

# 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

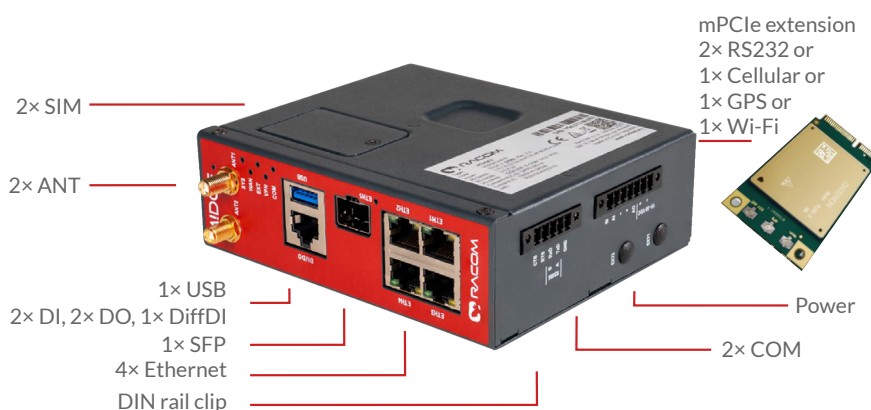
- Protocolos SCADA de série
- Encaminhamento estático e dinâmico
- Diagnóstico avançado, API
- Redes híbridas

## 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



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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*<br><br>MIDGE3                                              | 'Q'<br>Telit FN990<br>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<br>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<br><br>MIDGE3, MIDGE3e<br>mPCIe ext. board                  | 'W'<br>Cinterion PLS83-W<br>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:<br>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<br>NB - IoT<br><br>MIDGE3, MIDGE3e<br>mPCIe ext. board | 'R'<br>Telit ME310G1-W2<br>EU, Anatel    | 4G LTE Cat M1, NB1, NB2 3GPP Release 14: B1, B3, B5, B8, B20, B28, B31, B72, B87, B88                                                                                                              | M1 - DL 588 kb/s, UL 1 Mb/s<br>NB1 - DL 27 kb/s, UL 63 kb/s<br>NB2 - DL 120 kb/s, UL 160 kb/s |
|                                                                | 'S'<br>Telit ME310G1-WW<br>EU, FCC, APAC | 4G LTE Cat M1, NB1, NB2 3GPP Release 14: B1, B2, B3, B4, B5, B8, B8_US, B12, B13, B18, B19, B20, B25, B26, B27, B28, B66, B71, B85                                                                 |                                                                                               |

| Electrical                       | MIDGE3                                                                                                                          |                         | MIDGE3e                                                                                   |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------|
| Primary power                    | 10 – 50 VDC                                                                                                                     |                         |                                                                                           |
| Power consumption                | Average 7W                                                                                                                      |                         |                                                                                           |
| Interfaces                       |                                                                                                                                 |                         |                                                                                           |
| SIM slot                         | 2× Micro SIM + 1× eSIM <sup>1)</sup>                                                                                            |                         | 2× Micro SIM                                                                              |
| Ethernet                         | 4× Ethernet 10/100/1000 Base-T, Auto MDX, bridged or routed                                                                     | 4× RJ45                 | 2× Ethernet 10/100/1000 Base-T, Auto MDX, bridged or routed<br>2× RJ45                    |
| SFP                              | 1× 10/100/1000 Base or T/1000Base-SX or 1000Base-LX                                                                             | 1× SFP                  | No                                                                                        |
| Serial                           | 1× RS232/RS485 or 2× RS232 <sup>2)</sup> SW configurable<br>2× RS232 (mPCIe extension board <sup>3)</sup> )<br>600 b/s – 1 Mb/s | Terminals<br>1× RJ45    | 1× RS232/RS485 or 2× RS232 <sup>2)</sup> Terminals<br>SW configurable<br>600 b/s – 1 Mb/s |
| USB                              | 1× USB 3.0 / Host A                                                                                                             |                         |                                                                                           |
| Inputs/Outputs                   | 1× HW alarm input, 1× HW alarm output, 1× Sleep input<br>2× DI, 2× DO, 1× difDI (when mPCIe-COMS is not used)                   | Power connector<br>RJ45 | 1× HW alarm input, 1× HW alarm output,<br>1× Sleep input<br>Power connector               |
| Antenna                          | 2× SMA female – receiver diversity (2x2 MIMO) + connectors for optional extension board                                         |                         | 2× SMA female – receiver diversity (2x2 MIMO)                                             |
| Optional Extensions              | 1× mPCIe: Cellular module ('W' or 'M' or 'O' or 'R') or 2x RS232 <sup>3)</sup> or GPS or Wi-Fi                                  |                         | No                                                                                        |
| 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, SAIAS-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](#).

<sup>1)</sup> eSIM only for 5G  
<sup>2)</sup> only for 'R' Order Code  
<sup>3)</sup> not available for 'R' Order Code  
\*) Pending

