



## Quarra 1G PTP Ethernet Switch



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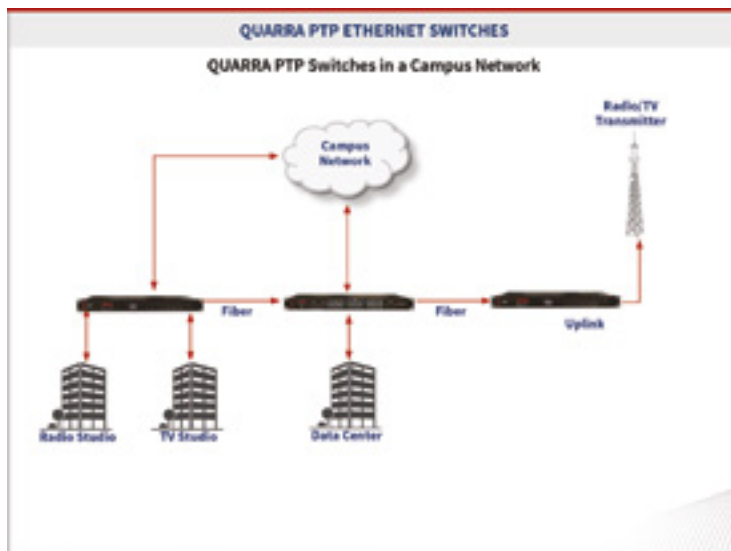
### Carrier-grade Ethernet switches with the industry's most accurate IEEE 1588v2 Timing and Synchronization

The Quarra range of switches is designed for carrier class applications where accurate timing and control is required. These switches are aimed at the professional markets of audio/video broadcast, defense and security, finance, utilities, telecom and enterprise IT.

Designed as either a standard 1RU rackmount unit with dual power supplies, or a half-width 1RU unit with a single power supply, the switches are configured with Gigabit interfaces

supporting a best in class layer 2 IEEE 1588v2 algorithm. A 1pps external reference input from GPS is included as standard and options include an internal layer 1 Synchronous Ethernet module.

The Quarra switches support IGMP v2/3, QoS, Protection switching, VLAN, MEF service delivery, and network OAM.



### FEATURES

Industry's most Accurate IEEE 1588 Timing & Synchronization for nanosecond accurate timing.

Synchronous (L1) Ethernet, Master, and Slave. Precision clock timing using DSPLL® technology.

1pps reference. Network wide synchronization using IEEE1588 or SyncE.

SMPTTE Standards-based Timing

- ST 2110-10 System Timing and Definition
- ST 2059-2 SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications
- Supports Boundary and Transparent Clock

RAVENNA AES67 approved

IEEE802.1 AVB

Full management from Web GUI or command line interface. No training required-units can be quickly and easily configured.

JSON/RPC control and monitoring

Ideal for:

- Live Video/Audio broadcast/production over IP utilizing IEEE 1588 timing, QoS, and Multicast filtering.
- Broadcast DTT/DTV IP distribution, utilizing IEEE 1588 and SyncE timing to replace or backup GPS timing at base stations.
- Telecoms networks, providing high level of network timing.
- Financial/trading networks, utilizing our IEEE1588 precise nanosecond time synchronization.

Interfaces:

- 8 RJ45 ports (10/100/1000Mb/s)
- 2 SFP ports (1- 2.5Gb/s)

Available exclusively in the UK and Ireland from APC Technology Group. Speak to a member of our time and frequency synchronisation team for more information and product support.

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## Carrier Ethernet

Layer-2 IEEE 1588v2 : Precision Time Protocol (PTP) timing and synchronization  
 IEEE 802.1ad : Provider bridging (VLAN Q-in-Q) switch - 8 MACs, 4K VLANs  
 Per queue MEF E-LINE or per port MEF E-LAN, E-TREE Service Points  
 - Per port per queue Dual Leaky Bucket Service Policers with PCP or DSCP remarking per Service port  
 - Static tagging options per Service Point  
 OAM Hardware for generating CCM messages, CCM checking is done by software  
 - Software of OAM and protection switching

## Quality of Service

EPS and ERPS Protection Switching  
 TCAM-based VLAN classification and translation with pattern matching against Layer-2 through Layer-4 information  
 Up to 256 QoS and VLAN TCAM entries  
 Eight QoS queues per port with strict or deficit weighted round-robin scheduling (DWRR)  
 DSCP translation, both ingress and/or egress  
 DSCP remarking based on QoS and VLAN TCAM entries  
 VLAN (PCP, DEI and VID) translation, both ingress and egress  
 Per-queue, per-port policing and shaping, programmable in steps of 100 kbps  
 Per-flow policing through TCAM-based pattern matching, Up to 256 policers  
 Full-duplex flow control (IEEE 802.3x) and half-duplex backpressure, symmetric and asymmetric

## Layer 2 Switch

Port mirroring  
 Port-based access control  
 IEEE 802.3ad : Link aggregation  
 IEEE 802.1x : Network Access Control  
 IEEE 802.1w : Rapid Spanning Tree Protocol  
 IEEE 802.1s : Multiple Spanning Tree Protocol  
 Simple Network Management Protocol (SNMP)  
 Independent and shared VLAN learning  
 256 VLAN egress tagging TCAM entries  
 Link aggregation traffic distribution is programmable and based on Layer-2 through Layer-4 information  
 Basic Switching - Forwarding, address learning and address aging  
 VLAN IEEE 802.1Q (4,096 VLAN's) - Push / pop / translate up to two VLAN tags; translation in ingress and / or egress  
 8,192 MAC addresses. Including Generic Attribute Registration Protocol (GARP)  
 Wire-speed hardware-based learning and CPU-based learning configurable per port



Quarra 1G Compact PTP Ethernet Switch

## Multicast

8K Layer-2 Multicast group addresses with 64 port masks  
 8K IPv4/IPv6 multicast groups  
 Internet Group Management Protocol v2 & v3  
 Multicast Listener Discovery (MLDv1)  
 Multicast Listener Discovery (MLDv2) with source specific multicast forwarding

## Physical, Environmental and Electrical - 1G QUARRA Rackmount 1RU

<b>Electrical rating</b>	100-240Vac, 0.3-0.2A, 50-60Hz, 50Watts (Maximum)
Maximum Temp	0-40C
Relative Humidity	10 to 95% (non-condensing)
Dimensions (h, w, d)	1.75" x 17.25" x 6.75" (44.45mm x 438.15mm x 171.45mm)
Weight	5.5lbs. (2.5kg.)

## Physical, Environmental and Electrical - 1G QUARRA Compact Unit

<b>Electrical rating</b>	100-240Vac, 0.3-0.2A, 50-60Hz, 50Watts (Maximum)
Maximum Temp	0-40C
Relative Humidity	10 to 95% (non-condensing)
Dimensions (h, w, d)	1.75" x 8.75" x 7.875" (44.45mm x 222.25mm x 200mm)
Weight	3.0lbs. (1.4kg.)



IEC/EN60950 safety certification



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All specifications subject to change without notice. ©2020

## Ordering Information

Description	Product Number
QUARRA 1G PTP Ethernet Switch Rackmount switch with Dual Power Supply	390-280219-00
QUARRA 1G PTP Ethernet Switch Rack mount switch, Dual Power Supply and SyncE	390-280319-00
QUARRA 1G Compact PTP Ethernet Switch	390-280200-00
QUARRA 1G Compact PTP Ethernet Switch Desktop Switch with SyncE	390-280300-00

SFP - See InfinityLink SFP/SFP+/XFP compatibility chart

Speak to a member of our time and frequency synchronisation team for more information and project support for all time synchronisation requirements.

Our team of experts have over 30 years' experience specifying and designing bespoke timing systems. As one of the UK and Ireland's leading distributors of PTP-compliant switches, Grandmasters and Slave devices, our team can advise and support on a wide range of future-proofed timing systems.

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