LTE Cat-4 / 450MHz Private Network / Cat-M / 5G Industrial Cellular Router

Merlin 3100 Series

- **Versatile LTE cellular router**
  - Zero-touch large scale deployment
  - Multi-service support: LTE Cat-4, 450MHz Private Network, 5G or Cat-M, Ethernet
  - Industrial protocol gateway and conversion
  - Compact design

- **Best-in-class Cybersecurity**
  - Secure Boot ensures software is authentic and unmodified
  - Trusted Platform Module keeps cryptographic keys secure
  - Cybersecurity suite: 802.1X, IPSec encryption, stateful firewall

CE UKCA EN 61000-6-2 Industrial Immunity EN 61000-6-4 Industrial Emission RED Radio equipment directive

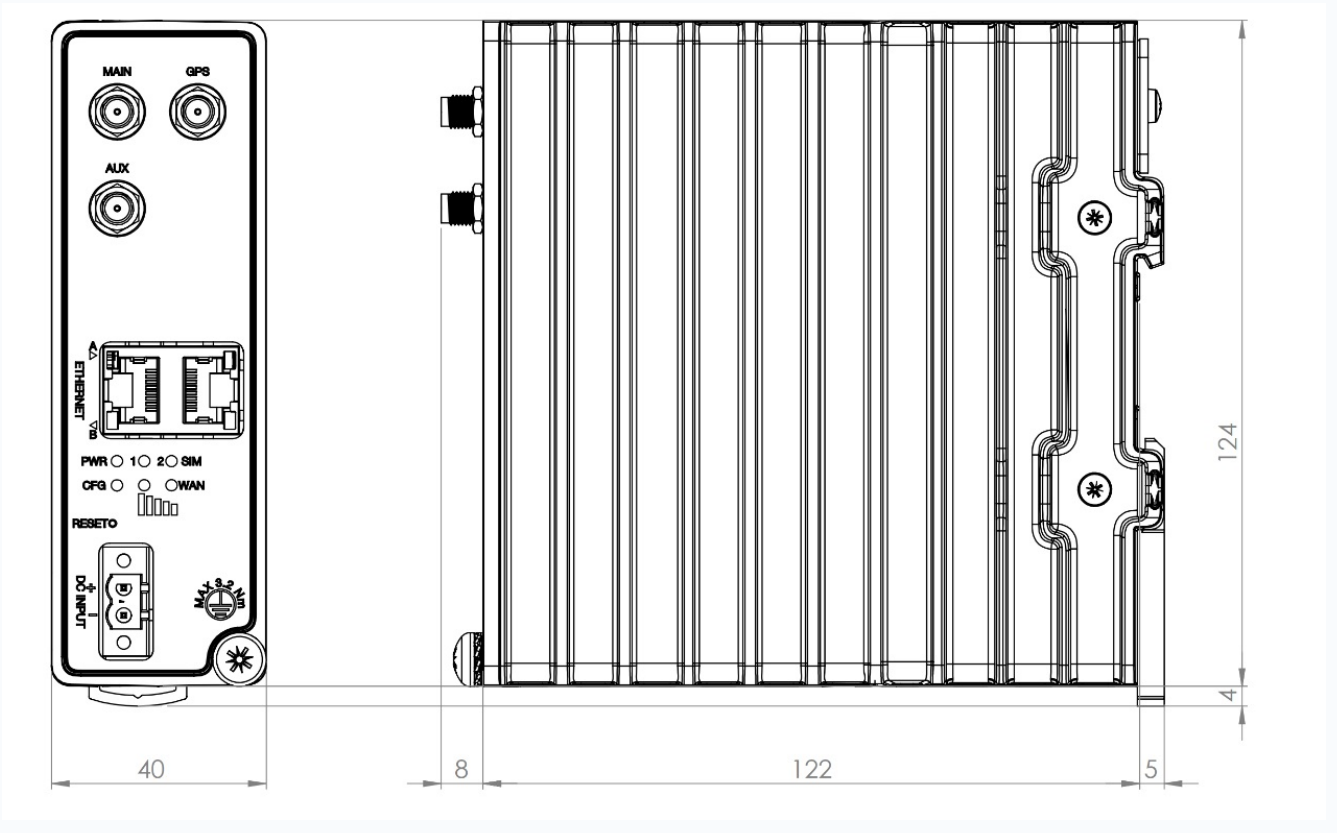
The Merlin series of versatile cellular routers provide high speed data network connectivity for demanding industrial and smart grid applications. Coupled with the Zero Touch deployment software Activator, it provides cost-effective, reliable, and consistent onboarding of routers in large-scale projects.

This compact, rugged unit is suited to tight spaces. Its high MTBF and wide temperature range support maximum service life.

To achieve best-in-class cybersecurity, the Merlin series is equipped with a TPM (Trusted Platform Module) chip that keeps cryptographic keys secure. Secure Boot ensures that the unit boots using only software that is signed and trusted by manufacturer. A set of cybersecurity tools is available as standard including VPN and stateful Firewall support for data security and user authentication.

Specifications - Merlin 3100 Series

Dimensional drawing



Housing	
Dimensions (W x H x D)	40 x 135 x 124 mm
Housing	Full metal
Weight	Approx 420g

Power parameters	
Operating voltage	9 to 36 VDC isolated
Power consumption	4G and Cat-M: 5 W typical. 5G: 8 W typical, 18 W maximum

Environmental	
Temperature, operating	-40 to +70°C
Temperature, storage and transport	-50 to +85°C
Ingress protection	IP30
Humidity, operating	5-95% relative humidity

Approvals	
EMC	• EN/IEC 61000-6-2, Immunity industrial environments • EN/IEC 61000-6-4, Emission industrial environments
Safety	EN 62368-1, Safety Communication Technology

Interface	
Ethernet	Ethernet 2 x 10/100/1000 Mbit/s, Ethernet TX, RJ45
Mobile	LTE Cat-4 or Cat-M1 or 5G
GNSS	Where model supports GNSS: GPS, GLONASS, BeiDou, Galileo
SIM cards	2 x Mini-SIM (2FF) card slots to rear, covered by plate
Antenna connectors	Cat-M - 1 x SMA compatible connector; 4G and 5G RedCap - up to 3 x SMA compatible connectors; 5G - up to 5 x SMA compatible connectors

MTBF hours	
Telcordia	1.524.000 Hours

Software Features	
Management	Web interface (HTTPS), SMS management support, CLI via console, SSHv2, TFTP, SNMPv1/v2c/3, Secure Copy (SCP), Flexible alarm and event system, Port monitoring
Monitoring	Built-in diagnostics and packet tracing, event logging, SNMP Traps, Syslog
IP Routing	IPv4 and IPv6, DHCP, DynDNS, NAT, NAT Traversal, NTP Client, VLAN support, Packet filtering, Port forwarding, BFD, BGPv4, OSPF, RIP (v1 and v2), IPSec/L2TP/GRE, DMVPN, SNMP v1/v2/v3, TLS 1.2, 802.1x authentication, IEC104, QoS, VRRP, VRF
Security	Stateful inspection firewall, RADIUS, TACACS+
IPSec VPN	IKE Version 2, X.509 certificates, ECC, SHA2_512 support, AES_CBC (256), PFS, SCEP, DH_8192, FlexVPN
SCADA Protocol Conversion	Control of I/O from SCADA master, IEC 60870-5-104, IEC 60870-5-101, IEC 61850, Modbus TCP, DNP3, Serial to Ethernet, MQTT
RTU Functionality	Monitoring and Control of I/O from SCADA master, Protocol conversion, Basic PLC functions

Mobile Frequency Bands				
Region	**3G Bands**	**LTE Bands**	**5G NR**	**GNSS**
Global LTE Cat-4	B1, B2, B4, B5, B6, B8, B19	B1, B2, B3, B4, B5, B7, B8, B12, B13, B18, B19, B20, B25, B26, B28, B38, B39, B40, B41	-	Yes
EMEA and Australia Cat-M/NB-IoT Bands 31 & 72	850, 900, 1800, 1900	B1, B2, B3, B4, B5, B8, B12, B13, B14, B18, B19, B20, B25, B26, B27, B28, B31, B66, B72, B85	-	No
Europe / Private Network Band 72	-	B3 ,B7, B20, B72	-	No
Private Network Bands 31 and 40	-	B3, B7, B20, B31, B40	-	No
Global 5G	B1, B2, B4, B5, B8, B19	B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B34, B38, B39, B40, B41, B42, B43, B48, B66, B71	n1/ 2/ 3/ 5/ 7/ 8/ 12/ 13/ 14/ 18/ 20/ 25/ 26/ 28/ 29/ 30/ 38/ 40/ 41/ 48/ 66/ 70/ 71/ 75/ 76/ 77/ 78/ 79	Yes, Passive antenna only

Warranty	
Validity	5 years

Art.no.	Product	Ethernet	SMA Connectors	GNSS	Region
3460-31102	Merlin-3103-T2G-QFR-G-DCi0936	2	3	Yes, Active antenna supported	Global LTE Cat-4
3460-31103	Merlin-3103-T2G-QFX-DCi0936	2	1	No	EMEA and Australia Cat-M/NB-IoT Bands 31 & 72
3460-31104	Merlin-3103-T2G-PFN-DCi0936	2	2	No	Europe / Private Network Band 72
3460-31107	Merlin-3103-T2G-PFT-DCi0936	2	2	No	Private Network Bands 31 and 40
3460-31500	Merlin-3103-T2G-PFO-DCi0936	2	4	Yes, Passive antenna only	Global 5G