

RTDI-451

4G-LTE SECURE ROUTER SMART-GRID COMMUNICATIONS



Description

RTDI-451 is a ruggedized 4G/LTE router aimed at developing secure Smart-Grid communications over the 4G/LTE mobile network.

RTDI-451 embeds extensive cybersecurity features. Its hardware design is secured by a Secure-Element to store secret information including a unique authentication certificate. Many authentication, encryption and security management protocols are supported including multiple IPSec tunnels for secure communications and SCEP for automated periodic X.509 certificate management. Encryption is optimized by hardware AES implementation for best performances. RTDI-451 is designed and manufactured according to most stringent cybersecurity rules.

RTDI-451 is ruggedized for best operation in the electricity transport and distribution substation. Its design provides extended electromagnetic immunity and dielectric strength.

RTDI-455 is aimed at moving modem and Public Switched Telephone Network (PSTN) communications over IP. It embeds a FXS interface and a multimode modem that emulate the PSTN network and modem connection to the central site server. Communications are secured by IPSec tunnels with strong encryption and authentication ciphers. Modem is compatible with the ITU-T Vxx standards.

MULTI WAN

4G / LTE
Ethernet

CYBERSECURITY

HW Secure-Element
Secure-Boot
PKI SCEP
VPN IPSec
Firewall

POTS MODEM

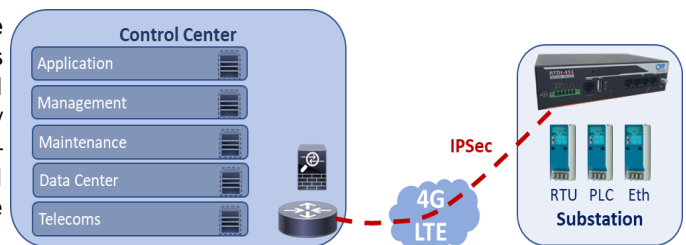
PSTN Migration

RUGGEDIZED

Extended temperature
Extended isolation
Electromagnetic

Applications

RTDI-451 is a perfect solution for the Smart-Grid development thanks to its ruggedized design, its extended interface isolation and cybersecurity protocols. It brings excellent added-value to electricity, water and transportation networks that are facing major cybersecurity issues



RTDI-455 enables a smooth migration to IP of PSTN and modem communication for long-lasting systems in utility substations, in metering and other remote automated systems



Specifications

4G/LTE network		Modem—POTS interface - RTDI-455	
Standards	<ul style="list-style-type: none"> • LTE CAT 4 : 150 Mbps DL & 50 Mbps UL • LTE FDD: B1/B3/B7/B8/B20/B28A • LTE TDD: B38/B40/B41 • WCDMA: B1/B8 • GSM: B3/B8, 850/900/1800/1900 MHz 	PSTN interface	<ul style="list-style-type: none"> • FXS, 600 Ohms
SIM & antenna	<ul style="list-style-type: none"> • 2x SIM card holders, 2FF format • 2x SMA connectors 	Modem	<ul style="list-style-type: none"> • V21, V22, V22Bis, V23, V32, V32Bis, V34 • V42, V42Bis, NMP4-5
Ethernet interfaces		General characteristics	
Ethernet	<ul style="list-style-type: none"> • 1x WAN/LAN 10/100BaseT • 3x LAN 10/100 BaseT • 2 kV isolation 	Enclosure	<ul style="list-style-type: none"> • Compact metallic enclosure • DIN rail mounting clip • IP-40 protection
RS232 interface		Interfaces	<ul style="list-style-type: none"> • 4x Ethernet RJ45, 10/100BT • 1x RS232, RJ45 • 2x SMA for 4G/LTE antennas • 1x SMA for GNSS GPS antenna • 1x FXS modem (RTDI-455) RJ11 • 1x USB H/D port • 1x digital input • 1x dry relay output • 2x 12-24 Vdc power inputs
Serial Port	<ul style="list-style-type: none"> • 1x RS232, RJ45, TXD, RXD, RTS, CTS • 200 to 115,200 bps 	Dimensions	<ul style="list-style-type: none"> • 178 x 120 x 44 mm
Communication protocols		Weight	<ul style="list-style-type: none"> • 0.95 kg
Routing	<ul style="list-style-type: none"> • IP v4, IP v6, dual stack • Static, RIP v1/2, OSPF, GRE • NAT, NAT64 	Operating temperature	<ul style="list-style-type: none"> • -20 to +70 °C • no fan
VPN	<ul style="list-style-type: none"> • OpenVPN, SSL, AES-256 • IPSec • 12x tunnels • IKE v2, L2TP • X.509 certificates, SCEP • VPN Keep-Alive, IGMP-TCP 	Hygrometry	<ul style="list-style-type: none"> • 10 to 95% HR
Ethernet	<ul style="list-style-type: none"> • VLAN, 802.1q • QoS, 802.1p, CoS, DSCP • LLDP • 802.1X, Radius 	Power supply	<ul style="list-style-type: none"> • 12-24 Vdc • 7 W typical, 12 W max
Security	<ul style="list-style-type: none"> • Firewall • ACL, MAC & IP filter • Hardware Secure-Element • Secure-Boot • ASIC encryption processor • DNS • DynDNS • SNTP • QoS 	MTBF	<ul style="list-style-type: none"> • 380 000 Hours
Other features	<ul style="list-style-type: none"> • DHCP Server, Client, Relay • UPnP • SMS : reboot, VPN control, status, alarm relay control • Alarm 	Environment	<ul style="list-style-type: none"> • EN-61000-6-2, EN-61000-6-4, IEC-61850-3 • EN-61328-1
Management			
Protocols	<ul style="list-style-type: none"> • http, https, ssh, snmp v3, syslog • Serveur Web Français, Anglais 		
Management	<ul style="list-style-type: none"> • 2x banques mémoires de firmware • NTP 		
Light indicators	<ul style="list-style-type: none"> • System • VPN • 4G/LTE connection • 4G/LTE signal strength • Ethernet Link & Activity 		
Local interface	<ul style="list-style-type: none"> • 1x USB Host & Device 		

Ordering information

Reference	4G-LTE	Ethernet	RS232	USB H/D	DI / DO	GNSS	FXS Modem	Security	Isolation
RTDI-451	1	4xRJ45	1	1	1+1	1	-	SW+HW	Extended
RTDI-455	1	4xRJ45	1	1	1+1	1	1	SW+HW	Extended



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