 9, 12, 18, 24, 36, 48, 54Mbps
	802.11n (20MHz)	1Nss: max. 72.2Mbps 2Nss: max. 144.4Mbps
	802.11n (40MHz)	1Nss: max. 150Mbps 2Nss: max. 300Mbps
Transmit power	802.11b/g 17 dBm	802.11a 15 dBm
	802.11gn 16 dBm	802.11an 15 dBm

<b>LTE-Interface:</b>				
Technologies / Bands	LTE-FDD: B1/B3/B5/B7/B8/B20 LTE-TDD: B38/B40/B41 WCDMA: B1/B5/B8 GSM/EDGE: B3/B8			
Antennas:	1 Antenna + optional GNSS antenna			
GNSS	GPS, GLONASS, BeiDou, Galileo, QZSS			
Certifications	Carrier: Vodafone/ Deutsche Telekom/ SKT/ Telefónica Regulatory: GCF/ CE/ KC/ NCC/ RCM/ FAC/ NBTC/ ICASA Others: WHQL			
Data rates	Mode	max. Data rate	Mode	max. Data rate
	LTE	150 Mbps (DL), 50 Mbps (UL)	TD-SCDMA	4.2Mbps (DL), 2.2Mbps (UL)
	DC-HSPA+	42 Mbps (DL), 5.76 Mbps (UL)	EDGE	236.8Kbps (DL), 236.8Kbps (UL)
	UMTS	384Kbps (DL), 384Kbps (UL)	GPRS	85.6Kbps (DL), 85.6Kbps (UL)
Output Power	Class 3 (23dBm±2dB)for LTE FDD Class 3 (23dBm±2dB)for LTE TDD Class 3 (24dBm +1/-3dB) for TD-SCDMA Class 3 (24dBm +1/-3dB) for UMTS		Class E2 (27dBm ±3dB) for EDGE 850/900MHz Class E2 (26dBm +3/-4dB) for EDGE 1800/1900MHz Class 4 (33dBm ±2dB) for GSM 850/900MHz Class 1 (30dBm ±2dB) for GSM 1800/1900MHz	

**Order codes:**

	<b>Option</b>	<b>Order code</b>
<b>Housing</b>		
	Housing with mounting brackets	MC2L-SL....
	Housing with DIN-rail-clip	MC2L-SC....
<b>Power supply connection</b>		
	M12 connector	MC2L-Sx-M12....
	8pol. Weidmüller terminal block	MC2L-Sx-WK8....
	M8 connector	MC2L-Sx-M8....
	DC-Jack	MC2L-Sx-J....
<b>IO-Option</b>	optional, if not included in connector	
	Relay	MC2L-Sx-....-REL
	Aux-Input	MC2L-Sx-....-INP
<b>Serial</b>	Standard: 1 x RS232	MC2L-Sx-....
	1 x RS422	MC2L-Sx-xx-RS422
	1 x RS485	MC2L-Sx-xx-RS485
<b>Antenna Options WLAN</b>	Standard: 2 x RPSMA	MC2L-Sx-xx-RSMA
	1 or 2 TNC Antenna connector(s)	MC2L-Sx-xx-1(2)TNC
	1 or 2 RPTNC Antenna connector(s)	MC2L-Sx-xx-1(2)RTNC
<b>Antenna Options LTE</b>	Standard: 1 x LTE	MC2L-Sx-....
	1 x GPS antenna connector	MC2L-Sx-....-GPS