

# Le Modem Radio le plus rapide

# RipEX

Le RIPEX est une plate-forme radio offrant un service de transfert de données sans-fil, disponible 24/7. Le RIPEX est utilisé pour des applications critiques telles que le SCADA, la télémétrie et les infrastructures des réseaux d'énergie, des réseaux d'eau ou de l'exploitation pétrolières et de gaz.



## Leader du marché

- 1,7Mbps, 256 QAM
- Routage Dynamique
- Radio et Cellulaire en un seul produit
- Aucune limite de couverture

## Performance

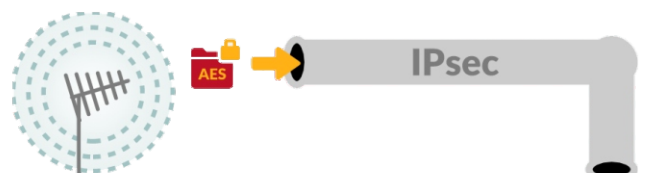
- 160, 300, 400, 800, 900MHz
- CPFSK, 256QAM
- Canaux de 6,25 à 300kHz
- 10W, Half et Full-Duplex

## Fiabilité

- Design industriel durci -40° à +70°C
- Test unitaire en étuve
- MTBF supérieur à 100 ans
- Routes de backup

## Sécurité

- IPsec, AES256, RADIUS
- Firewall, VLAN
- Firmware à signature digitale, boot sécurisé



# Spécifications Techniques

	RipEX2	RipEX2e	RipEX
Max. Speed	1.7 Mb/s @ 256QAM	250 kb/s @ 64QAM	166 kb/s @ 16DEQAM
Speed @ 25 kHz	167 kb/s	125 kb/s	83 kb/s
Channel spacing	6.25 – 300 kHz	6.25 – 50 kHz	6.25 – 50 kHz
Interfaces	4x ETH, 1x SFP, 1x COM, 1x USB	2x ETH, 1x COM, 1x USB	1x ETH, 2x COM, 1x USB
mPCIe	Yes	No	No
Full duplex	Yes	No	No

Radio parameters	RipEX2	RipEX2e	RipEX
Frequency bands	135–175; 285–335; 335–400; 400–470; 450–520; 803 – 897; 868 – 960 MHz		135–154; 154–174; 215-240; 300–320; 320–340; 340–360; 368–400; 400–432; 432–470; 470-512; 928–960 MHz
Channel spacing	6.25; 12.5; 25; 50; 100; 150; 200; 250; 300 kHz	6.25; 12.5; 25; 50 kHz	6.25; 12.5; 25; 50 kHz
Frequency stability	+/- 0.5 ppm		+/- 1.0 ppm
Modulations	QAM: 256QAM, 64QAM, 16DEQAM, D8PSK, $\pi/4$ DQPSK, DPSK FSK: 4CPFSK, 2CPFSK	QAM: 64QAM, 16DEQAM, D8PSK, $\pi/4$ DQPSK, DPSK FSK: 4CPFSK, 2CPFSK	QAM: 16DEQAM, D8PSK, $\pi/4$ DQPSK, DPSK FSK: 4CPFSK, 2CPFSK
FEC (Forward Error Correction)	2/3; 3/4; 5/6; Off		3/4; Off
Gross data rate	up to 1.7 Mb/s		up to 167 kb/s
RF Output power	20-40 dBm PEP (0.1-10 W RMS), 1 dB step programmable		20-40 dBm PEP (0.1-10 W RMS), 9 levels programmable
Duty cycle	Continuous		
Rx to Tx Time	< 0.7 ms @ 25 kHz; < 1 ms @ 12.5 kHz channel		< 1.5 ms
Sensitivity	- 97 dBm (256QAM; 12.5 kHz; BER 10-6; 2/3 FEC) -117 dBm (2CPFSK; 12.5 kHz BER 10-6; 3/4 FEC)	- 101 dBm (64QAM; 12.5 kHz; BER 10-6; 2/3 FEC) -117 dBm (2CPFSK; 12.5 kHz BER 10-6; 3/4 FEC)	- 99 dBm (16DEQAM; 12.5 kHz; BER 10-6; 3/4 FEC) -111 dBm (2CPFSK; 12.5 kHz BER 10-6; 3/4 FEC)
<b>Electrical</b>			
Primary power	10 to 30 VDC, negative GND		
Rx	8.3 W @ 24 V		4.8 W @ 24 V
Tx	12 – 40 W @ 24 V		13 – 38 W @ 24 V
Sleep mode	0.01 W		
<b>Interfaces</b>			
Ethernet	4x 10/100/1000 Base-T Auto MDI/MDIX	4x RJ45	2x 10/100/1000 Base-T Auto MDI/MDIX 2x RJ45
SFP	1x 10/100/1000 Base or T/1000Base-SX or 1000Base-LX	1x SFP	No
Serial	1x RS232/RS485 SW configurable 2x RS232 (mPCIe expansion board) 600 b/s – 1 Mb/s	1x DB9F 1x RJ45	1x RS232/RS485 SW configurable 600 b/s – 1 Mb/s
USB	USB 3.0 / Host A		1x RS232 1x RS232/RS485 SW configurable 300 b/s – 115 kb/s
Antenna	2x TNC female @ 50 ohms SW configurable: 1x Rx/Tx or 1x Rx + 1x Tx		USB 1.1 / Host A
Inputs/Outputs	1x HW alarm input, 1x HW alarm output, 1x Sleep input, 2x DI, 2x DO, 1x difDI (when mPCIe-COMs is not used)	1x TNC female @ 50 ohms, Rx/Tx	1x TNC female @ 50 ohms (Rx/Tx) or 2x TNC (1x Rx + 1x Tx) - different HW model
Optional Expansions	1x mPCIe: Cellular module or 2x RS232 or GPS	No	GPS
<b>Indication LEDs</b>			
LED panel	5x tri-color status LEDs (SYS, AUX, Rx, Tx, COM)		7x tri-color status LEDs (Power, ETH, COM1, COM2, Rx, Tx, Status)
ETH	4x RJ45 (Link and Activity LEDs), 1x SFP (Status LED)		2x RJ45 (Link and Activity LEDs)
<b>Environmental</b>			
IP Code (Ingress Protection)	IP41, IP42, IP52		IP40, IP51
MTBF (Mean Time Between Failure)	> 900 000 hours (> 100 years)		
Operating temperature	- 40 to +70 °C (- 40 to +158 °F)		
Operating humidity	5 to 95% non-condensing		
<b>Mechanical</b>			
Casing	Rugged die-cast aluminium		
Dimensions	60 H x 185 W x 125 D mm (2.34 x 7.2 x 4.9 in)		50 H x 150 W x 118 D mm (1.97 x 5.9 x 4.65 in)
Weight	1.55 kg (3.4 lbs)		1.1 kg (2.4 lbs)
Mounting	DIN rail, L-bracket, Flat-bracket, 19" Rack chassis		
<b>Radio channel</b>			
Radio protocols	Transparent @ Bridge; Flexible, Base driven @ Router		
Routing (Radio channel included)	Static, Dynamic		Static, Backup routes
Multi master applications	Yes		
Report by exception	Yes		
Collision Avoidance Capability	Yes		
Remote to Remote communication	Yes		
Repeaters	Store-and-forward; Every unit; Unlimited number		
QoS	8 levels on all interfaces, Radio included		
<b>SCADA protocols</b>			
Serial	DNP3, DF1, IEC101, Modbus RTU, PR2000, RDS, Siemens 3964(R), COMLI, SAIA S-bus, Mars-A, UNI, Async Link...		
Ethernet	Modbus TCP, IEC104, DNP3 TCP, Comli TCP...		
Serial to IP converters	Modbus RTU / Modbus TCP, DNP3 / DNP3 TCP, Terminal server		
<b>Security</b>			
Management	HTTPS (Web), SSH (CLI)		
Role-based access control (RBAC)	4 levels (Guest, Tech, SecTech, Admin)		2 levels (Guest, Admin)
Encryption	AES256 - CCM		
VPN	IPsec, GRE		
VLAN	IEEE 802.1Q (tagging), Q-in-Q for Transparent mode		
AAA protocol	RADIUS		No
Firewall	Layer 2 - MAC, Layer 3 - IP, Layer 4 - TCP/UDP		
FW	Digitally signed, Secure boot		
HW tamper	Case opening evidence		No
<b>Diagnostics</b>			
Radio link testing	Ping with RSS, MSE (DQ)		
Logs	Status, Event log		Status
Statistics	Historical and differential statistics (Rx/Tx packets etc.) for all interfaces, for Radio channel in addition RSS, MSE (DQ), Repeats etc.		
Monitoring	Real time analysis of all interfaces (Radio, ETH 1-5, COM 1-3, Cellular...)		
NTP	Client, Server		
SNMP	SNMPv1, SNMPv2c, SNMPv3, SNMP Trap / Inform alarms generation as per settings		
SMS	SMS alarms generation as per settings		No
Approvals	CE (RED), FCC, ... Ask for others		No

Les données techniques sont sujettes à modification sans notification préalable. Pour plus d'informations consultez le [manuel utilisateur](#).

