Course: Digital Drift System

Module 1.2:

Active Devices (v1)

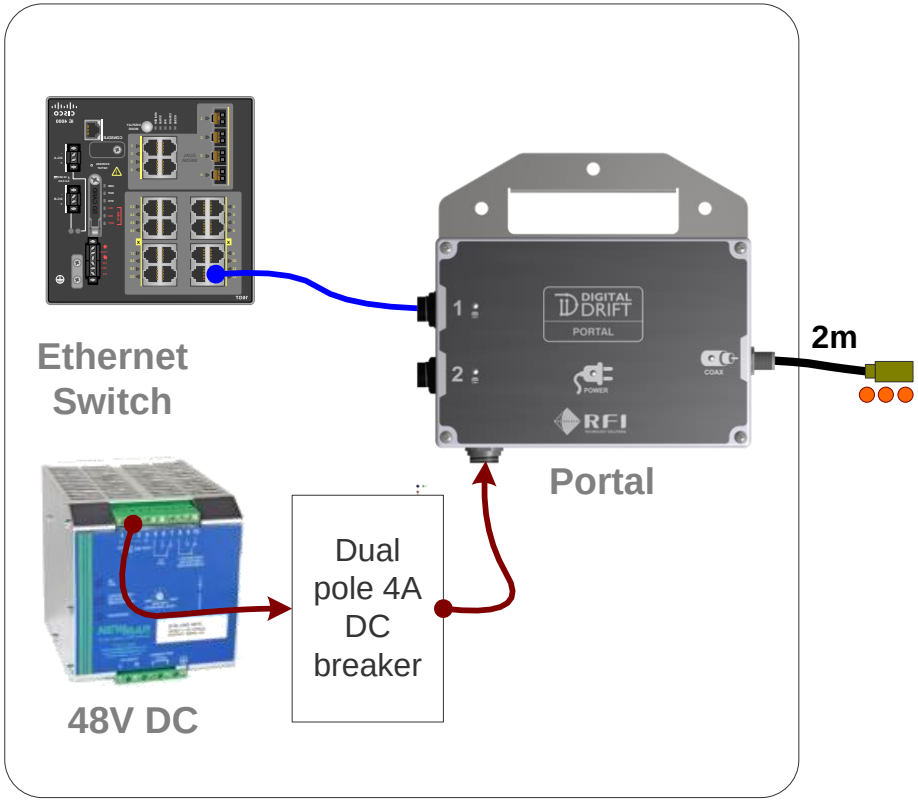
RFI
TECHNOLOGY SOLUTIONS

Digital Drift – Portals Wave 2 (DD220-PO)

The Portal is the Gateway between the distribution network (fibre) and the coax network.

Features:

- Combines the GbE and DC power (48 V) onto the coax cable
- Acts as the “Domain Master” for the coax segment
- Normally located at the launch point of a coax segment (e.g. substation, workshop, mine portal)



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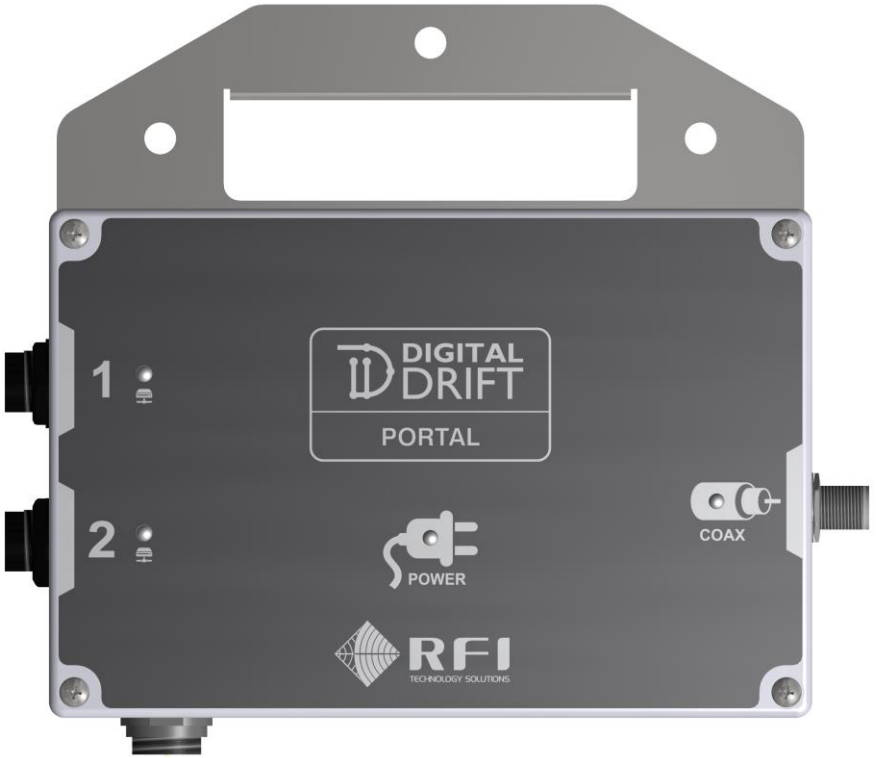
Digital Drift – Portals Wave 2 (DD220-PO) - Connections

GbE – 2 ports

- 1 Port to provide an uplink to the distribution network
- 1 port for trouble shooting



This is the connection to the cable segment that carries the Data and DC power.
NOTE- this is a 75 Ohm connection so only use the cable supplied with the unit

Power – This point can be used to inject power onto the coax but also to take power of the coax for local devices

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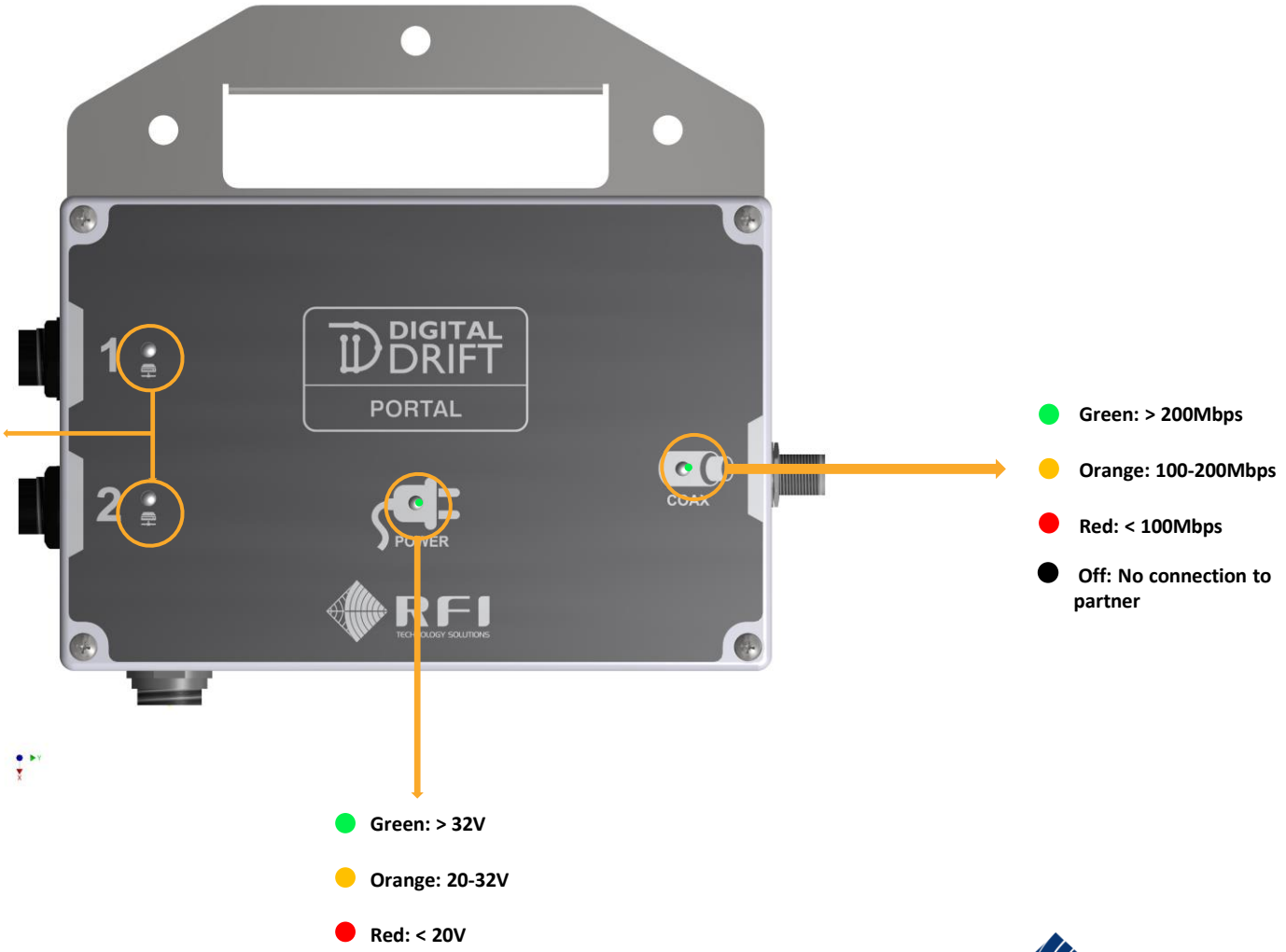
Digital Drift – Portals Wave 2 (DD220-PO) - Indicators

GbE – 2 ports

- These port indicators behave similar to a normal Ethernet ports where the LED will flash when data is being transferred.



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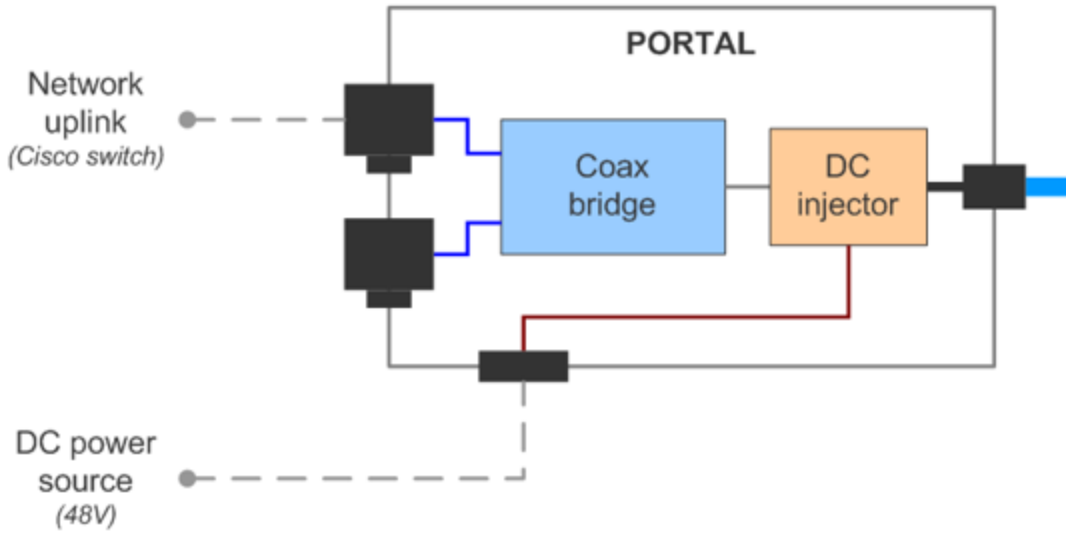
Digital Drift – Portals Wave 2 (DD220-PO) - Diagram



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Digital Drift – Portals Wave 2 (DD220-PO) - Configuration

Configuration:

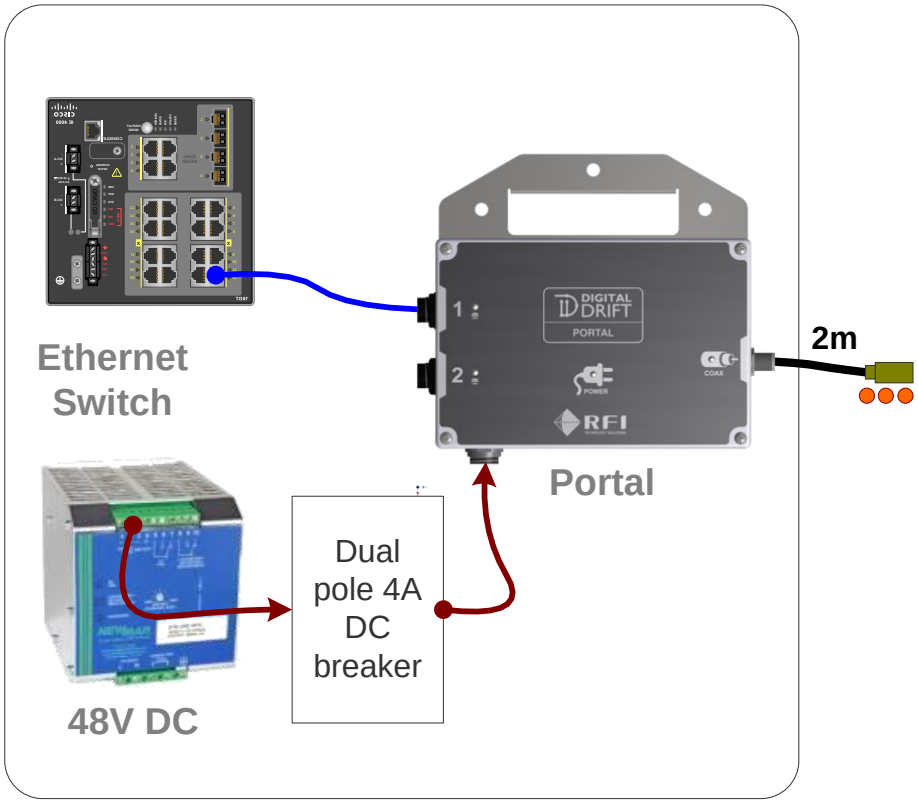
- None required
- Typically, only the “name” and “IP address details” are set

VLAN Support:

- None- packets pass between the GbE and the coax unmodified
- Management interface – will only respond to untagged frames

Typical launch point integration:

- Switch (Cisco or others)
  - VLAN Trunk
  - Management VLAN untagged
- DC Power – can include battery back up



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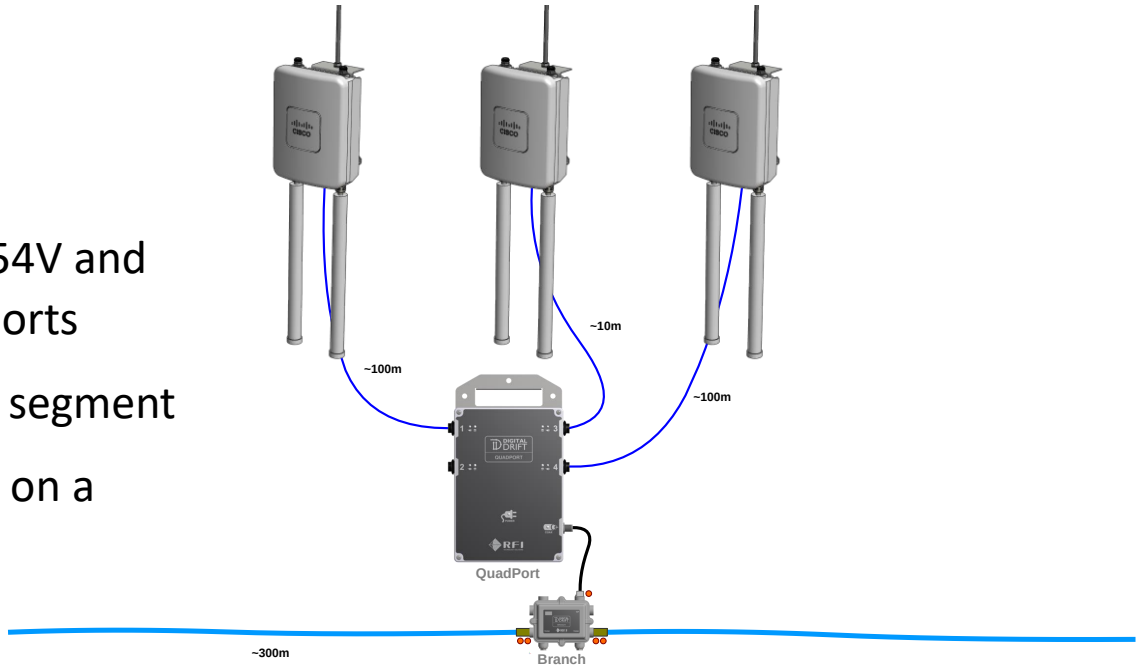
Digital Drift – Quad Port Wave 2 (DD220-QP-X)

The Quad Port breaks out power and data from cable in POE format.

Features:

- Powers from the coax cable
- Converts this power from the cable to 54V and supplies this to end devices via 4 POE ports
- Can be located anywhere along a cable segment
- Always act as an Endpoint(i.e. two QP's on a cable segment will NOT link up)



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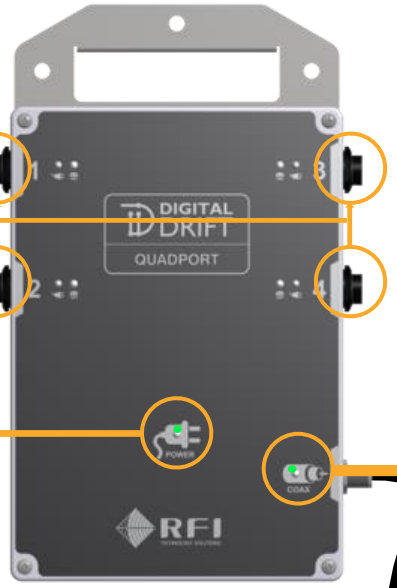
Digital Drift – Quad Port Wave 2 – Connections/Indicators

DD220-QP-FM (Managed)
- **4 x RJ45 FE**
- **802.3at power (30W)**

DD220-QP-GU (Unmanaged)
- **4 x RJ45 GbE**



- **Green: > 32V**
- **Orange: 20-32V**
- **Red: < 20V**

- **Green: > 200Mbps**
- **Orange: 100-200Mbps**
- **Red: < 100Mbps**
- **Off: No connection to partner**

2m

QuadPort 1

The coax connection supplies the power and Data to the QP.
NOTE – This is a 75 Ohm connection so only use the supplied RF Jumper.

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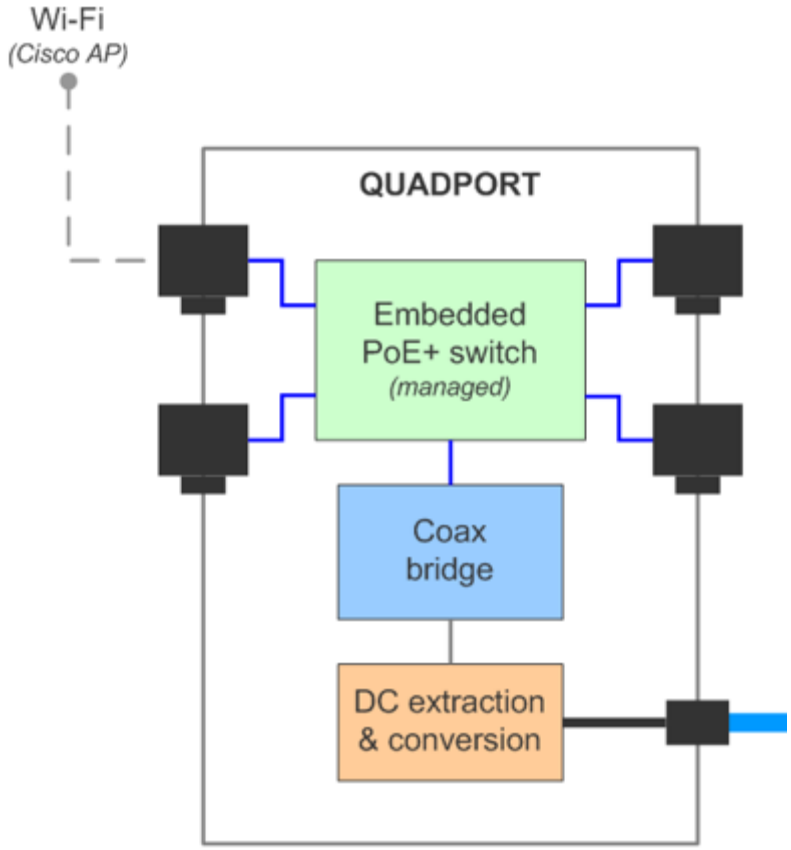
Digital Drift – Quad Port (Managed) Wave 2 - Diagram



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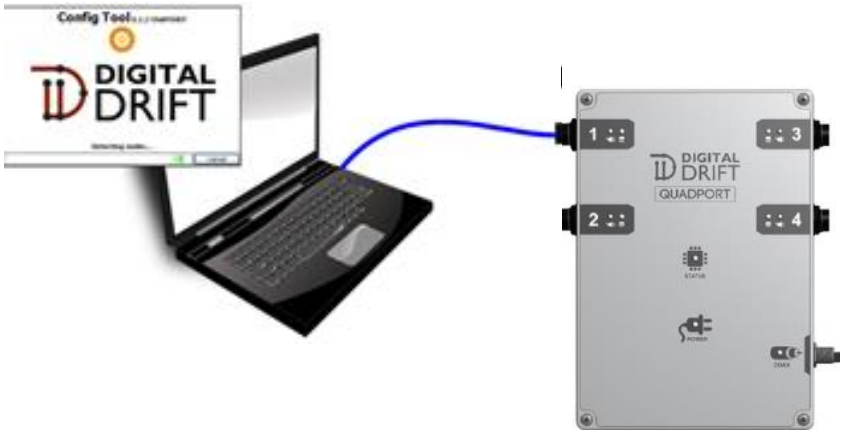
Digital Drift – Quad Port (Managed) Wave 2 - Configuration

The default access details for the switch is:
IP: 10.1.1.1
Username: admin
Password: blank (no password)



The menu of most use will be:

- VLAN
- PoE
- SNMP
- Security menu (for TACACS, etc)

- If the IP of the switch is unknow there are two ways to access it:
- "SwitchConfigurator" is a software package which can discover the switch as long as its management interface is on the port you are plugged into and it is untagged
- Second way is to:
  - power it off
  - plug a patch lead between port 1 and 2.
  - power it on
  - wait until the switch boots up ..... it will cause a loopback obviously. When you se it flashing crazy unplug the patch lead
  - The switch is now at defaults until you power cycle it
  - This means you can plug into any of the four ports and access 10.1.1.1
  - You can now reconfigure it, but you must Save to flash before power cycling - otherwise it will boot up with the previously saved config

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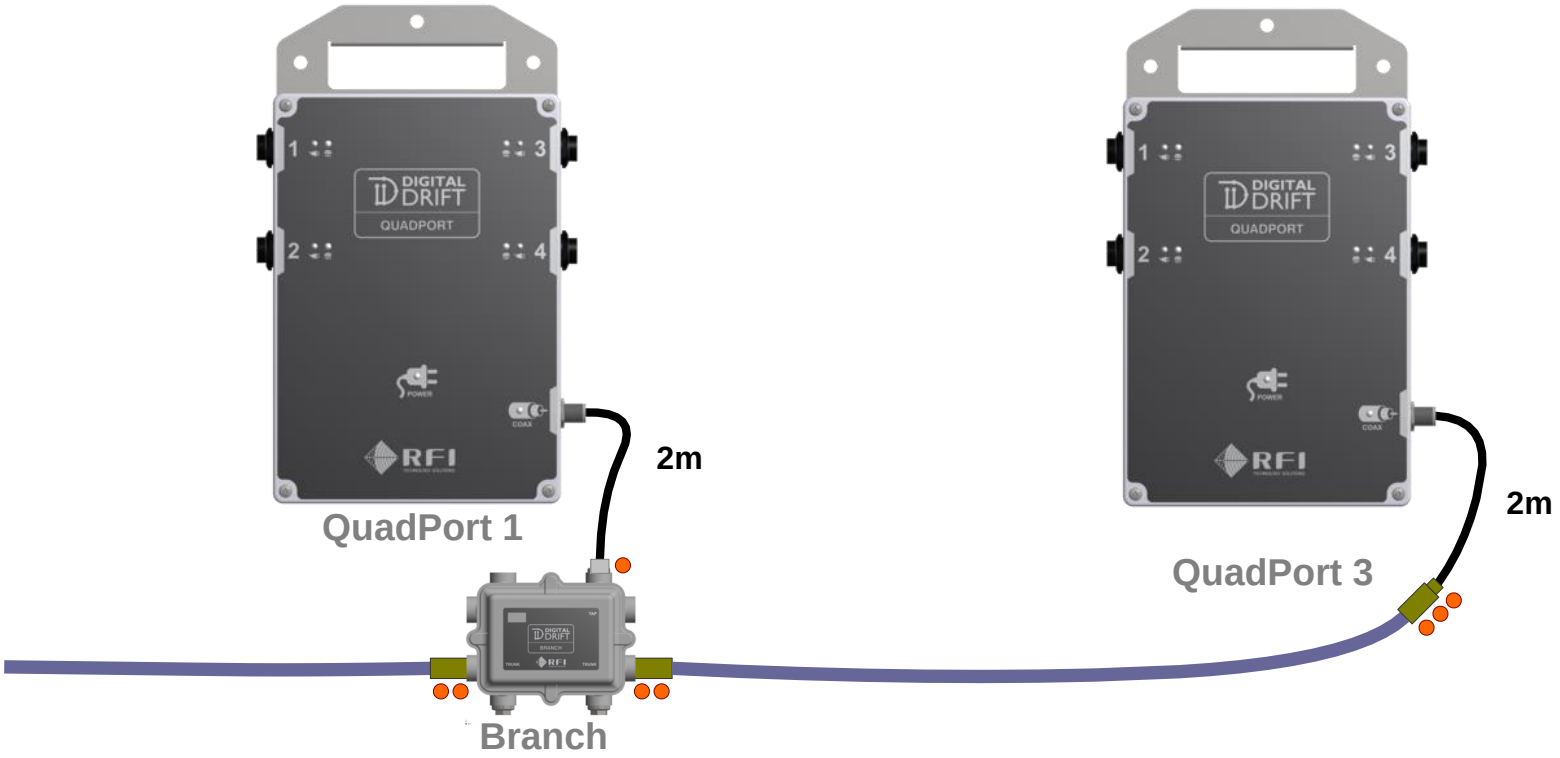
Digital Drift – Quad Port (Managed) Wave 2 - Integration

The Quad Port can be installed mid-span using a branch unit as per the left unit or end of line as per the right unit.



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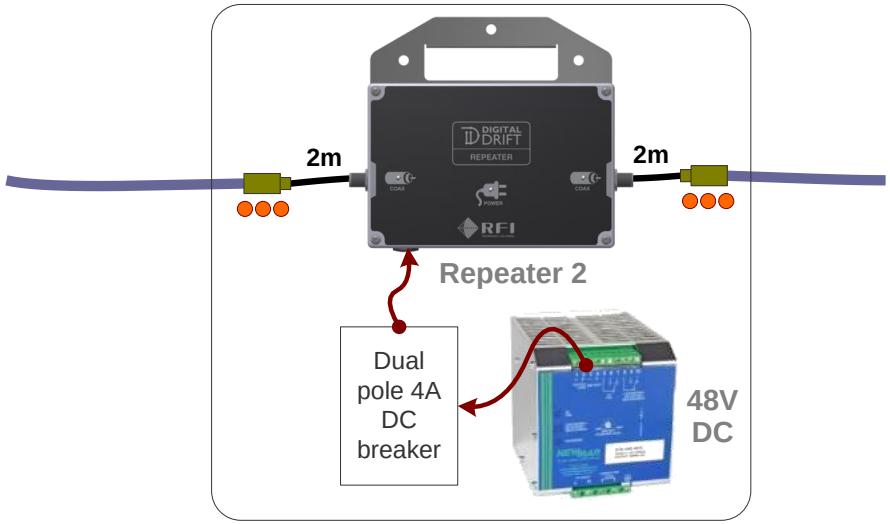
Digital Drift – Repeater Wave 2 - DD220-RP

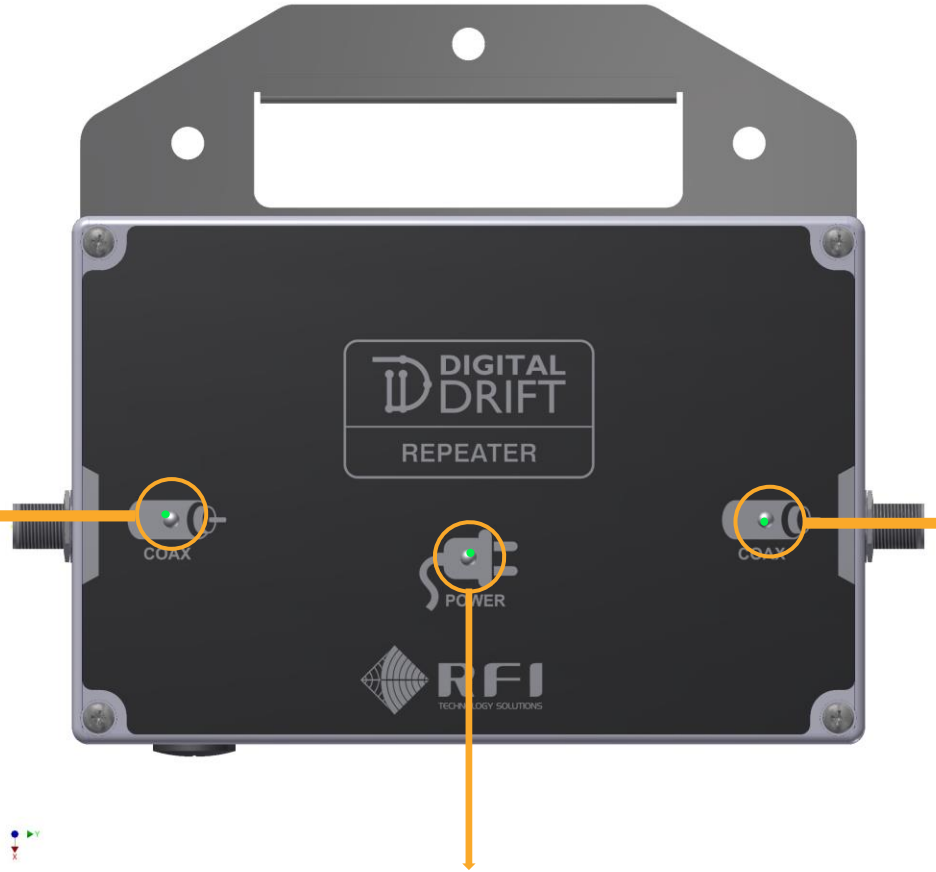
The Repeater extends communications by ending one cable segment and starting another.

Features:

- Can be powered from the coax or a local power supply
- Contains two coax interfaces (left and right) with a l2 switch in between
- DC power can be injected onto the “right” coax cable segment



Digital Drift – Repeater Wave 2 - Indicators



- Green: > 200Mbps
- Orange: 100-200Mbps
- Red: < 100Mbps
- Off: No connection to partner

- Green: > 200Mbps
- Orange: 100-200Mbps
- Red: < 100Mbps
- Off: No connection to partner

- Green: > 32V
- Orange: 20-32V
- Red: < 20V

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Digital Drift – Repeater Wave 2 - Connections

This is the connection to the upstream cable segment that carries the Data and DC power.
NOTE- this is a 75 Ohm connection so only use the cable supplied with the unit

This is the connection to the extended (new) cable segment
NOTE- this is a 75 Ohm connection so only use the cable supplied with the unit

Power – This point can be used to inject power onto the right-side coax

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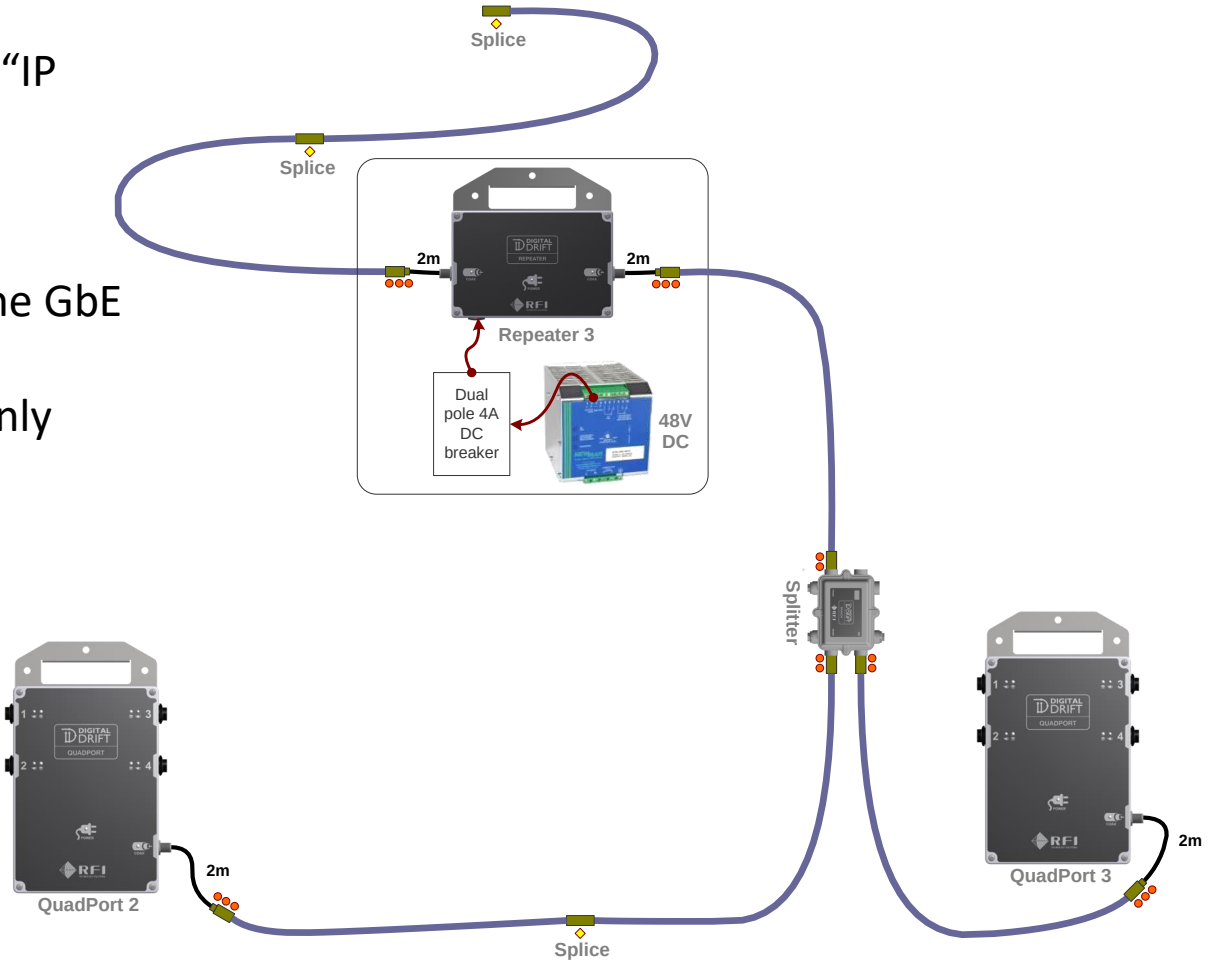
Digital Drift – Repeater Wave 2 - Configuration

Configuration – 2 coax interfaces:

- Not mandatory
- Typically, only the “name” and “IP address details” are set

VLAN Support:

- None- packets pass between the GbE and the coax unmodified
- Management interface – will only respond to untagged frames



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Digital Drift – Wave 2 - MAC address conventions

The device type can be identified by the fourth set of digits of the MAC address as below:

XX:XX:XX:CX:XX:XX

C1 - QuadPort

C2 - Portal

C3 - Repeater (left)

C4 - Repeater (right)

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