

ROTEADORES CELULARES INDUSTRIAIS

M!DGE

5G

4G

LTE 450

LTE-M
NB-IoT

Os roteadores celulares M!DGE são projetados principalmente para aplicações SCADA e Telemetria em infraestruturas críticas, como concessionárias de energia, água, petróleo e gás. Eles também são adequados para muitas outras aplicações onde é necessária alta confiabilidade, como POS, ATM e Segurança.



LÍDER NO MERCADO

- 5G, 4G, LTE 450, NB-IoT
- 2× SIM + eSIM
- Interface SFP
- Extensão mPCIe - 2ª rede celular, Wi-Fi, GPS...

DESEMPENHO

- Protocolos SCADA de série
- Encaminhamento estático e dinâmico
- Diagnóstico avançado, API
- Redes híbridas

CONFIABILIDADE

- Design industrial reforçado
- Aprovado para subestações de energia
- -40 a +70 °C
- MTBF > 100 anos, fabricado na Rep. Checa, UE

SEGURANÇA

- IPsec, OpenVPN
- RADIUS, SNMPv3
- Firewall, VLAN
- FW digitalmente assinado



RACOM

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PARÂMETROS TÉCNICOS

	MIDGE3	MIDGE3e
mPCIe	Yes	No
Interfaces	4× ETH, 1× SFP, 2× COM, 1× USB	2× ETH, 2× COM, 1× USB
Inputs / Outputs	2× DI, 2× DO, 1× DiffDI	No
HW tamper	Yes	No
Dynamic routing	BGP / OSPF / Babel	No
Link management	Yes	No

Model	Order Code	Frequency bands	Data rates
5G* MIDGE3	'Q' Telit FN990 Worldwide	5G Rel.17: n1, n2, n3, n5, n7, n8, n12, n13, n14, n18, n20, n25, n26, n28, n29(SDL), n30, n38, n40, n41, n48, n53, n66, n67(SDL), n70, n71, n75(SDL), n76(SDL), n77, n78, n79, n91, n92, n93 ,n94	NSA: 3.6 Gbps DL, 0.55 Gbps UL SA: 2.8 Gbps DL, 0.45 Gbps UL
		4G Cat 20: B1, B2(B25), B3, B4(B66), B26(B5/B18/B19/B26), B7, B8, B12(B17), B13, B14, B20, B28, B29(SDL), B30, B32(SDL), B34, B38, B39, B40, B41, B42, B43, B46(SDL), B48, B67(SDL), B68, B70, B71	2 Gbps DL, 210 Mbps UL
		3G HSPA+ Rel 8: B1, B2, B4, B5, B8	42 Mbps DL, 11 Mbps UL
4G MIDGE3, MIDGE3e mPCle ext. board	'W' Cinterion PLS83-W Worldwide	4G LTE (also 5G NSA), 3GPP Release 10: B1, B2, B3, B4, B5, B7, B8, B12, B13, B18, B19, B20, B26, B28, B38, B40, B41, B66	Cat.4, DL 150 Mb/s, UL 50 Mb/s
		3G UMTS/HSDPA/HSUPA, 3GPP Release 7: B1, B2, B3, B4, B5, B6, B8, B19	HSDPA Cat.10, HSUPA Cat.6: DL 14.4 Mb/s, UL 5.76 Mb/s
		2G GSM/GPRS/EDGE, 3GPP Release 4: GSM 850 MHz, E-GSM 900 MHz, DCS 1800 MHz, PCS 1900 MHz	Class 12, DL 237 kb/s, UL 237kb/s
LTE - M NB - IoT MIDGE3, MIDGE3e mPCle ext. board	'M' Cinterion TX62-W-C, EMEA	4G LTE Cat M1, 3GPP Release 14: B1, B3, B8, B20, B28, B31, B72	M1 - DL 300 kb/s, UL 1.1 Mb/s NB1 - DL 27 kb/s, UL 63 kb/s NB2 - DL 124 kb/s, UL 158 kb/s
	'O' Cinterion TX62-W-B, FCC	4G LTE Cat NB1/2, 3GPP Release 14: B1, B3, B8, B20, B28, B31, B72	
		4G LTE Cat M1, 3GPP Release 14: B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B27, B28, B66, B85	
		4G LTE Cat NB1/2, 3GPP Release 14: B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B28, B66, B71, B85	'R' Telit ME310G1-W2, LatAm
4G LTE Cat M1, NB1, NB2 3GPP Release 14: B1, B3, B5, B8, B20, B28, B31, B72, B87, B88			
Electrical		MIDGE3	MIDGE3e
Primary power		10 – 50 VDC	
Power consumption		Average 7W	
Interfaces			
SIM slot		2× Micro SIM + 1× eSIM ¹⁾	2× Micro SIM
Ethernet		4× Ethernet 10/100/1000 Base-T, Auto MDX, bridged or routed	4× RJ45
SFP		1× 10/100/1000 Base or T/1000Base-SX or 1000Base-LX	1× SFP
Serial		1× RS232/RS485 or 2× RS232 ²⁾ SW configurable 2× RS232 (mPCle extension board ³⁾ 600 b/s – 1 Mb/s	Terminals 1× RJ45
USB		1× USB 3.0 / Host A	
Inputs/Outputs		1× HW alarm input, 1× HW alarm output, 1× Sleep input 2× DI, 2× DO, 1× difDI (when mPCle-COMS is not used)	Power connector RJ45
Antenna		2× SMA female – receiver diversity (2x2 MIMO) + connectors for optional extension board	1× HW alarm input, 1× HW alarm output, 1× Sleep input Power connector
Optional Extensions		1× mPCle: Cellular module ('W' or 'M' or 'O' or 'R') or 2× RS232 ³⁾ or GPS or Wi-Fi	2× SMA female – receiver diversity (2x2 MIMO)
Environmental			
IP Code (Ingress Protection)		IP40	
MTBF (Mean Time Between Failure)		> 100 years	
Operating temperature		–40 to +70 °C (–40 to +158 °F)	
Operating humidity		5 to 95% non-condensing	
Mechanical			
Casing		Metal	
Dimensions		132 H × 43 W × 110 D mm (5.20 × 1.69 × 4.33 in)	
Weight		0.50 kg (1.1 lbs)	
Mounting		DIN rail, optionally: Flat-bracket or L-bracket	
Security			
Management		HTTPS (Web or API)	
Role-based access control (RBAC)		4 levels (Guest, Tech, SecTech, Admin)	
IPsec, OpenVPN		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	No
SW			
Fallback management		Yes	
Connection supervision		Yes	
Automatic connect recovery		Yes	
SMS management		Yes	
Routing		Static / Dynamic - BGP / OSPF / Babel	Static
Link management		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, PPP, Transparent	
Serial to IP convertors		DNP3 / DNP3 TCP, Modbus RTU / Modbus TCP, Terminal servers	
VPN		IPsec, OpenVPN, GRE	
NTP		Client, Server	
SNMP		v1, v2c, v3	
Approvals		CE, FCC, ... Ask for others	

Technical parameters are subject to change without prior notification. For more details see [User manuals](#).

¹⁾ eSIM only for 5G
²⁾ only for 'R' Order Code
³⁾ not available for 'R' Order Code
*) Pending

