

Industrial 10 FE/8 PoE, 4GbE, Managed L3 Routing Switch

JetNet 7714G-M12



The JetNet 7714G-M12 is a Layer-3 routing Switch with 10 ports Fast Ethernet M12-D, 4 ports Gigabit Ethernet M12-A interfaces, and the Fast Ethernet also embedded 8 ports PSE for PoE application. The system supports wide range power input to compliance most of modern train, and secure the passengers' safety with isolated electrical power system design. The system also design with Ingress protect grade 30 to offer anti-dust, water-proof, anti-vibration/shock for the railcars, MRT trains. The 8 PSE interface enabled system to powering remote IP cameras, low power devices or 3G/LTE/WiFi device through Ethernet cable. With the JetNet 7714G L3 PoE Switch, it can enlarge and connective all of application for modern train Ethernet communication system.



Features

- ▶ 10 ports Fast Ethernet M12-D, 4 Gigabit M12-A
- ▶ 8 IEEE 802.3at PSE embedded in Fast Ethernet
- ▶ Non-Blocking, High Speed Network Switching Fabric
- ▶ EN50155 Railway on-board power system design
- ▶ Network Redundancy - MSR (Multiple Super Ring), ITU-T G.8032 ERPS, RSTP, MSTP, Super Chain
- ▶ Fully Device Management - SNMP v1/v2c/v3, RMON, Web UI, Telnet and Local Console
- ▶ Friendly Device and Network Topology recovery utility - Korenix View, Korenix NMS
- ▶ Advanced Network Security - MAC security, IEEE 802.1x Port Based access control, IEEE 802.1x Radius Server authentication, 802.1x MAB, Deny of Service, IP Source Guard, Deny of ARP Inspection
- ▶ Layer 2 Network Performance - IEEE802.1Q VLAN, Private VLAN, Trunk, Traffic Filtering, DHCP Server/Client, Traffic Prioritize, Forwarding Rate Control
- ▶ Layer 3 Network Routing Protocols - Static/Dynamic Route, VLAN Routing, Multicast Routing
- ▶ Hardware Watchdog for System Auto-Recovery,
- ▶ High Level Electromagnetic interference immunity
- ▶ Compliance with Railway EN50155, Heavy Industrial EMC and CE, FCC for the Train/MRT IP Surveillance application

Specification

Technology	
Standard	IEEE 802.3 10 Base-T Ethernet IEEE 802.3u 100 Base-TX Fast Ethernet IEEE 802.3ab 1000 Base-T IEEE 802.3x Flow Control and Back-pressure IEEE 802.1AB Link Layer Discovery Protocol (LLDP) IEEE 802.1p Class of Service (CoS) IEEE 802.1Q VLAN and GVRP IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP) IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) IEEE 802.3ad Link Aggregation Protocol (LACP) IEEE 802.1x Port Based Network Access Protocol
Performance	
Switch Technology	Store and Forward Technology with Non-Blocking Switch Fabric
CPU performance	32 bits CPU with Hardware based Watch-dog timer with 10S reset down-counter
System Memory	32M bytes flash ROM, 256M bytes system RAM
Transfer packet size	64 bytes to 9K (9216) bytes Jumbo Frame
MAC Address	16K
Packet Buffer	1.5MBytes shared memory for packet buffer with intelligent memory management unit for burst data traffic
Transfer performance	14,880pps for Ethernet and 148,800 for Fast Ethernet, 1488,100 for Gigabit Ethernet
Management	
Management Interface	Telnet with SSH, Web Browser with SSL, SNMP V1/V2c/V3 with SNMP Trap (up to 4 trap stations), RMON (Group 1,2,3,9) for in-band management. Local RS-232 M12 connector for out-band management. Additional USB host interface for configuration Backup and Restore.
Management Security	The maximum management session up to four, and support management Host IP secure feature to prevent unauthorized remote login
SNMP MIB	MIB-II, Bridge MIB, Ethernet-like-MIB, VLAN MIB, IGMP MIB, Private MIB
NMS	Windows based NMS System -Korenix NMS and Korenix View for device discovery and network topology auto construct
Network Time Protocol	NTP with daylight saving and localize time sync function
Management IP Security	Predefined Host IP address for management host login security
E-mail Warning	4 Receipt E-mail accounts with E-mail server authentication
System Event Log	2 event log modes, Local and remote Log Server with authentication
System Auto Maintenance	System Power-On with configuration update, firmware auto upgrade when USB/M12 Flash installed
Network Performance	
Port Configuration	Port link Speed, Link mode, current status and enable/disable
Port Trunk	IEEE 802.3ad Link Aggregation Control Protocol (LACP) and Static port trunk; trunk member up to 8 ports in one group, maximum 7 trunk groups
VLAN	IEEE 802.1Q Tag VLAN with 256 VLAN Entries and provides 2K GVRP entries; 3 VLAN link modes- Trunk mode, Hybrid mode and Link access mode
Private VLAN	The Private VLAN is special for group uplink access with independent port security. With the private VLAN function, each VLAN community is isolated and only exchange by high level device with primary VLAN community
IEEE 802.1Q QinQ	Supports Double VLAN tag for VLAN isolation and security
IEEE 802.1p	The Ethernet Switch MAC controller supports IEEE 802.1p Class of Service function; Per interface with 4 queues
IP Multicasting	Supports IGMP Snooping v1/v2c /v3 for multicast filtering and IGMP Query mode; also support unknown multicasting process forwarding policies- drop, flooding and forward to router port, 512 Multicasting Groups
Rate Control	Ingress/Egress filtering for broadcast, multicast, unknown DA or all packets

Port Mirroring	On-line traffic monitoring on multiple selected ports
DHCP	System supports DHCP Client function for dynamic IP address obtain from DHCP Server, and the Switch also support DHCP Server function with DHCP Relay Agent to forward DHCP request through specified forwarding path. The DHCP Server also offer Port Based DHCP Server function with predefined IP address or perform MAC&IP address binding function for field site DHCP client device easy replace
IEEE 802.1x/ Port Security	Port based network access control, and authenticated by localize pre-defined MAC address or remote RADIUS Server
Power over Ethernet	IEEE 802.3af/at, End-Span wiring architecture
PoE operating mode	Auto Mode: IEEE 802.3af/at behaviors with IEEE 802.3at 1-Event Classification for high power IEEE 82.3at PD device Forced Mode: User configured Power consumption budget control with IEEE 802.3 PoE /PD detection, or forced without PD detection
PoE forwarding conductor	M12 D-Code (Port 1-8): V+(1,3), V- (2,4)
Power forwarding capability	IEEE 802.3af:15W, IEEE802.3at:30W
PoE System Power Budget	Power Budget Reserve by PD declaration. The power budget control system will reserve power for connected PD device, once latest PD device (PoE 8) claimed power over the system surplus power, then the latest PoE will not be active. System Power over Ethernet Power Budget: 100Watts (Max.)/ 70°C
Network Redundancy	
Multiple Super Ring (MSR™)	New generation Korenix Ring Redundancy Technology, Includes Rapid Super Ring, Rapid Dual Homing, TrunkRing™, MultiRing™, Super Chain™ and backward compatible with legacy Super Ring™
Rapid Dual Homing (RDH™)	Multiple uplink paths to one or multiple upper Switch, up to 256 Groups RDH Peer protection
TrunkRing™	Integrate port aggregate function in ring path to get higher throughput ring architecture
MultiRing™	Supports redundant ring up to 7 rings in one device includes 5 Fast Ethernet rings and 2 Gigabit Ethernet rings
Super Chain	It is new ring technology with flexible and scalability, compatibility, and easy configurable. The ring includes 2 types of node Switch - Border Switch and Member Switch
Rapid Spanning Tree	IEEE 802.1D-2004 Rapid Spanning Tree Protocol; it compatible with Legacy Spanning Tree and IEEE 802.1w
Multiple Spanning Tree	IEEE 802.1s Multiple Spanning Tree, each MSTP instance can include one or more VLANs, and also supports multiple RSTP deployed in a VLAN or multiple VLANs
ITU-T G.8032 ERPS	Support ITU-T G.8032 ERPS V1 single ring topology, and ERPS v2 multiple rings with ladder topology
Loop Protection	The Loop Protection prevents any network looping caused by RSTP and MSR ring topology change
Routing Protocols	
IP Routing	Supports Default Static and Dynamic Route
Virtual LAN Routing	Incorporate both of IEEE802.1Q Bridge and Routing Function
Routing Information Protocol	Hop-Based IP Routing with RIPv1 and RIPv2; 512 entries /256 entries for IPv4/IPv6 routing
IGMP	Multicast Group Management Protocol support IGMP v1,v2
Multicast Routing	128 IP Multicast Routing entries
DVMRP	HOP-Based multicast routing protocol, short of distance vector multicast routing protocol (2 nd stage)
PIM-DM	Multicasting Routing Protocol, Short of Protocol Independent Multicast-Dense mode (2 nd stage)
VRRP	Short of Virtual Route Redundancy Protocol, Automatically Backup Routing route to specified router
OSPF	Link State based IP routing protocol support OSPFv1 and OSPFv2 (2 nd stage)

Interface	
Enclosure port	<p>100Mbps Fast Ethernet port (#1-#10): 10 x M12-D Female connectors with 8 ports IEEE 802.3at PoE/PSE (#1-#8) M12-D (Conductor #): (#1) TX+/PoE V+, (#2) RX+/ PoE V-, (#3) TX-/PoE V+, (#4) RX-/ PoE V-</p> <p>1000Mbps Gigabit Ethernet port (#11-#14): 4 x M12-A Female Connectors M12-A (Conductor #): (#1) 3N(Bi-DD-), (#2) 3P(Bi-DD+), (#3)2N(Bi-DC-), (#4) 2P(Bi-DC+), (#5)1N(Bi-DB-), (#6)1P(Bi-DB+), (#7) 0N (Bi-DA-), (#8) 0P (Bi-DA+)</p> <p>Serial Console/USB: M12-A 8-pins for console and USB Flash Disk Power input port: M12-A 4-pin Male</p>
Cables	<p>100Base-TX: 2 pairs STP Cat.5e/Cat.6 cable, EIA/TIA-568B 100-ohm (length:100Meters) 1000Base-T: 4 pairs STP Cat. 5e/Cat.6 cable, EIA/TIA-568B 100-ohm (length:100Meters) Power Interface: 4 pins, 18 AWG, Strand Electric power cable</p>
Diagnostic Indicator	<p>100Mbps port: Link/Acrivity (Green on, Green Blinking), PoE Power on (Amber on)/ Port 1-8</p> <p>1000Mbps port: Link/Activity (Green on, Green Blinking) Power: Power on (Green on) Sys: Ready (Green on) R.S: Green on (Ring Normal)/Blinking (wrong ring port connective), Amber on (Ring abnormal)/Blinking (ring port failed)</p>
Power Requirements	
System Power	HVDC: DC 110V (Un), Variation voltage from 77Vdc (0.7Un) to 137.5Vdc (1.25Un)
Power Consumption	23Watts (maximum) without PoE loading, DC77-137.5V 123Watts (maximum) with 100W PoE loading , DC77-137.5V
Mechanical	
Installation	Wall Mounting
Dimensions	145.2mm(H) x 198mm (W) x 120mm (D)-without mounting ears 145.2mm(H) x 230.6mm (W) x 120mm (D)-with mounting ears
Material Housing	Steel Metal with Aluminum Heat Sink
Ingress Protection	IP30 protection
Environmental	
Operating temperature	-40-70°C: 100Watts with PoE Loading
Operating humidity	0%-90%, non-condensing
Storage Temperature	40-85°C
Hi-Pot	AC 1KV for Power- Enclosure Interface
Regulatory Approvals	
Railway Application	Compliance with EN50155-Electric Equipment on Rolling Stock
EMC	EMI: IEC/EN61000-6-2, Compliance with EN50121-1/-4 /-3-2, CE class A, FCC sub part-15 class-A EMS: IEC/EN61000-6-4, Compliance with EN50121-1/-4/-3-2, EN61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-9
Vibration & Shock	Compliance with IEC 61373

