



NetStream Diplo

Quick Link Configuration Guide



Date: 21-October-2017 | Rev. 1-0

Note:

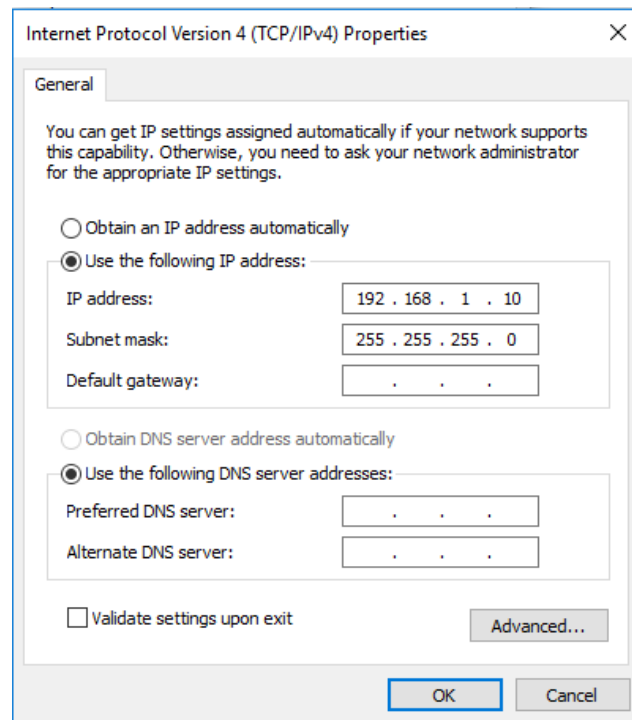
This technical guide is to help you with quick and easily configuration and link setup of NetStream Diplo. For detail configurations please read the user manual.

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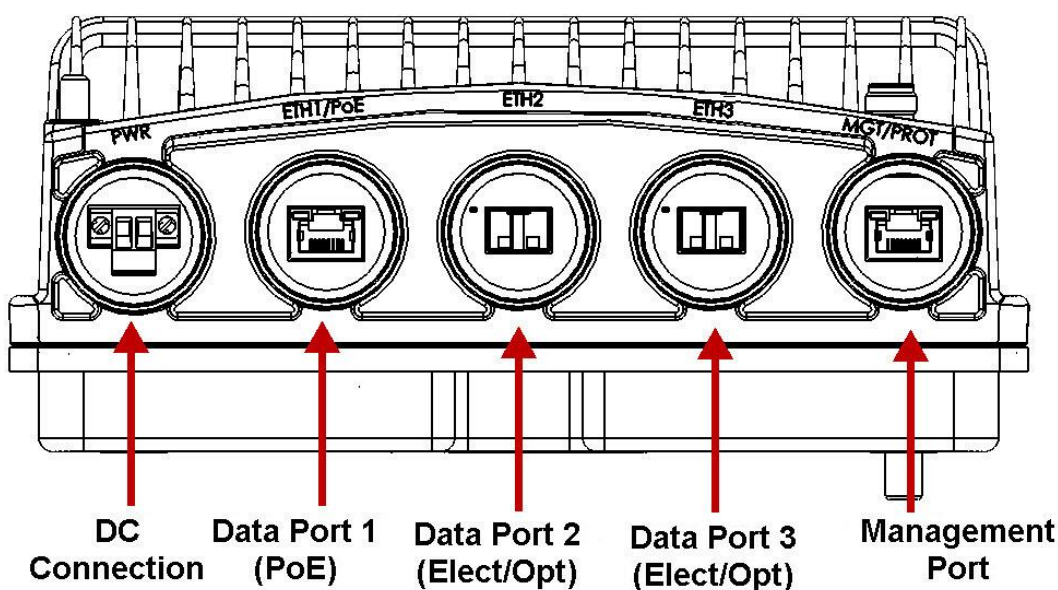
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Setup PC/Laptop and Logon:

To obtain contact between the PC and the NetStream Diplo unit, it is necessary to configure an IP address on the PC within the same subnet as the NetStream Diplo unit. The default NetStream Diplo IP address is 192.168.1.1. Set the PC address to e.g. 192.168.1.10 and subnet mask to 255.255.255.0.



1. Locate the MNG port on the unit and connect your PC to this port with an Ethernet cable.



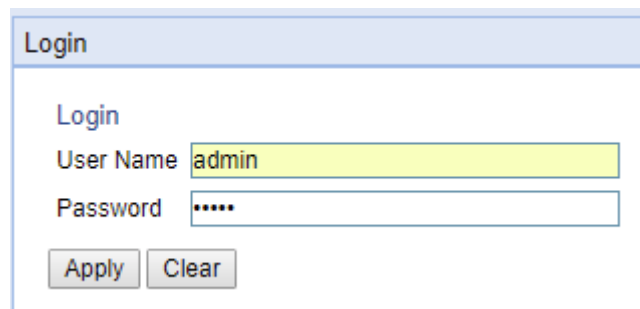
Important note:

NetStream Diplo is a carrier class device and as required by carrier industry the unit is not by default manageable via Eth1 or Eth2 port.

The unit by default DOES NOT respond to PING on Eth1 and Eth2 ports. Ping is only possible via MNG port by default.

If you are unable to ping, please do check the firewall is not blocking this service. Try pinging another laptop using nothing but an Ethernet cable in between and once you could ping the other laptop then try pining the unit when connected to Management Port.

2. Open an Internet browser (Internet Explorer or Mozilla Firefox).
3. Enter the default IP address “192.168.1.1” in the Address Bar. The Login page



The screenshot shows a web browser window with a title bar that says "Login". Inside the window, there is a form with the following elements:

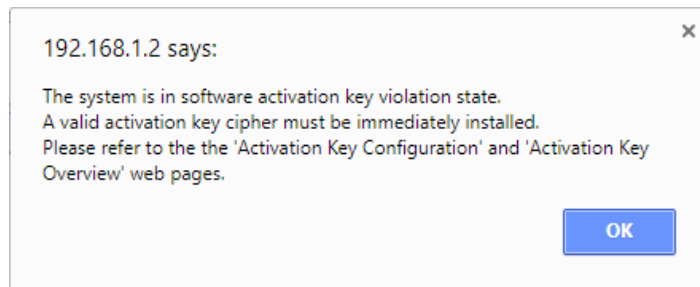
- A label "Login" above the form fields.
- A "User Name" label followed by a text input field containing the text "admin".
- A "Password" label followed by a password input field containing five asterisks "*****".
- Two buttons at the bottom: "Apply" and "Clear".

Note: If you are unable to ping, please do check the firewall is not blocking this service.

4. The default credentials are below:
Username: admin
Password : admin

Activating Demo Mode:

You will be notified of the activation key violation. This means that you need to enter the required activation keys (licenses) for your link parameters like capacity, MRMC, 2nd Core activation, XPIC etc.



For now you can activate demo mode. Demo mode is available, which enables all features for 60 days. When demo mode expires, the most recent valid activation key goes into effect. The 60-day period is only counted when the system is powered up. 10 days before demo mode expires, an alarm is raised indicating that demo mode is about to expire.

To activate demo mode:

- 1 - Select Platform > Activation Key > Activation Key Configuration. The Activation Key Configuration page opens.
- 2 - In the Demo admin field, select Enable.

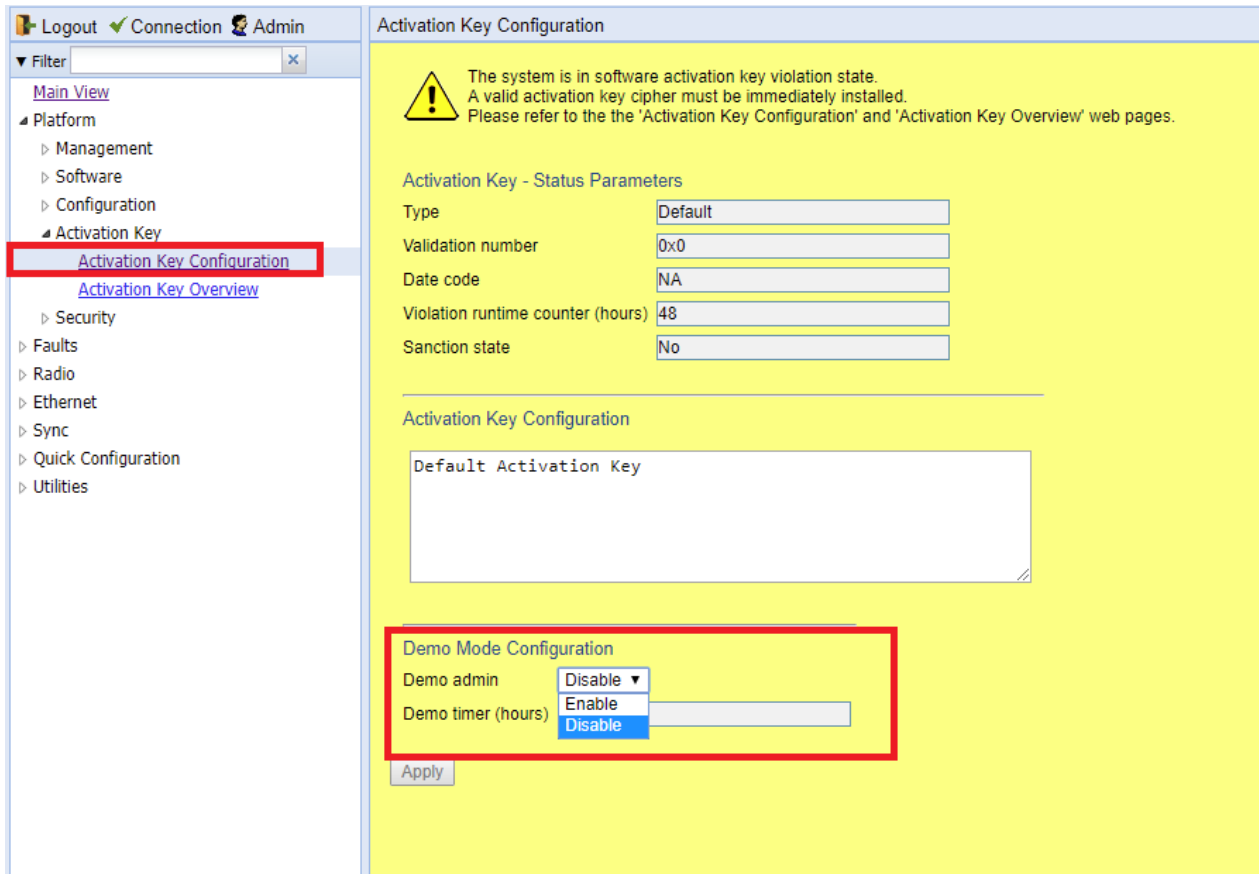
Important note:

Each unit has a limited number of hours for Demo licenses.

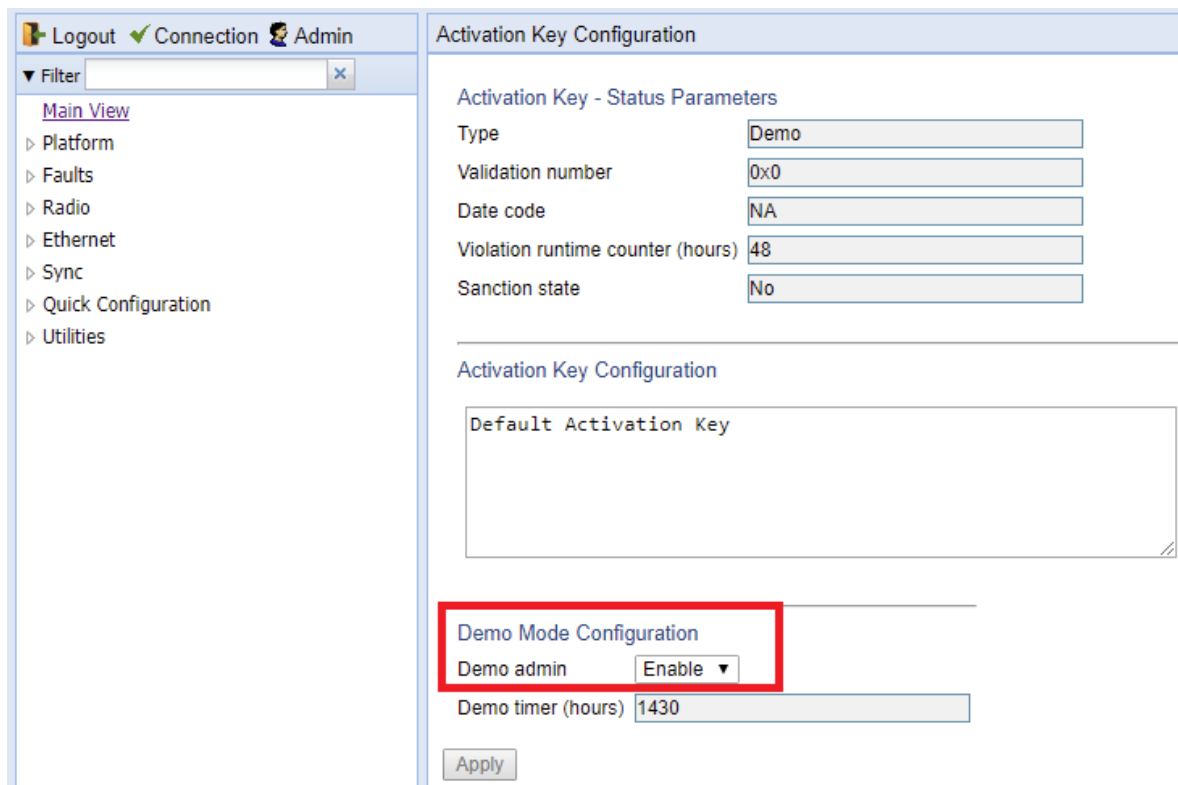
The Demo hours are calculated based the number of hours the unit has been powered on while the demo mode is enabled.

Please make sure the number of hours of demo activation are spent when you are actually using the unit for demonstration.

You can disable the demo mode when you are not using the features controlled by the demo mode and you can enable demo mode again at any time.



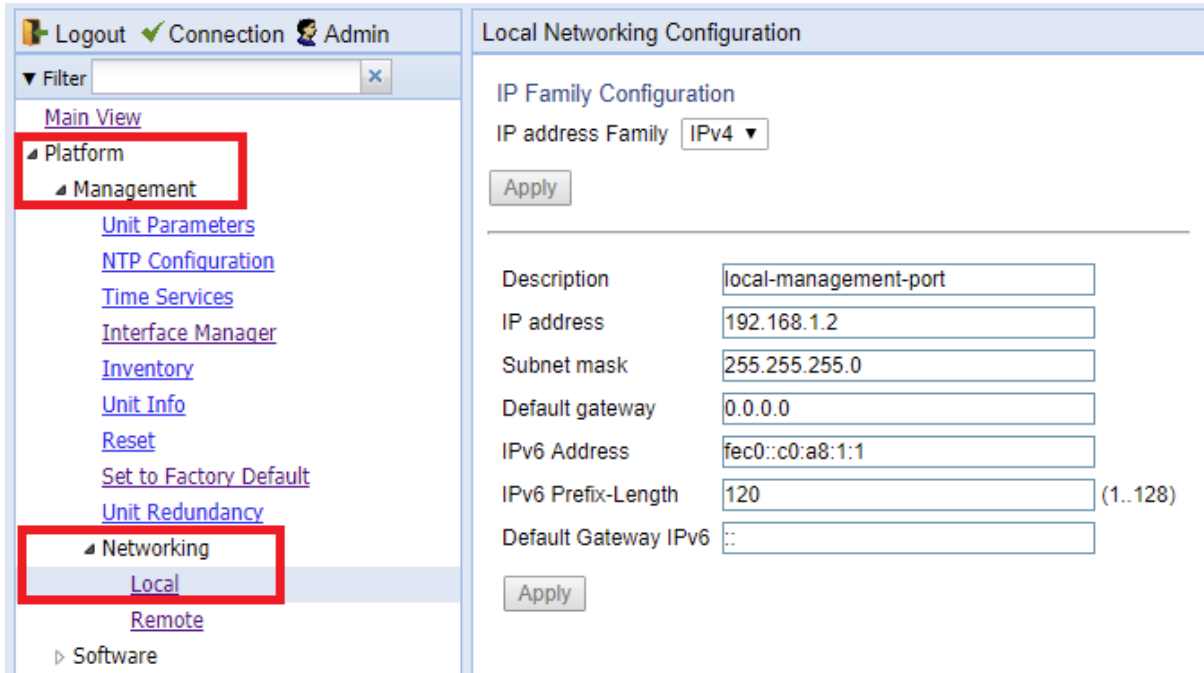
3 Click Apply.



The Demo timer field displays the number of hours that remain before demo mode expires.

Changing the Management IP Address:

1. Select Platform > Management > Networking > Local. The Local Networking Configuration page opens.



The screenshot shows the Netronics web interface. On the left, a navigation menu is visible with 'Platform' expanded to 'Management', which is further expanded to 'Networking', and 'Local' is selected. The main content area is titled 'Local Networking Configuration'. Under 'IP Family Configuration', 'IP address Family' is set to 'IPv4'. Below this, there are several input fields: 'Description' (local-management-port), 'IP address' (192.168.1.2), 'Subnet mask' (255.255.255.0), 'Default gateway' (0.0.0.0), 'IPv6 Address' (fec0::c0:a8:1:1), 'IPv6 Prefix-Length' (120), and 'Default Gateway IPv6' (::). There are 'Apply' buttons for both the IP Family Configuration and the main configuration section.

2. Optionally, in the Description field, enter descriptive information about the unit.
3. In the IP address field, enter an IP address for the unit. You can enter the address in IPv4 format in this field, and/or in IPv6 format in the IPv6 Address field. The unit will receive communications whether they are sent to its IPv4 address or its IPv6 address.
4. In the Subnet mask field, enter the subnet mask.
5. Optionally, in the Default gateway field, enter the default gateway address.
6. Click **Apply**.

Important note:

The Management IP Address is the only way the unit can be managed if the inbound management is not activated or a VALN switch with management VLAN is not available at site.

Please make sure you note down the management IP address you entered and make sure another colleague in your organization knows about it.

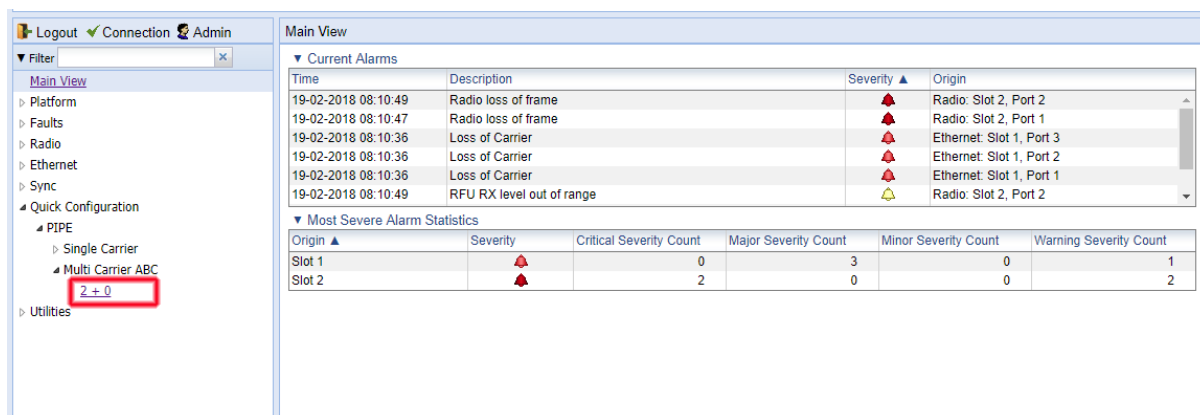
If management IP address is lost the recovery process should be taken which involves use of a special cable. For details please contact Netronics Support.

Setting up a Quick PIPE:

Depending on your configuration type and device type, you can select the configuration. For this guide, we will use a simple configuration that is Single carrier 1+0.

To configure a 1+0 link using the Quick Configuration wizard:

1. Select Quick Configuration > PIPE > Multi Carrier ABC > 2+0.

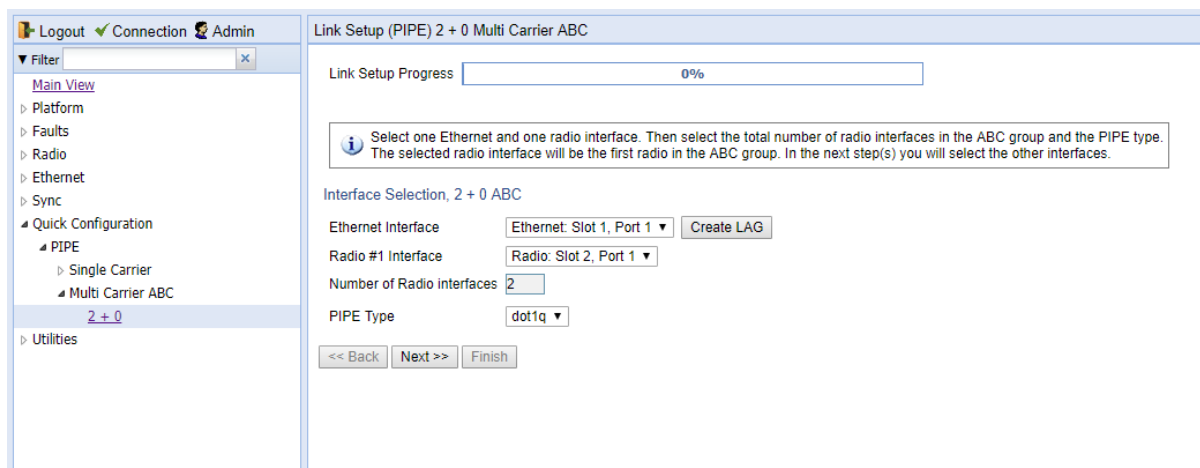


The screenshot shows the Netronics web interface. On the left, the navigation menu is expanded to 'Quick Configuration' > 'PIPE' > 'Multi Carrier ABC' > '2+0', which is highlighted with a red box. The main view displays 'Current Alarms' and 'Most Severe Alarm Statistics'.

Time	Description	Severity	Origin
19-02-2018 08:10:49	Radio loss of frame	Red	Radio: Slot 2, Port 2
19-02-2018 08:10:47	Radio loss of frame	Red	Radio: Slot 2, Port 1
19-02-2018 08:10:36	Loss of Carrier	Red	Ethernet: Slot 1, Port 3
19-02-2018 08:10:36	Loss of Carrier	Red	Ethernet: Slot 1, Port 2
19-02-2018 08:10:36	Loss of Carrier	Red	Ethernet: Slot 1, Port 1
19-02-2018 08:10:49	RFU RX level out of range	Yellow	Radio: Slot 2, Port 2

Origin	Severity	Critical Severity Count	Major Severity Count	Minor Severity Count	Warning Severity Count
Slot 1	Red	0	3	0	1
Slot 2	Red	2	0	0	2

Page 1 of the “Link Setup (PIPE) 2 + 0 Multi Carrier ABC” wizard opens.



The screenshot shows the 'Link Setup (PIPE) 2 + 0 Multi Carrier ABC' wizard. The progress bar is at 0%. An information box states: 'Select one Ethernet and one radio interface. Then select the total number of radio interfaces in the ABC group and the PIPE type. The selected radio interface will be the first radio in the ABC group. In the next step(s) you will select the other interfaces.'

Interface Selection, 2 + 0 ABC

Ethernet Interface: Ethernet: Slot 1, Port 1

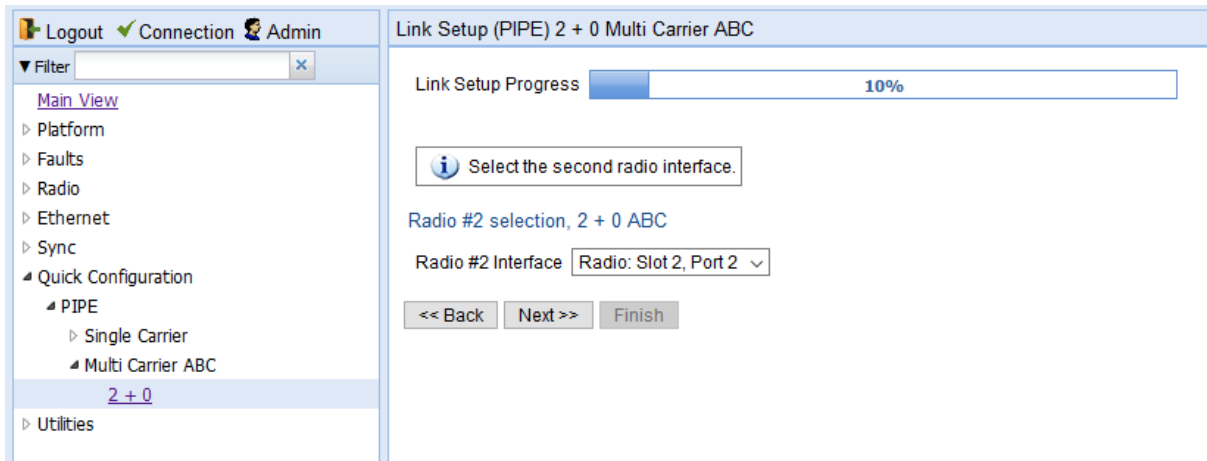
Radio #1 Interface: Radio: Slot 2, Port 1

Number of Radio interfaces: 2

PIPE Type: dot1q

<< Back **Next >>** Finish

2. In the Radio Interface field, select a Radio interface. “Radio Slot 2, Port 1” in this case.
3. In PIPE Type select dot1q.
4. Click **Next**.



Link Setup (PIPE) 2 + 0 Multi Carrier ABC

Link Setup Progress 10%

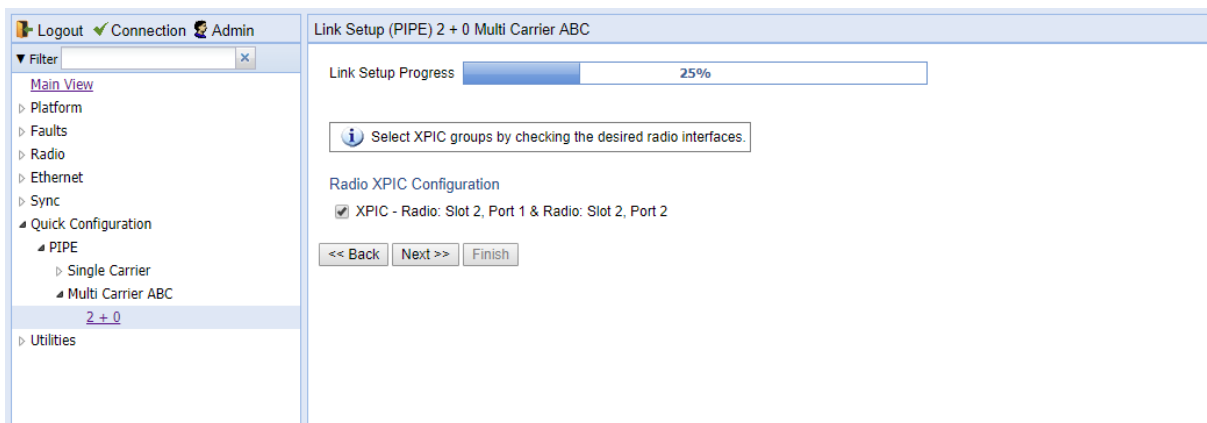
i Select the second radio interface.

Radio #2 selection, 2 + 0 ABC

Radio #2 Interface Radio: Slot 2, Port 2

<< Back Next >> Finish

5. Select the second radio chain. “Radio Slot 2, Port 1” in this case.
6. Click **Next**.



Link Setup (PIPE) 2 + 0 Multi Carrier ABC

Link Setup Progress 25%

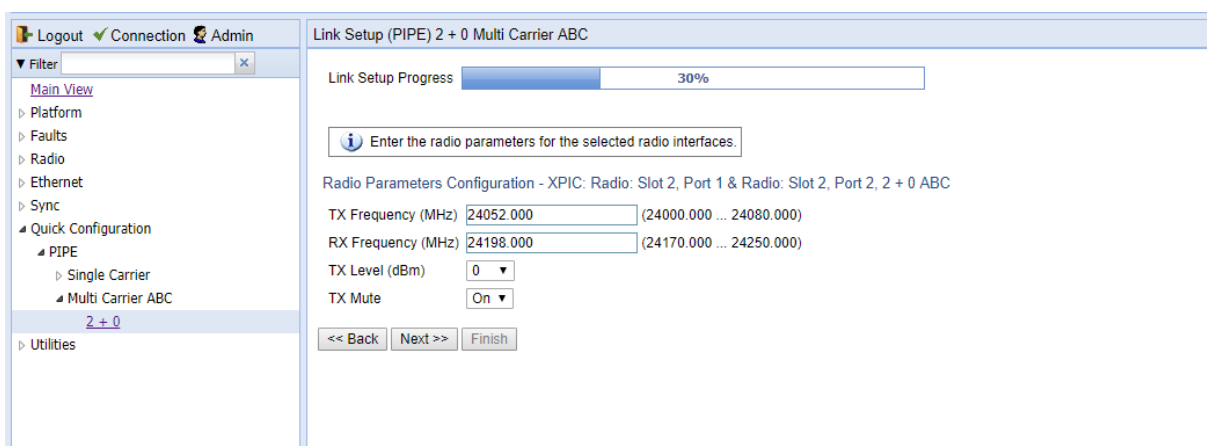
i Select XPIC groups by checking the desired radio interfaces.

Radio XPIC Configuration

XPIC - Radio: Slot 2, Port 1 & Radio: Slot 2, Port 2

<< Back Next >> Finish

7. Check the XPIC check box.
8. Click **Next**.



Link Setup (PIPE) 2 + 0 Multi Carrier ABC

Link Setup Progress 30%

i Enter the radio parameters for the selected radio interfaces.

Radio Parameters Configuration - XPIC: Radio: Slot 2, Port 1 & Radio: Slot 2, Port 2, 2 + 0 ABC

TX Frequency (MHz) (24000.000 ... 24080.000)

RX Frequency (MHz) (24170.000 ... 24250.000)

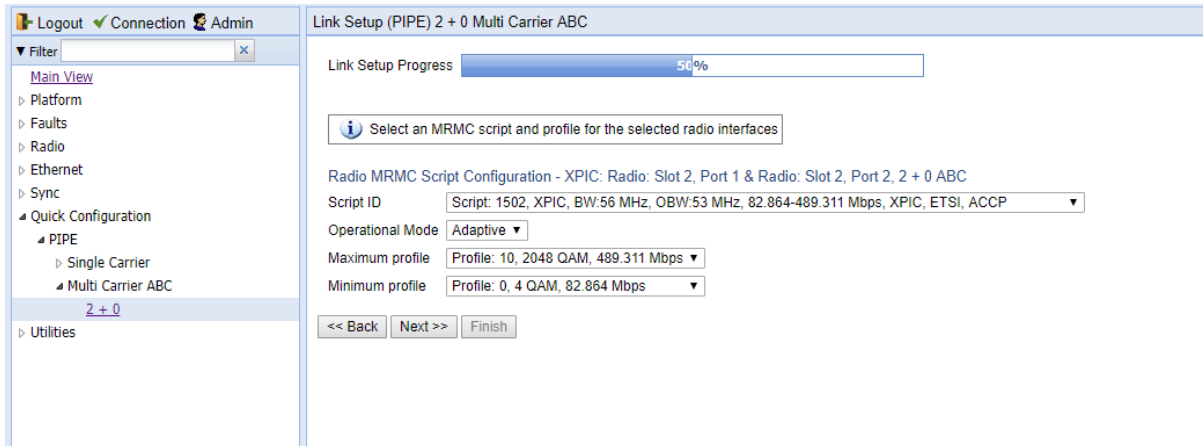
TX Level (dBm)

TX Mute

<< Back Next >> Finish

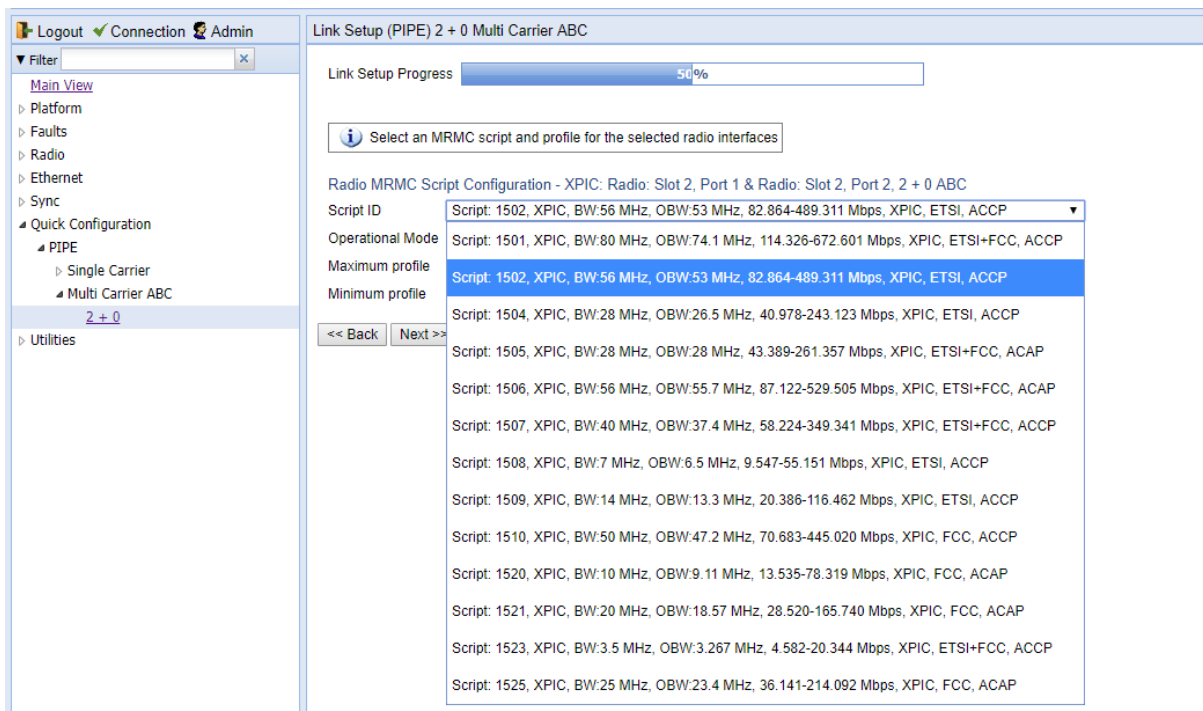
9. In the **TX Frequency (MHz)** field, set the transmission radio frequency in MHz. Assign this frequency as the RX Frequency on the remote radio.
10. In the **RX Frequency (MHz)** field, set the received radio frequency in MHz. Assign this frequency as the TX Frequency on the remote radio.

11. In the **TX Level (dBm)** field, enter the desired TX signal level (TSL). The range of values depends on the frequency and Product type.
12. To mute the TX output of the RFU, select **On** in the **TX mute** field. To unmute the TX output of the RFU, select **Off**.
13. Click **Next**.



14. In the **Script ID** field, select the MRMC script you want to assign to the radio.

Please note the choice of script specifies the Channel bandwidth and so it will affect the capacity achieved. For maximum capacity choose the script with maximum channel size. If you operate the unit in a network for which you have specific frequency license, then you will have to follow the requirements of your frequency license.



15. In the **Operational Mode** field, select the ACM mode: **Adaptive**.

Note:

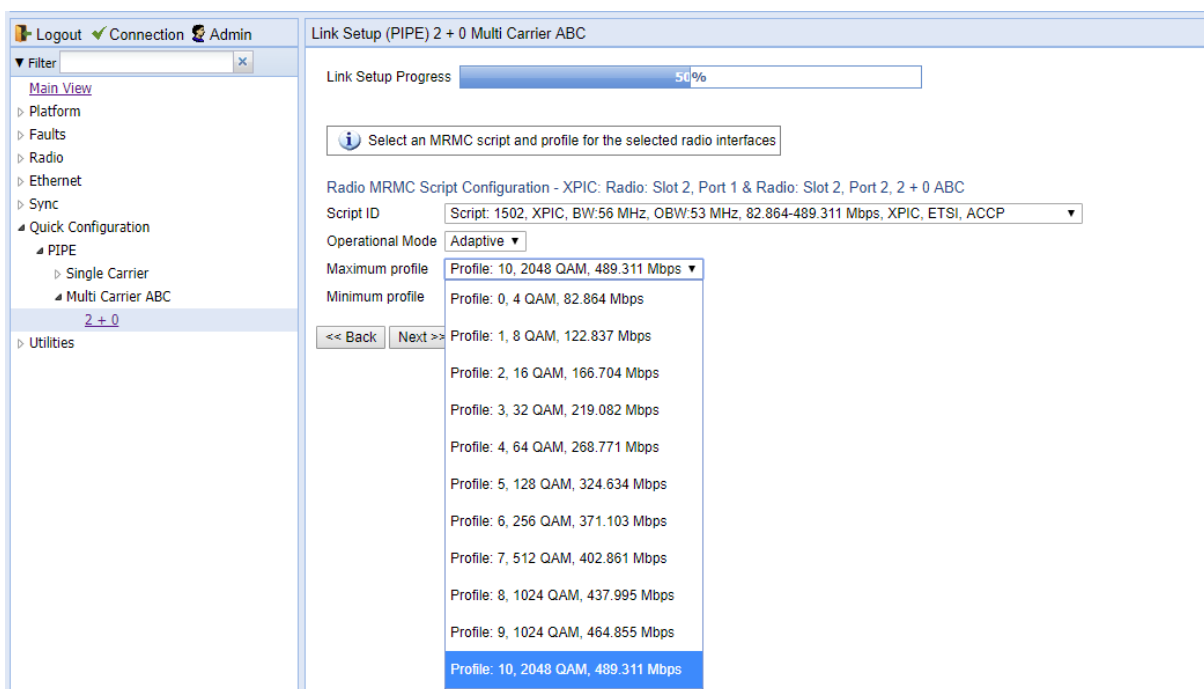
In most cases using Adaptive ACM mode provides maximum capacity and maximum stability of the link.

In special cases specified by a link design you may limit the radio to fixed mode to make sure the link works only if it can provide the required capacity and will disconnect if the environmental radio conditions are not suitable for the specified capacity. In most case you will not chose this mode.

16. Select the **Maximum and Minimum profile**.

Note:

In order to achieve maximum flexibility of the link for environmental radio conditions choose the highest modulation as Maximum and use the lowest modulation as minimum.



Link Setup (PIPE) 2 + 0 Multi Carrier ABC

Link Setup Progress 50%

Select an MRMC script and profile for the selected radio interfaces

Radio MRMC Script Configuration - XPIC: Radio: Slot 2, Port 1 & Radio: Slot 2, Port 2, 2 + 0 ABC

Script ID Script: 1502, XPIC, BW:56 MHz, OBW:53 MHz, 82.864-489.311 Mbps, XPIC, ETSI, ACCP

Operational Mode Adaptive

Maximum profile Profile: 10, 2048 QAM, 489.311 Mbps

Minimum profile Profile: 0, 4 QAM, 82.864 Mbps

Profile: 1, 8 QAM, 122.837 Mbps

Profile: 2, 16 QAM, 166.704 Mbps

Profile: 3, 32 QAM, 219.082 Mbps

Profile: 4, 64 QAM, 268.771 Mbps

Profile: 5, 128 QAM, 324.634 Mbps

Profile: 6, 256 QAM, 371.103 Mbps

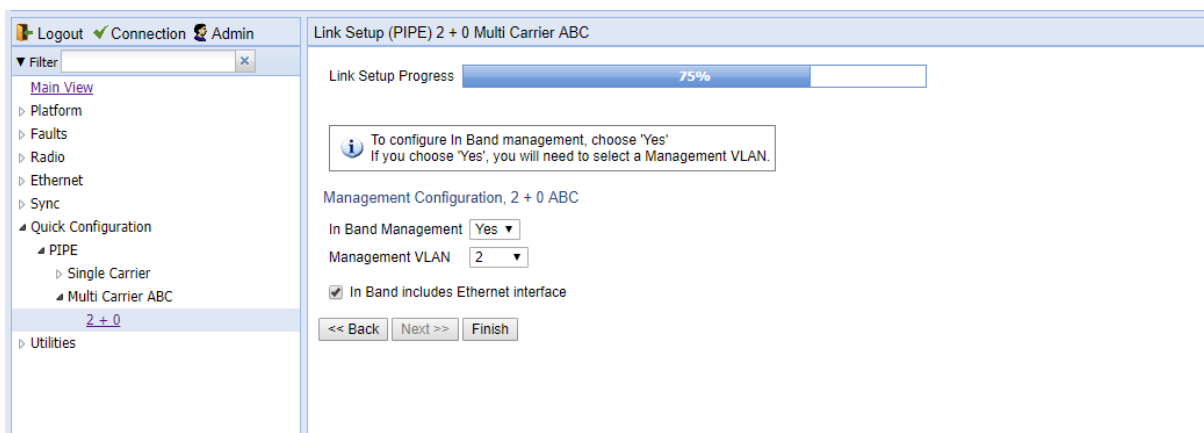
Profile: 7, 512 QAM, 402.861 Mbps

Profile: 8, 1024 QAM, 437.995 Mbps

Profile: 9, 1024 QAM, 464.855 Mbps

Profile: 10, 2048 QAM, 489.311 Mbps

17. Click **Finish**.



Link Setup (PIPE) 2 + 0 Multi Carrier ABC

Link Setup Progress 75%

To configure In Band management, choose 'Yes'
If you choose 'Yes', you will need to select a Management VLAN.

Management Configuration, 2 + 0 ABC

In Band Management Yes

Management VLAN 2

In Band includes Ethernet interface

Back Next Finish

18. In the **In Band Management** field, select **Yes** to configure in-band management. If you select **Yes**, the **Management VLAN** field appears.

Note:

Selecting **Yes** is required if you want to manage the unit using the Eth1 and Eth2 ports or from a remote site in a network and along with the actual link traffic.

Select **No** only if you want to limit the management of unit to the physical connect only to the Management port of the unit.

19. If you selected **Yes** in the **In Band Management** field, select the management VLAN in the **Management VLAN** field.

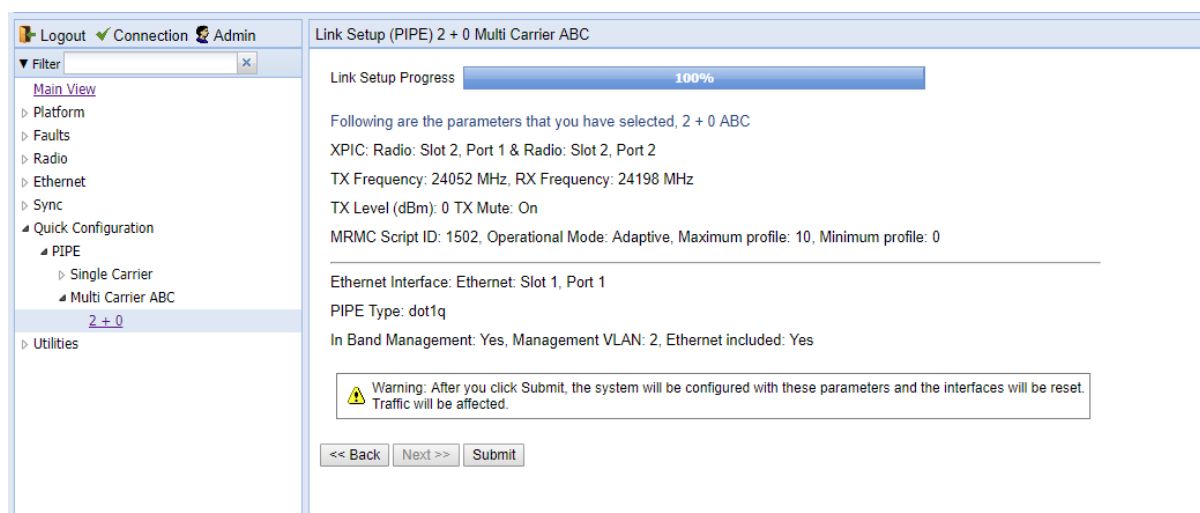
Note:

After selecting the In Band management and selecting the VLAN, the unit can be managed only if it is connected to a VLAN aware switch with the VLAN defined on the port to which the radio is connected.

This will not affect possibility of managing the unit via Management port. The unit will still be manageable via Management port.

20. If you want to use the Ethernet interface as well as the radio interface for in-band management, select **In Band includes Ethernet interface**.

21. Click **Finish**.




Link Setup (PIPE) 2 + 0 Multi Carrier ABC

Link Setup Progress 100%

Following are the parameters that you have selected, 2 + 0 ABC

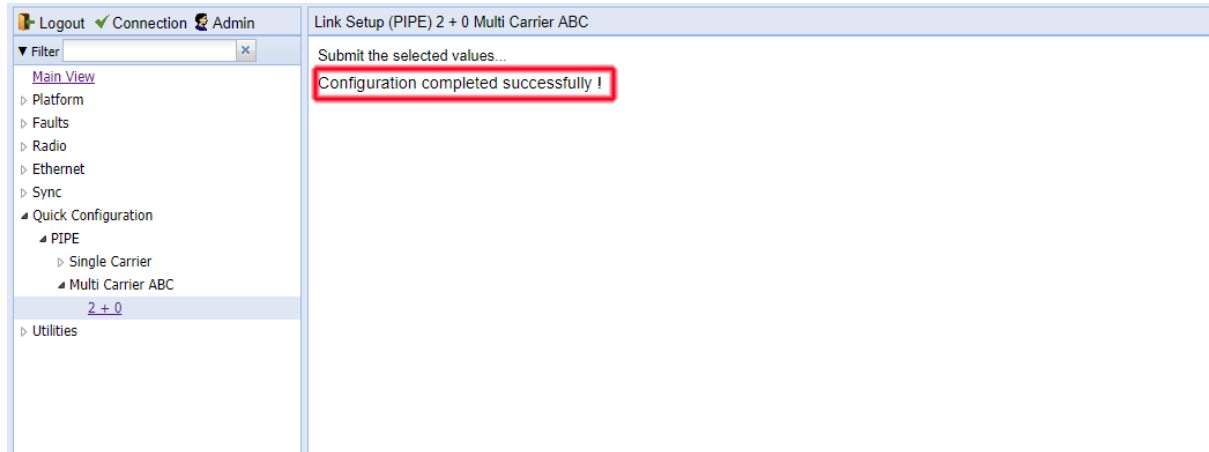
XPIC: Radio: Slot 2, Port 1 & Radio: Slot 2, Port 2
 TX Frequency: 24052 MHz, RX Frequency: 24198 MHz
 TX Level (dBm): 0 TX Mute: On
 MRMC Script ID: 1502, Operational Mode: Adaptive, Maximum profile: 10, Minimum profile: 0

Ethernet Interface: Ethernet: Slot 1, Port 1
 PIPE Type: dot1q
 In Band Management: Yes, Management VLAN: 2, Ethernet included: Yes

 Warning: After you click Submit, the system will be configured with these parameters and the interfaces will be reset. Traffic will be affected.

This page displays the parameters you have selected for the link.

22. Click **Submit**.



You will see message confirming successful completion of the wizard.

Repeat this on the second unit while SWAPPING the Tx and Rx frequencies.

Unmuting the Radios:

At this point the link setup is done but link is not established. This is because we have muted the radios.

Radio Parameters								
▼ Radio Parameters Table								
Radio location ▲	Type	TX Frequency	RX Frequency	Operational TX Level (dBm)	RX Level (dBm)	Modem MSE	Defective Blocks	TX Mute Status
Radio: Slot 2, Port 1	RFU-N-DC	24236.000	24014.000	0	-93	-99.00	0	On
Radio: Slot 2, Port 2	RFU-N-DC	24236.000	24014.000	0	-93	-99.00	10777	On

[Edit](#)

To unmute the radios so that the radio are able to transmit, follow the steps below.

1. Click on the Radio Slot2, Port 1. Once highlighted, click on **Edit**.
2. A window will open up. Select the **Tx Mute** to **Off**.

Radio Parameters - Google Chrome
— □ ×

192.168.1.2/responder.fcgi1?winid=174&deviceid=0&winsystemname=rf-status-...

Status Parameters

Radio location

Type

XPIC support

Radio Interface operational status

Operational TX Level (dBm)

RX Level (dBm)

Modem MSE (dB)

Modem XPI (dB)

Defective Blocks

TX Mute Status

Adaptive TX power operational status

Frequency control (Local)

TX Frequency (MHz) (24170.000..24250.000)

RX Frequency (MHz) (24000.000..24080.000)

TX to RX frequency separation (MHz)

Set also remote unit

Configuration Parameters

TX Level (dBm) (-20..0)

TX mute ▼

RSL Connector Source ▼

Link Id (1..65535)

Adaptive TX power admin ▼

Page Refresh Interval (Seconds) ▼ Last Loaded: 08:45:31

- Click on apply and the Radio Mute status will be update to Off. In this mode the radio will start transmitting. Do this for both side radios of the link.

Radio location ▲	Type	TX Frequency	RX Frequency	Operational TX Level (dBm)	RX Level (dBm)	Modem MSE	Defective Blocks	TX Mute Status
Radio: Slot 2, Port 1	RFU-N-DC	24236.000	24014.000	0	-36	-43.18	0	Off
Radio: Slot 2, Port 2	RFU-N-DC	24236.000	24014.000	0	-85	-99.00	10777	On

Edit

Your radio is now transmitting.

- Repeat Step 1-3 with Radio Slot2, **Port 2**.

Repeat this process on the second unit by choosing same exact parameters and SWAPPING the TX and RX frequencies.

If you finished the steps on the second radio, at this stage you should be able to see Rx Level of -50 dbm or more on each radio and the link should get established on both radio chains.

After configuring the second unit position the units vertically using a part of the foam coming in the units package as shown in the picture below.



At this stage you should be able to see the received signal of each unit on the other unit.

Please note this setup is ideal for bench testing the units while the radiator fins are vertical and the ports are available on the top side for testing. The unit can be operated at proper temperature for long time.

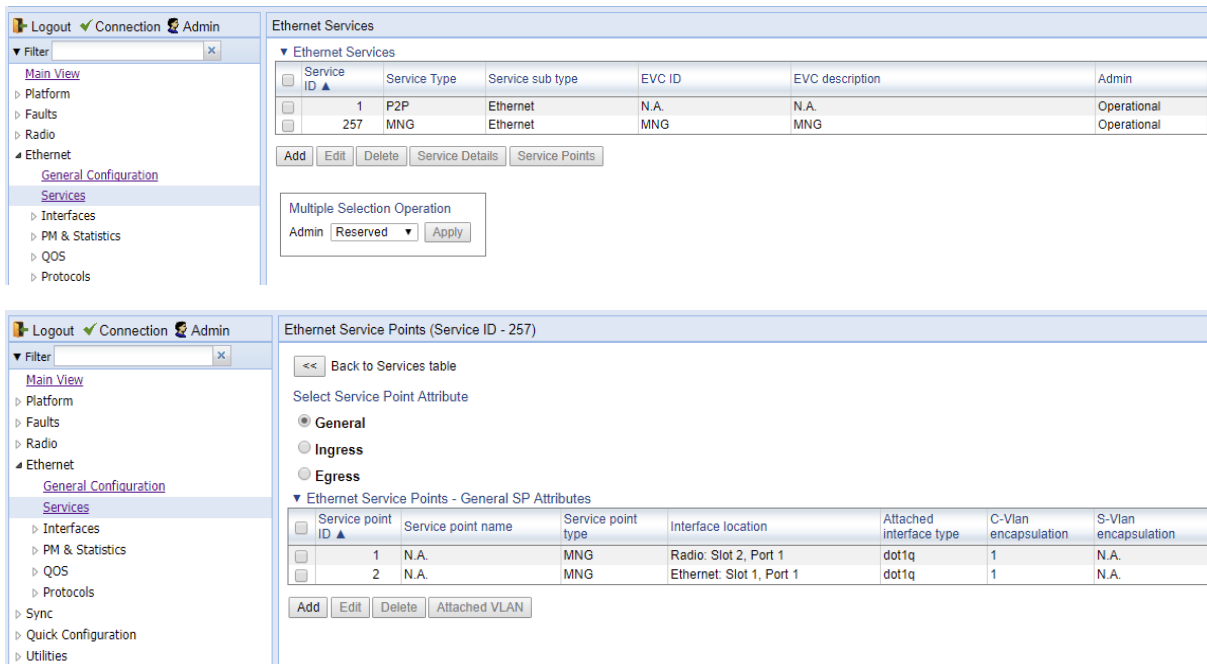
Please note this setup is not ideal for testing link capacity as the radio conditions are not what they should be in an actual link installed in the field on the antenna.

For more detailed information on installation of the link please refer to **NetStream Diplo Installation Guide** available on Netronics knowledge base section of the website.

If you need further assistance, please contact us on support@netronics-networks.com

Enabling Management via Ethernet Port:

At this point your link is established. Now if you connect your LAN cable to the Ethernet port from laptop, you might not be able to ping the radio. This is because Management VLAN 1 is set on the radio.



The screenshot displays the Netronics configuration interface. The top section shows the 'Ethernet Services' table with the following data:

Service ID	Service Type	Service sub type	EVC ID	EVC description	Admin
1	P2P	Ethernet	N.A.	N.A.	Operational
257	MNG	Ethernet	MNG	MNG	Operational

Below the table is a 'Multiple Selection Operation' section with a dropdown menu set to 'Reserved' and an 'Apply' button.

The bottom section shows the 'Ethernet Service Points (Service ID - 257)' configuration. It includes a 'Select Service Point Attribute' section with radio buttons for 'General', 'Ingress', and 'Egress'. The 'General' attribute is selected, and the 'Ethernet Service Points - General SP Attributes' table is displayed with the following data:

Service point ID	Service point name	Service point type	Interface location	Attached interface type	C-Vlan encapsulation	S-Vlan encapsulation
1	N.A.	MNG	Radio: Slot 2, Port 1	dot1q	1	N.A.
2	N.A.	MNG	Ethernet: Slot 1, Port 1	dot1q	1	N.A.

If you wish to continue like this, then set the PC/laptop NIC to VLAN 1 or use a VLAN aware switch with VLAN 1 activated on the port connected to the unit. You will be able to ping the radio. Or come from a switch port which is set to VLAN 1.

If you do not wish to set the management VLAN, then you will need to remove the Management service and set a new management service which Untagged C-VLAN.

1. Set a service point for Management for Ethernet interface.

Ethernet Service Points (Service ID - 257)

Back to Services table

Select Service Point Attribute

- General**
- Ingress
- Egress

Ethernet Service Points - General SP Attributes

Service point ID	Service point name	Service point type
1	N.A.	MNG

Add Edit Delete Attached VLAN

Ethernet Service Points - Add (Management Service)

Pre defined options: Option #1 (MNG, dot1q)

Service ID: 257

Service point ID: 1

Service point name: N.A.

Service point type: MNG

General SP Attributes

Interface location: Ethernet: Slot 1, Port 1

Attached interface type: dot1q

C-Vlan encapsulation: Untagged

S-Vlan encapsulation: N.A.

Ingress Attributes

Learning admin: Enable

Allow flooding: Allow

Allow broadcast: Allow

CoS Mode: Interface-Decision

Default CoS: 0

Egress Attributes

C-Vlan CoS preservation: Enable

C-Vlan preservation: Disable

S-Vlan CoS preservation: Enable

Marking admin: Enable

Service bundle ID: 1

Apply

Last Loaded: 08:50:15 Refresh Close

2. Set a service point for Management for Radio interface.

Ethernet Service Points (Service ID - 257)

Back to Services table

Select Service Point Attribute

- General**
- Ingress
- Egress

Ethernet Service Points - General SP Attributes

Service point ID	Service point name	Service point type
1	N.A.	MNG
2	N.A.	MNG

Add Edit Delete Attached VLAN

Ethernet Service Points - Add (Management Service)

Pre defined options: Option #1 (MNG, dot1q)

Service ID: 257

Service point ID: 2

Service point name: N.A.

Service point type: MNG

General SP Attributes

Interface location: Radio: Slot 2, Port 1

Attached interface type: dot1q

C-Vlan encapsulation: Untagged

S-Vlan encapsulation: N.A.

Ingress Attributes

Learning admin: Enable

Allow flooding: Allow

Allow broadcast: Allow

CoS Mode: Interface-Decision

Default CoS: 0

Egress Attributes

C-Vlan CoS preservation: Enable

C-Vlan preservation: Disable

S-Vlan CoS preservation: Enable

Marking admin: Enable

Service bundle ID: 1

Apply

Last Loaded: 08:51:30 Refresh Close

3. The service points status will be as below.

Ethernet Service Points (Service ID - 257)

Back to Services table

Select Service Point Attribute

- General
- Ingress
- Egress

Ethernet Service Points - General SP Attributes

Service point ID	Service point name	Service point type	Interface location	Attached interface type	C-Vlan encapsulation	S-Vlan encapsulation
1	N.A.	MNG	Ethernet: Slot 1, Port 1	dot1q	Untagged	N.A.
2	N.A.	MNG	Radio: Slot 2, Port 1	dot1q	Untagged	N.A.

Buttons: Add, Edit, Delete, Attached VLAN

4. Make sure the Ethernet ports are operational. You check and configure them in Interface Manager.

Interface Manager

Interface location	MAC address	Admin status	Operational Status
Ethernet: Slot 1, Port 1	80:86:98:97:10:63	Up	Down
Ethernet: Slot 1, Port 2	80:86:98:97:10:64	Up	Down
Ethernet: Slot 1, Port 3	80:86:98:97:10:65	Up	Down
Radio: Slot 2, Port 1	80:86:98:97:10:66	Up	Up
Radio: Slot 2, Port 2	80:86:98:97:10:67	Up	Down

Buttons: Edit

Multiple Selection Operation
Admin status: Up (dropdown) Apply

Now if you connect the radio to your laptop via Ethernet/PoE port, you will be able to ping the radio and the remote radio.