Network Controller for PPC Ethernet Bridge

an Ethernet over Coax Solution

A BELDEN BRAND

Features & Benefits



- Network Controllers for PPC's Ethernet Bridge solution
- 1 and 4 port wall mount available
- 1, 4 and 8 port (two 4-ports) 19-inch 2U rack mount available
- Each RF port capable of creating a 3Gbps data stream which can serve up to 31 endpoints/modems
- Multiple Ethernet ports per Network Controller
    - One 1Gbps "Management" port
    - Two 10Gbps SFP/SFP+ sockets for either a copper or optical interface
- Built-in Ethernet switch to control data throughput to PEBC/PEPC modems
- Service Enablement Tool (SET) for provisioning and management
- Wall mountable, weather resistant security enclosures are available

Overview

PPC has partnered with Giax GmbH to expand the Ethernet Bridge product offering by adding Network Controllers to manage the host/client communications between the controller and the PEBC/PEPC modems. Each Network Controller is provisioned and managed by externally run software, the Service Enablement Tool (SET). The SET can be run on a computer in the operators control or optionally be hosted on the Cloud.

Host/client communications are protected with 128-bit security with additional security options such as assignable VLAN's, PPPOE and tagged/untagged configurations available. There is also a variety of QoS configurable options. Unique to these controllers is the ability to control the data throughput to the PEPC/PEPC modems to make possible different tiers of service to drive additional revenue. Availability in 1 and 4-Port wall mount configurations and 1, 4 and 8-Port 19-inch rack mount configurations satisfies a wide variety of cost-effective MDU applications.

Product Images



4-port Wall-mount
Network Controller with SFP+ installed



2U Rack mount configured for
1 Network Controller

These products may be protected by one or more patents. For further information, please visit: www.ppc-online.com/patents

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Technical Data

System capability with Service Enablement Tool (SET)

Specification	Value
Carrier Ethernet Services	E-LINE E-LAN E-TREE and E-Access Supported, MEF-Compliant Dual Rate Policing and Shaping
Protection	IEEE 802.3ad LACP, IEEE 802.1w/s RSTP/MSTP, ITU-T G.8031 ELPS & G.8032 v1/v2 ERPS
Quality of Service	Per-EVC QoS, Policing and Shaping for Service, Isolation and Traffic Engineering, Strict Priority and Weighted Round-Robin (WRR), Scheduling, Per-Port/VLAN/ToS/DSCP Classification, Per-Port/VLAN/Flow Rate Limiting
Port Control	Port Speed, Duplex Mode, Flow Control – Port Frame Size, Port State (Administrative Status), Port Status (Linking Monitoring), Port Statistics (MIB Counters), On-the-Fly SFP Detection
Ethernet Layer 2 Switching	IEEE 802.1D Bridge, IEEE 802.1Q VLAN, VLAN Translation, Private Static VLAN, Port Isolation (static), Loop Guard, MAC-based and Protocol-based VLAN, Multiple Registration Protocol (MRP), Multiple VLAN Registration Protocol (MVRP), GARP VLAN Registration (GVRP), IEEE 802.3ad Link Aggregation; Static & LACP, Bridge Protocol Data Unit (BPDU), Guard and Restricted Role, Transparency and Forwarding – Voice VLAN & Auto VoIP, VLAN Trunking, DHCP Snooping, ARP Inspection, Port and Flow Mirroring, Protocol-based and IP subnet-based VLAN – Error Disable Discovery, classification of Layer 3 Flow
Multicast Management	IGMPv2 and IGMPv3 Snooping, MLDv1 and MLDv2 Snooping, IP Multicast (IPMC) Throttling, Filtering, Fast Leave and Leave Proxy, Multicast VLAN Registration (MVR) and profile, Broadcast/Multicast Storm Control, Unknown Multicast Filtering, Well-known Protocol Forwarding
Ethernet Layer 3 Switching	DHCP Option 82 Relay, Universal Plug and Play (UPnP) – IPv4 Unicast Static Routing
Security	Network Access Server – Port-based IEEE 802.1X, Single and Multiple IEEE 802.1X – MAC based Authentication – VLAN and QoS Assignment – Guest VLAN, RADIUS Accounting, MAC Address Limit, TACACS+, Web and CLI Authentication, Authorization (15 user levels), ACLs for Filtering, Policing, and Port Copy, IP Source Guard, IP MAC Binding Dynamic to Static

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Hardware Specifications

	Model Numbers				
Specification	**PNC15V-3G-RF1-S**	**PNC15V-3G-RF4-S**	**PNC15V-3R-RF1-S**	**PNC15V-3R-RF4-S**	**PNC15V-3R-RF8-S**
Form Factor	Wall mount, 1 RF port	Wall mount, 4 RF ports	19-inch rack mount 2U, 1 NC, 1 RF port	19-inch rack mount 2U, 1 NC, 4 RF ports	19-inch rack mount 2U, 2 NC's, 8 RF ports
Ethernet Ports	One 1Gbps RJ45 Management	One 1Gbps RJ45 Management	One 1Gbps RJ45 Management	One 1Gbps RJ45 Management	Two 1Gbps RJ45 Management
	Two 10Gbps SFP+ sockets	Two 10Gbps SFP+ sockets	Two 10Gbps SFP+ sockets	Two 10Gbps SFP+ sockets	Four 10Gbps SFP+ sockets
RF Ports	1	4	1	4	8
Power Ports	1	1	1	1	2
Max # Modems/ RF Port	31	31	31	31	31
Max # Of Modems/NC	31	124	31	124	248
Dimensions	8.5Hx6.6Wx2.8D inches (216Hx168Wx71D mm)		1.75Hx19Wx7D inches (44.5Hx483Wx17.8D mm)		
Weight	3.5lbs (1.6kg)		5.2lbs (2.4kg)		8.7lbs (3.9kg)
Power Required	10 – 15VDC 10Watts				10 – 15VDC 20Watts
Data Rate	Approximately 3.3Gbps bi-directional per RF port				
Frequency Band	Each RF port individually selectable: 400 – 900MHz, 1125 – 1675MHz, 1350 – 1675MHz				
Modulation	ODFM maximum QAM 1024				
Link Attenuation	70dB maximum, combination of passive and cable loss at highest operating frequency				
Environmental	-40 °F to 167 °F (-40 °C to 75 °C) 5 to 95% RH non-condensing (power supply independently rated)				

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Ordering Information

Hardware

Part Number	Description
PNC15V-3G-RF1-S	PEBC/PEPC wall mount Network Controller 1-Port with 1-year license for NC and SET Requires: SFP/SFP+ module(s) and power source
PNC15V-3G-RF4-S	PEBC/PEPC wall mount Network Controller 4-Port with 1-year license for NC and SET Requires: SFP/SFP+ module(s) and power source
PNC15V-3R-RF1-S	PEBC/PEPC 19-inch rack mount Network Controller 1-Port with 1-year license for NC and SET Requires: SFP/SFP+ module(s) and power source
PNC15V-3R-RF4-S	PEBC/PEPC 19-inch rack mount Network Controller 4-Port with 1-year license for NC and SET Requires: SFP/SFP+ module(s) and power source
PNC15V-3R-RF8-S	PEBC/PEPC 19-inch rack mount Network Controller 8-Port with 1-year license for NC and SET Requires: SFP/SFP+ module(s) and power sources
PPC-PS152400	Wall mount AC/DC power supply Input: 80 – 264VAC, Output: 15VDC @ 2.4A (36Watts) Level 6 efficiency, Temp range -13 °F to 140 °F (-25 °C to 60 °C) Output: 2.1/5.5mm, center is +
PEBCHUB-EEB	NC Enclosure for wall mount NC's, Lockable, Weather resistant, 13H x 13W x 9D in (330H x 330W x 228D mm)
PEBCHUB-BPE	NC mounting plate for wall mount NC enclosures

Software/Licenses

Hosting Type	Part Number	Description
Cloud	PNCS-CLOUD1	Annual fee per Network Controller to host SET on the Cloud
	PNCS-CLOUD-INS	One-time Set-up Fee to host SET on the Cloud
Operator's VM PC	PNCS-SETSW1	SET Software + support to set up 1 instance of a stand-alone SET on host computer
Any	PNCS-OS-S	NC/SET Firmware License Annual Renewal – includes all updates and software support Initial license included with Network Controller purchase

r3_04162026

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