

Industrial Cellular routers

M!DGE

M!DGE cellular routers are primarily designed for SCADA & Telemetry applications at critical infrastructure like Power and Water Utilities and Oil & Gas. They are also well suited to many other applications where high reliability is required, such as POS, ATM and Security.



Market leader

- Serial SCADA protocols
- SFP Interface
- Expansion ready - mPCIe
- Hybrid networks

Performance

- 4G/LTE, 3G/UMTS, 2G/EDGE
- 2× SIM
- Static & Dynamic routing
- QoS

Security

- IPsec, OpenVPN
- RADIUS, SNMPv3
- Firewall, VLAN
- Digitally signed FW

Reliability

- Industrial hardened design
- Approved for Power substations
- -40 to +70 °C
- MTBF > 100 years



Technical parameters

	MIDGE3	MIDGE2
Frequency bands	One world wide model	3 models: EU, Asia, Americas
CPU	800 MHz Dual Core	600 MHz Single Core
Ethernet	4x 1 Gb/s	4x 100 Mb/s
SFP	Yes	No
Inputs / Outputs	3x DI, 3x DO, 1x DiffDI	1x DI, 1x DO
Responsive web / Wifi management	Yes / Yes	No / No

Cellular interface	MIDGE3		
Frequency bands W	4G LTE - Band 1 (2100 MHz), Band 2 (1900 MHz), Band 3 (1800 MHz), Band 4 (2100 MHz), Band 5 (850 MHz), Band 7 (2600 MHz), Band 8 (900 MHz), Band 12 (700 MHz), Band 13 (700 MHz), Band 18 (850 MHz), Band 19 (850 MHz), Band 20 (800 MHz), Band 26 (850 MHz), Band 28 (700 MHz), Band 38 (2600 MHz), Band 40 (2300 MHz), Band 41 (2500 MHz), Band 66 (2100 MHz) 3G UMTS/HSDPA/HSUPA - Band 1 (2100 MHz), Band 2 (1900 MHz), Band 3 (1800 MHz), Band 4 (2100 MHz), Band 5 (850 MHz), Band 6 (850 MHz), Band 8 (900 MHz), Band 19 (850 MHz) 2G GSM/GPRS/EDGE - GSM 850 MHz, E-GSM 900 MHz, DCS 1800 MHz, PCS 1900 MHz		
Cellular interface	MIDGE2		
Frequency bands E	4G LTE - Band 20 (800 MHz), Band 5 (850 MHz), Band 8 (900 MHz), Band 3 (1800 MHz), Band 1 (2100 MHz), Band 7 (2600 MHz) 3G UMTS/HSDPA/HSUPA - Band 5 (850 MHz), Band 8 (900 MHz), Band 2 (1900 MHz), Band 1 (2100 MHz) 2G GSM/GPRS/EDGE - GSM 850 MHz, E-GSM 900 MHz, DCS 1800 MHz, PCS 1900 MHz		
Frequency bands P	4G LTE - Band 28 (750 MHz), Band 5 (850 MHz), Band 8 (900 MHz), Band 3 (1800 MHz), Band 1 (2100 MHz), Band 7 (2600 MHz) 3G UMTS/HSDPA/HSUPA - Band 5 (850 MHz), Band 8 (900 MHz), Band 2 (1900 MHz), Band 1 (2100 MHz) 2G GSM/GPRS/EDGE - GSM 850 MHz, E-GSM 900 MHz, DCS 1800 MHz, PCS 1900 MHz		
Frequency bands A	4G LTE - Band 17 (700 MHz), Band 5 (850 MHz), Band 4 (1700 MHz), Band 2 (1900 MHz), Band 7 (2600 MHz) 3G UMTS/HSDPA/HSUPA - Band 5 (850 MHz), Band 8 (900 MHz), Band 4 (AWS, i.e. 1700 MHz), Band 2 (1900 MHz), Band 1 (2100 MHz) 2G GSM/GPRS/EDGE - GSM 850 MHz, E-GSM 900 MHz, DCS 1800 MHz, PCS 1900 MHz		
Frequency bands U	3G UMTS/HSDPA/HSUPA - Band 5 (850 MHz), Band 8 (900 MHz), Band 2 (1900 MHz), Band 1 (2+B1:B21) 2G GSM/GPRS/EDGE - GSM 850 MHz, E-GSM 900 MHz, DCS 1800 MHz, PCS 1900 MHz		
Cellular interface	MIDGE3		MIDGE2
Data rates	Up to 150 Mb/s downlink; 50 Mb/s uplink		
SIM slot	2x Micro SIM		
Electrical			
Primary power	10 – 50 VDC	12 – 24 VDC, +/- 20%	
Power consumption	Average 7W		
Interfaces			
Ethernet	4x Ethernet 10/100/1000 Base-T, Auto MDX bridged or routed	4x RJ45	4x Ethernet 10/100 Base-T, Auto MDX bridged or routed
SFP	1x 10/100/1000 Base or T/1000Base-SX or 1000Base-LX	1x SFP	No
Serial	1x RS232/RS485 SW configurable 600 b/s – 1 Mb/s	Terminals (5 pins)	1x RS232 300 b/s – 115 kb/s Terminals (3 pins)
USB	1x USB 3.0 / Host A		1x USB 2.0 / Host A
Inputs/Outputs	1x HW alarm input, 1x HW alarm output, 1x Sleep input	Power connector	1x DI, 1x DO
Antenna	2x SMA female – receiver diversity		
Optional Expansions			
mPCI slot	Cellular module or GPS or 2x RS232 + 2x DI, 2x DO, 1x difDI		Cellular module or GPS
Proprietary extension slot	No		COMIO: RS232/RS485 + 1x DI, 1x DO
Environmental			
IP Code (Ingress Protection)	IP40		
MTBF (Mean Time Between Failure)	> 900 000 hours (> 100 years)	> 220.000 hours (> 25 years)	
Operating temperature	-40 to +70 °C (-40 to +158 °F)		
Operating humidity	5 to 95% non-condensing		
Mechanical			
Casing	Metal		
Dimensions	132 H x 43 W x 110 D mm (5.20 x 1.69 x 4.33 in)	125 H x 45 W x 110 D mm (4.9 x 1.8 x 4.3 in)	
Weight	0.50 kg (1.1 lbs)	0.45 kg (1.0 lbs)	
Mounting	DIN rail, optionally: Flat-bracket or L-bracket		
Security			
Management	HTTPS (Web)		HTTPS (Web), SSH (CLI)
Role-based access control (RBAC)	4 levels (Guest, Tech, SecTech, Admin)		2 levels (User, Admin)
IPsec	Yes		Yes
Firewall	Layer 2 – MAC, Layer 3 – IP, Layer 4 – TCP/UDP, SMS filter		
AAA protocol	RADIUS		
FW	Digitally signed		
HW tamper	Case opening evidence		
SW			
Fallback management	Yes		
Connection supervision	Yes		
Automatic connect recovery	Yes		
SMS management	Yes		
Routing	Static / Dynamic		
BGP/OSPF/BABEL	Yes/Yes/Yes	Yes/Yes/No	
QoS	Yes		
NAPT	Yes		
User protocols on Ethernet	Yes		
Serial SCADA protocols	DNP3, DF1, IEC101, Modbus RTU, PR2000, RDS, Siemens 3964(R), COMLI, SAIA S-bus, Mars-A, UNI, Async Link		
Serial to IP convertors	DNP3 / DNP3 TCP, Modbus RTU / Modbus TCP, Terminal servers		
VPN	IPsec, GRE	OpenVPN, IPsec, PPTP, GRE	
VRRP	No	Yes	
NTP	Client, Server		
SNMP	v1, v2c, v3		
Software Development Kit	No	Full featured	
Linux container	No	LXC	
Approvals	CE, FCC, ... Ask for others		

All information provided is preliminary and may change after the product is launched.

