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MC2X8-A

Industrial WiFi 6e (802.11ax) Network Bridge

Description:

The MC2X8-A connects components that communicate via Ethernet LAN or serial interfaces to other networks via WLAN
The typical usage area for the MC2L8-A is machine-to-machine communication, locally over WLAN.

Properties:

Hardware:
Processor: iMX8 (NXP)
Memory: 512MByte DDR4-RAM and 4GB Flash
WiFi: 802.11ax for 2.4 + 5 GHz WiFi6 + 6GHz WiFi6e
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
- Single Client Cloning
- Level 2 Bridge
- MWLC Mode
- 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
Serial-Client via TCP or UDP or MQTT
ipv6 + ipv4

Device Options:

Mounting:
1) side mounting brackets (MC2X8-A-**SL**...)
2) DIN rail mounting clip (MC2X8-A-**SC**...)

Power supply connection:
1) 5 pol. M12 connector (MC2X8-A-Sx-**M12**)
- always with relay
2) 8pol terminal block (MC2X8-A-Sx-**WK8**)
- always with relay and auxiliary input

Antenna connector WLAN:
1) 2 x RP-SMA

Serial Interface:
1) 1 x RS232 (Standard)
2) 1 x RS485
3) 1 x RS422

Technical data:

Specification:	
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 (WiFi)*
Power supply	*12 – 60 VDC or 802.3af PoE via the LAN Port*
Energy consumption	*max 7W (4W idle)*
Operating temperature range	*0-60°C*
Dimensions	*105x125x35mm*
Weight	*ca. 500g*

WLAN-Interface:

IEEE 802.11b Section	
Radio and Modulation Schemes	DQPSK , DBPSK and CCK with DSSS
Operating Frequency	2400 ~ 2483.5MHz ISM band
Channel Numbers	13 channels for Worldwide
Data Rate	at most 11Mbps
Media Access Protocol	CSMA/CA with ACK
Transmitter Output Power at Antenna Connector	Typical RF Output Power at each RF chain and at room Temp. 25°C 20.5±2 dBm at 11Mbps
Receiver Sensitivity at Antenna Connector	Typical Sensitivity at each RF chain. @Frame (1000-byte PDUs) Error Rate≤8% at room Temp 25°C -83 dBm for 11Mbps

IEEE 802.11g Section	
Radio and Modulation Schemes	QPSK , BPSK , 16QAM ,64QAM with OFDM
Operating Frequency	2400 ~ 2483.5MHz ISM band
Channel Numbers	13 channels for Worldwide
Data Rate	at most 54 Mbps
Media Access Protocol	CSMA/CA with ACK
Transmitter Output Power at Antenna Connector	Typical RF Output Power at each RF chain and at room Temp. 25°C 17±2 dBm at 54Mbps
Receiver Sensitivity at Antenna Connector	Typical Sensitivity at each RF chain. @Frame (1000-byte PDUs) Error Rate≤10% at room Temp 25°C -71 dBm for 11Mbps

IEEE 802.11a Section	
Radio and Modulation Schemes	QPSK , BPSK , 16QAM ,64QAM with OFDM
Operating Frequency	5.15~5.25 GHz 5.25~5.35 GHz 5.47~5.725 GHz 5.725~5.825 GHz
Data Rate	at most 54 Mbps
Media Access Protocol	CSMA/CA with ACK
Transmitter Output Power at Antenna Connector	Typical RF Output Power at each RF chain and at room Temp. 25°C 17±2 dBm at 54Mbps
Receiver Sensitivity at Antenna Connector	Typical Sensitivity at each RF chain. @Frame (1000-byte PDUs) Error Rate≤10% at room Temp 25°C -71 dBm for 11Mbps

IEEE 802.11n Section	
Radio and Modulation Schemes	QPSK , BPSK , 16QAM ,64QAM with OFDM
Operating Frequency	2.4GHz :2400 ~ 2483.5MHz for ISM band 5.15~5.25 GHz 5.25~5.35 GHz; 5.47~5.725 GHz 5.725~5.825 GHz;
Data Rate	at most 300 Mbps
Media Access Protocol	CSMA/CA with ACK
Transmitter Output Power at Antenna Connector	Typical RF Output Power at each RF chain and at room Temp. 25°C 2.4 GHz Band: 16.5±2dBm at HT20 MCS7 16±2dBm at HT40 MCS7 5 GHz Band: 16±2dBm at HT20 MCS7 16±2dBm at HT40 MCS7
Receiver Sensitivity at Antenna Connector	Typical Sensitivity at each RF chain. @Frame (1000-byte PDUs) Error Rate≤10% at room Temp 25°C 2.4 GHz Band: -69dBm at HT20 MCS7 -66dBm at HT40 MCS7 5 GHz Band: -69dBm at HT20 MCS7 -66dBm at HT40 MCS7

IEEE 802.11ac Section	
Radio and Modulation Schemes	QPSK, BPS, 16QAM, 64QAM, 256QAM with OFDM
Operating Frequency	2.4GHz :2400 ~ 2483.5MHz for ISM band 5.15~5.25 GHz 5.25~5.35 GHz; 5.47~5.725 GHz 5.725~5.825 GHz;
Data Rate	2.4 GHz: at most 400Mbps 5 GHz: at most 1732Mbps
Media Access Protocol	CSMA/CA with ACK

Transmitter Output Power at Antenna Connector	Typical RF Output Power at each RF chain and at room Temp. 25°C 2.4 GHz Band: 15±2dBm at VHT20 MCS8 14.5±2dBm at VHT40 MCS9 5 GHz Band: 15±2dBm at VHT20 MCS8 15±2dBm at VHT40 MCS9 15±2dBm at VHT80 MCS9 15±2dBm at VHT160 MCS9
Receiver Sensitivity at Antenna Connector	Typical Sensitivity at each RF chain. @Frame (1000-byte PDUs) Error Rate≤10% at room Temp 25°C 2.4 GHz Band: -64 dBm at VHT20 MCS8 -58 dBm at VHT40 MCS9 5 GHz Band: -64 dBm at VHT20 MCS8 -58 dBm at VHT40 MCS9 -55 dBm at VHT80 MCS9 -53 dBm at VHT160 MCS9

IEEE 802.11ax Section	
Radio and Modulation Schemes	QPSK, BPS, 16QAM, 64QAM, 256QAM, 1024QAM with OFDMA
Operating Frequency	2.4 GHz :2400 ~ 2483.5MHz for ISM band 5.15~5.25 GHz 5.25~5.35 GHz; 5.47~5.725 GHz 5.725~5.825 GHz;
Data Rate	2.4 GHz: at most 573.5Mbps 5 GHz: at most 2402Mbps
Media Access Protocol	CSMA/CA with ACK
Transmitter Output Power at Antenna Connector	Typical RF Output Power at each RF chain and at room Temp. 25°C 2.4 GHz Band: 14±2dBm at VHT20 MCS11 13.5±2dBm at VHT40 MC11 5 GHz Band: 13±2dBm at HE20 MCS11 13±2dBm at HE40 MCS11 12.5±2dBm at HE80 MCS11 12.5±2dBm at HE160 MCS11
Receiver Sensitivity at Antenna Connector	Typical Sensitivity at each RF chain. @Frame (1000-byte PDUs) Error Rate≤10% at room Temp 25°C 2.4 GHz Band: -58 dBm at HE20 MCS11 -55 dBm at HE40 MCS11 5 GHz Band: -57 dBm at HE20 MCS11 -55 dBm at HE40 MCS11 -50 dBm at HE80 MCS11 -47 dBm at HE160 MCS11

IEEE 802.11ax Section (6GHz)	
Radio and Modulation Schemes	QPSK, BPS, 16QAM, 64QAM, 256QAM, 1024QAM with OFDMA
Operating Frequency	6 GHz : 5.930~7.110GHz
Data Rate	at most 2402Mbps
Media Access Protocol	CSMA/CA with ACK
Transmitter Output Power at Antenna Connector	Typical RF Output Power at each RF chain and at room Temp. 25℃ 6 GHz Band: 11±2dBm at HE20 MCS11 11±2dBm at HE40 MCS11 10.5±2dBm at HE80 MCS11 10.5±2dBm at HE160 MCS11
Receiver Sensitivity at Antenna Connector	Typical Sensitivity at each RF chain. @Frame (1000-byte PDUs) Error Rate≤10% at room Temp 25℃ 6 GHz Band: -55 dBm at HE20 MCS11 -52 dBm at HE40 MCS11 -48 dBm at HE80 MCS11 -46 dBm at HE160 MCS11

Order codes:

	Option	Order code
Housing		
	Housing with mounting brackets	MC2X8-A-S**L....**
	Housing with DIN-rail-clip	MC2X8-A-S**C....**
Power supply connection		
	M12 connector	MC2X8-A-Sx-**M12....**
	8pol. Weidmüller terminal block	MC2X8-A-Sx-**WK8....**
IO-Option	optional, if not included in connector	
	Aux-Input	MC2X8-A-Sx-**....-INP**
Serial	Standard: 1 x RS232	MC2X8-A-Sx-**....**
	1 x RS422	MC2X8-A-Sx-xx-**RS422**
	1 x RS485	MC2X8-A-Sx-xx-**RS485**