

OUTREACH QUAD

OUTREACH QUAD LITE

INSTALLATION MANUAL

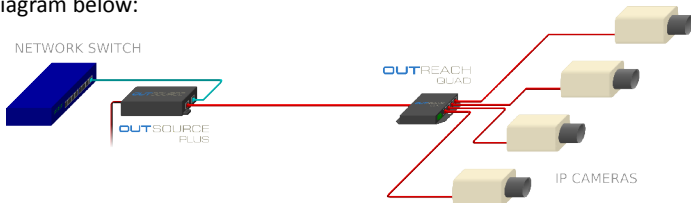
PLEASE READ CAREFULLY



Extend and distribute Ethernet and PoE

OUTREACH QUAD and OUTREACH QUAD LITE let you extend and expand your Ethernet network, with the flexibility and reliability of Power over Ethernet (PoE) power.

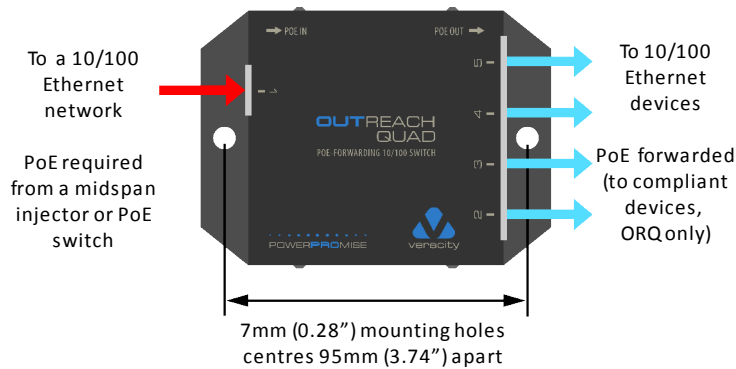
OUTREACH QUAD (ORQ) is a five-port Ethernet switch that can forward PoE to up to four IP cameras or similar devices. This is shown in the diagram below:



Installing OUTREACH QUAD doubles the range of the network, and allows extra PoE devices to be installed rapidly, with no local AC power required.

OUTREACH QUAD LITE (ORQ-LITE) is a five-port Ethernet switch that is powered by PoE. It provides four remote non-PoE Ethernet ports from a single PoE-enabled Ethernet connection.

Connections and mounting



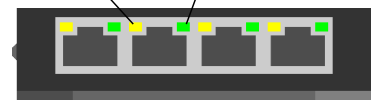
Technical specification

Power	3 watts (typical)
PoE In	IEEE 802.3af/at Class 4 device (ORQ) IEEE 802.3af Class 2 device (ORQ-LITE)
PoE Out	IEEE 802.3af, PowerPromise™ managed (ORQ)
Ethernet	10BASE-T or 100BASE-TX, negotiated automatically Compatible with both patch cables and crossover cables
Switch	Unmanaged, store-and-forward switch fabric VLAN and jumbo packets are supported
Dimensions (WxDxH)	82 x 82 x 21 mm (3.23 x 3.23 x 0.83") 110 x 85 x 21 mm (4.33 x 3.35 x 0.83") inc. screws and tabs
Weight	225g (7.6 oz)
Environmental	Operating temperature: -10 to 50°C (14 to 122°F) Humidity: up to 85%, non-condensing

LED Indicators – Ports 1 to 4

Network status	
On	Link
Flashing	Activity
Off	No link

PoE Out status (ORQ only)	
On	PoE Out enabled
Flashing	Budget exceeded / fault
Off	No PoE requested



LED Indicators – Port 5

PoE In status	
Green	PoE source connected
Red	PoE Plus detected (ORQ only)
Off	No power

Network status	
On	Link
Flashing	Activity
Off	No link





Power budgeting (ORQ only)













Veracity's advanced PowerPromise™ technology (patent pending) limits the number of PoE devices that can be enabled at the same time, in order to prevent any overload or undervoltage conditions in operation.

OUTREACH QUAD has a maximum *power budget* available, which it allocates according to the *power class* of any PoE devices connected. This is the *power requested* by each device, which may be higher than the power it actually requires for operation.

You can use the tables below to plan your installation. Key:







-  Class 1 or 2 PoE device (up to 7 watts)
-  Class 3 device (up to 15 watts)

The first table lists how many PoE devices can be connected to OUTREACH QUAD, according to which type of PoE power source is used:

PoE Source	Budget	Number of PoE devices supported
PoE	7 watts	
OUTSOURCE	15 watts	  or 
PoE Plus	22 watts	   or 
OUTSOURCE PLUS	30 watts	   or 

For even longer-reach applications, a single OUTREACH PLUS may be used to extend the connection between the PoE source and OUTREACH QUAD.

This reduces the number of devices that can be connected, however:

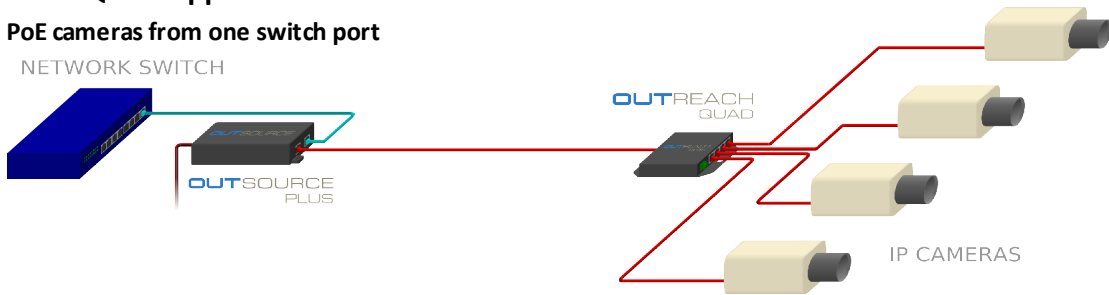
PoE Source	Budget	Number of PoE devices supported
PoE	0 watts	(no PoE available)
OUTSOURCE	7 watts	
PoE Plus	7 watts	
OUTSOURCE PLUS	22 watts	   or 

Notes:

- Some PoE devices are Class 0 (unclassified). OUTREACH QUAD treats these as Class 2 devices, to avoid budget limit issues in common applications.
- OUTREACH may be used to extend network connections from OUTREACH QUAD's PoE Out ports, but only if OUTSOURCE PLUS is used as the PoE source. OUTREACH is treated as a Class 3 device
- All network ports can be always be used as regular (non-PoE) Ethernet connections, regardless of PoE budget availability
- Operating OUTREACH QUAD with an exceeded budget is not recommended, as different combinations of devices may be enabled following a reset

Example OUTREACH QUAD applications

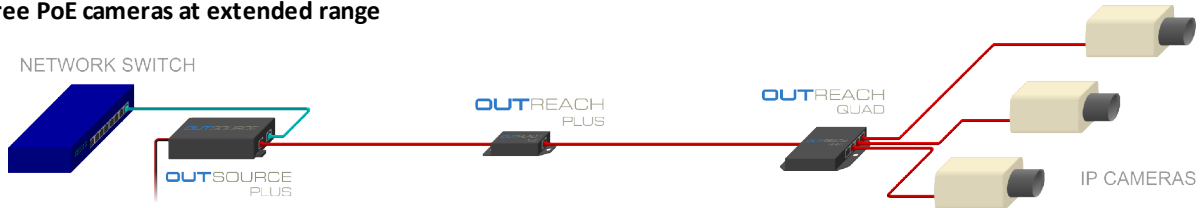
Example 1: Four PoE cameras from one switch port



The OUTSOURCE PLUS is located near the network switch and delivers enhanced PoE Plus power to the OUTREACH QUAD. The OUTREACH QUAD's power budget is sufficient to power up to four conventional IP cameras, which are typically class 2 PoE devices.

OUTREACH QUAD restores the Ethernet signal and forwards PoE, allowing the cameras to be located up to 200 metres (660 feet) from the switch and power source

Example 2: Three PoE cameras at extended range



The addition of an OUTREACH PLUS means that cameras can be located up to 300 metres (990 feet) from the central switch and power source. However the reduced budget of 22 watts reduces the maximum number of connected class cameras to three.

The OUTREACH QUAD's spare fourth port can still be used as a network connection, but no further PoE power is available.

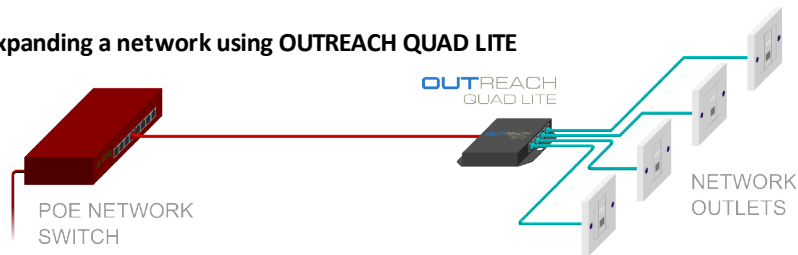
Example 3: Adding a new camera to an existing installation



An OUTREACH QUAD and an OUTSOURCE can be used to allow an extra camera to be quickly added to an installation. OUTSOURCE injects enhanced PoE power to the original cable after the network switch (or PoE network switch).

The OUTREACH QUAD can be inserted at any point along the cable, and allows the new PoE network connection to be "tapped off" the existing link.

Example 4: Expanding a network using OUTREACH QUAD LITE



OUTREACH QUAD LITE can be used as an edge switch to add Ethernet ports to a network. It does not have to be located near an electrical outlet as all power is sourced from the central PoE switch, which could be UPS-backed. The extra Ethernet connections can also be located up to 200 metres (660 feet) from the network switch.



EC Declaration of Conformity

In accordance with EN 45014:1998

We, Veracity UK Ltd. of 6 Barns Street, Ayr, KA7 1XA declare that the equipment "OUTREACH QUAD" Ethernet repeater model number S VOR-ORQ and VOR-ORQL conform to the essential protection requirements of the EMC Directive 89/336/EEC as amended.

The following EMC standards have been applied:

BS EN 55022:1998 Emissions (Class B Radiated)
BS EN 55024:1998 Immunity (BS EN 61000-4-2:1995 Immunity to ESD,
BS EN 61000-4-3:2000 Immunity to Radiated RF Fields (3V/m))

I hereby declare that the equipment named above has been found to comply with the relevant sections of the above referenced specifications. The unit complies with all essential requirements of the EMC Directive.

Responsible Person
Issued

Alastair McLeod
20th March 2009

Mr Alastair McLeod, Director
at Ayr



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.