

PTP 820: Bringing up your first link!

13 February 2015



What's needed to bring up a microwave link?

1. To access the link:
 - a) IP addresses: 10.120.109.100, 10.120.109.101
 - b) Logins and passwords: admin and admin
2. RF
 - a) Tx and Rx frequencies: 19400 MHz, 17840 MHz
 - b) Channel bandwidth: 30 MHz
 - c) Modulation mode(s): Adaptive, from QPSK (4 QAM) to 2048 QAM
 - d) Transmit powers: 2 dBm
 - e) Link ID (identifier): 1
3. Ethernet
 - a) In-band or Out-Of-Band management?
 - b) Ethernet ports to be used
 - c) VLAN

Bringing up your first link!

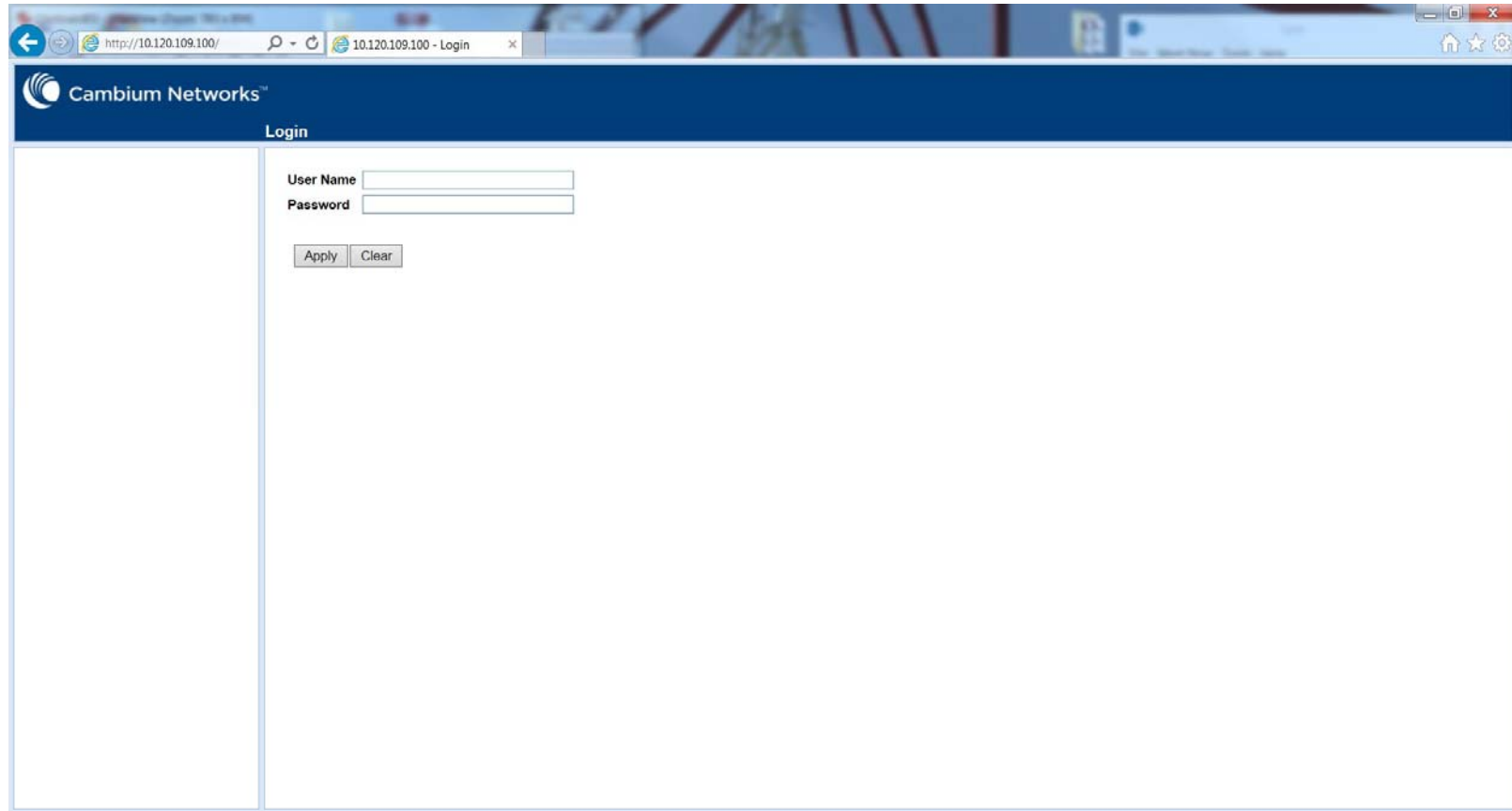
The following steps configure a PTP 820 link as a simple transparent Layer 2 bridge:

1. Login
2. Configure the IP address
3. Apply license key(s)
4. Select/configure MRMC scripts (channel bandwidth, ACM, and modulation mode)
5. Configure Tx/Rx Frequency, Tx Power, and Link ID
6. Configure ATPC and Reference Rx Level
7. Configure the Ethernet service
 - OOB Management
 - In-band Management

Here's how your laptop should be connected to a radio

- Here is a picture of a laptop connected to a PTP 820 radio via an Ethernet cable.

Enter IP address into web browser (default is 192.168.1.1)



The screenshot shows a web browser window with the address bar displaying `http://10.120.109.100/`. The page title is "10.120.109.100 - Login". The main content area features the Cambium Networks logo and the word "Login". Below this, there are two input fields labeled "User Name" and "Password". At the bottom of the form, there are two buttons: "Apply" and "Clear".

Main View—this is the first screen you see after logging in

The screenshot shows the Cambium Networks Main View web interface. The browser address bar displays <http://10.120.109.100/>. The interface includes a navigation menu on the left with options: Main View, Platform, Faults, Radio, Ethernet, and Sync. The main content area is titled "Main View" and contains two tables.

Current Alarms

Time	Description	Severity	Origin
02-01-2013 00:47:54	Radio loss of frame	Red triangle	Radio: Slot 2, port 1
01-01-2013 00:00:46	Ethernet Loss of Carrier	Red triangle	Ethernet: Slot 1, port 3
02-01-2013 01:43:11	RFU RX level out of range	Yellow triangle	Radio: Slot 2, port 1
01-01-2013 00:01:30	RFU TX Mute	Yellow triangle	Radio: Slot 2, port 1
23-02-2000 23:06:51	Demo license is active	Yellow triangle	Unit

Most Severe Alarm & Statistics per Slot

Slot	Severity	Critical Severity Count	Major Severity Count	Minor Severity Count	Warning Severity Count
Slot 0	Green triangle	0	0	0	0
Slot 1	Red triangle	0	1	0	0
Slot 2	Red triangle	1	0	0	0
LAG	Green triangle	0	0	0	0

Below the tables is a "Refresh" button. At the bottom of the interface is a 3D rendering of a network device with multiple ports labeled "ETHERNET" and "FIBER".

Apply License key(s): Platform, License, License Configuration

The screenshot shows the Cambium Networks web interface for License Configuration. The left sidebar contains a tree view with categories like Platform, Management, Software, Configuration, License, Security, Faults, Radio, Ethernet, and Sync. The main content area is divided into sections: License Status Parameters, License Configuration Parameters, and Demo License Configuration. The License Key field is circled in red, and a red box with the text "Paste your license key(s) here" points to it. Below the configuration fields is a button labeled "Apply" and a "Refresh" button. At the bottom of the page is an image of a Cambium Networks device.

License Status Parameters

Type	Demo
Validation number	0x0
Date code	NA
Violation runtime counter (hours)	48
Sanction state	No

License Configuration Parameters

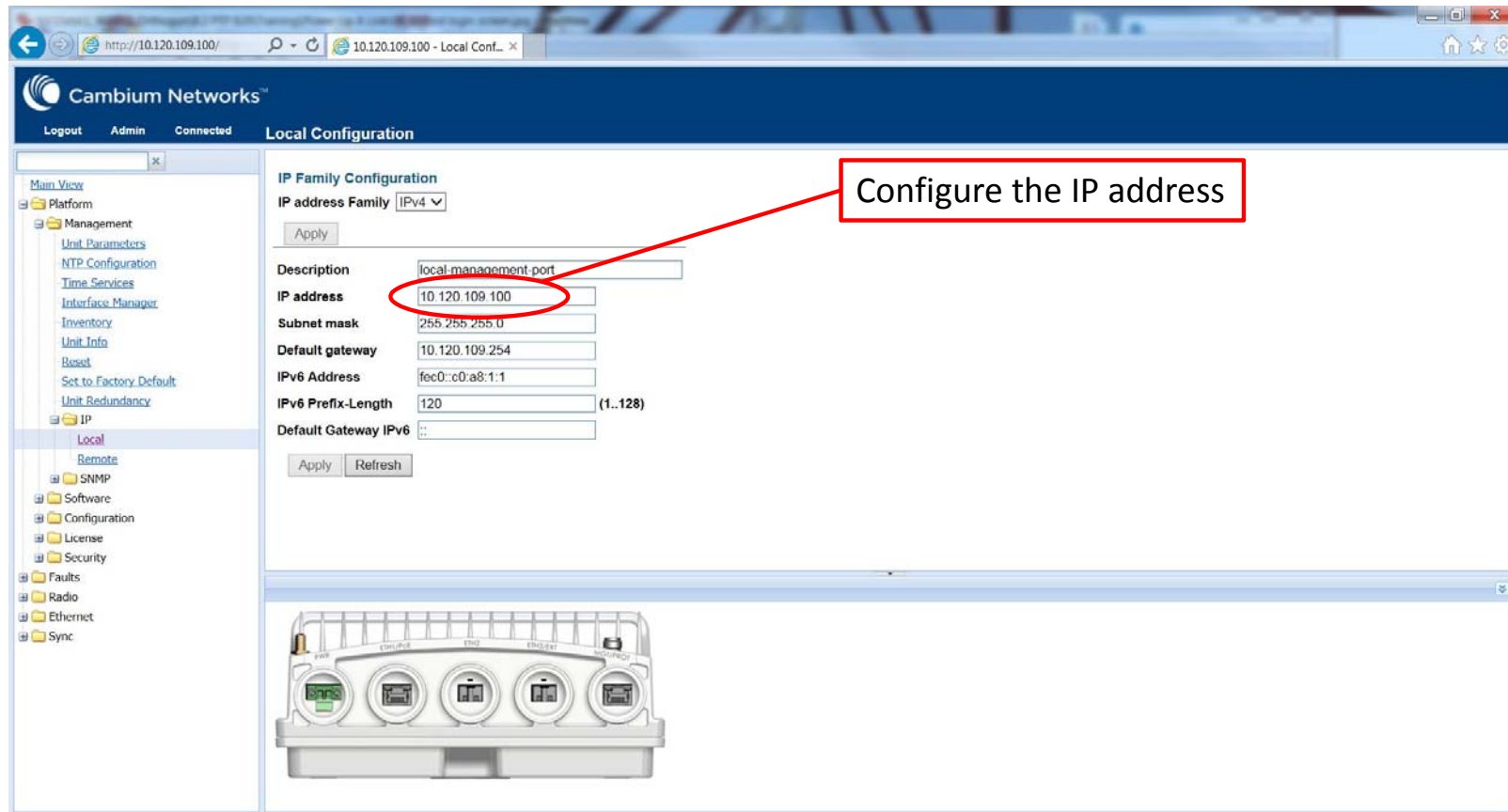
License Key	Default License
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Demo License Configuration

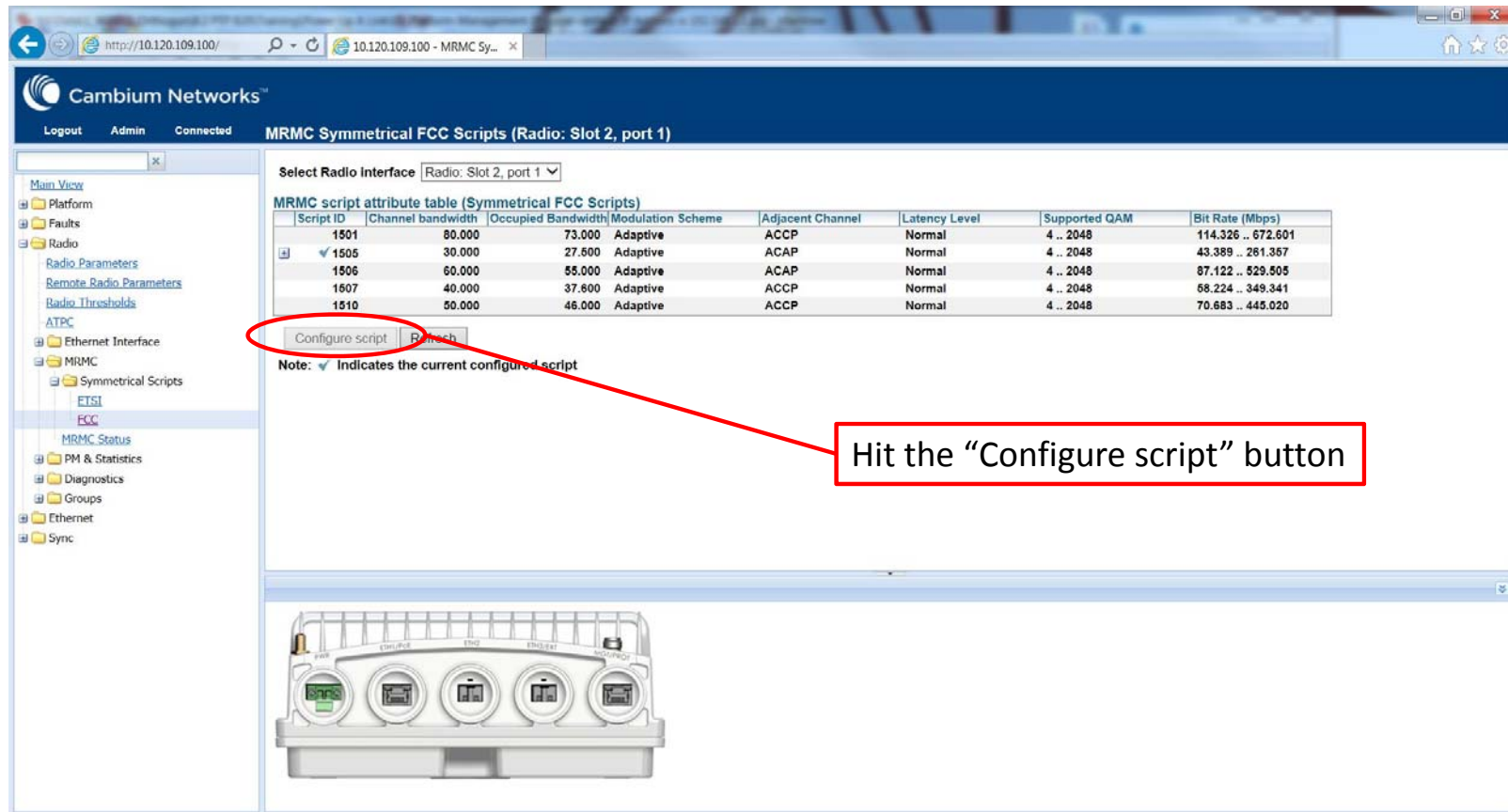
Demo admin	Enable
Demo timer (hours)	1440

Apply Refresh

Configure the IP address: Platform, Management, IP, Local



Configure ACM: Radio,MRMC,Symmetrical Scripts,FCC



http://10.120.109.100/ 10.120.109.100 - MRMC Sy...

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Logout Admin Connected

MRMC Symmetrical FCC Scripts (Radio: Slot 2, port 1)

Select Radio Interface Radio: Slot 2, port 1

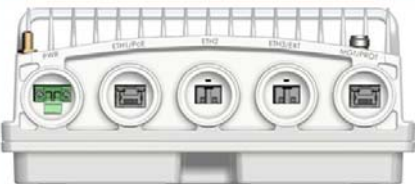
MRMC script attribute table (Symmetrical FCC Scripts)

Script ID	Channel bandwidth	Occupied Bandwidth	Modulation Scheme	Adjacent Channel	Latency Level	Supported QAM	Bit Rate (Mbps)
1501	80.000	73.000	Adaptive	ACCP	Normal	4 .. 2048	114.326 .. 672.601
✓ 1505	30.000	27.600	Adaptive	ACAP	Normal	4 .. 2048	43.389 .. 261.367
1506	60.000	55.000	Adaptive	ACAP	Normal	4 .. 2048	87.122 .. 529.505
1507	40.000	37.600	Adaptive	ACCP	Normal	4 .. 2048	68.224 .. 349.341
1510	50.000	46.000	Adaptive	ACCP	Normal	4 .. 2048	70.683 .. 445.020

Configure script Refresh

Note: ✓ Indicates the current configured script

Hit the "Configure script" button



Configure ACM: Radio,MRMC,Symmetrical Scripts,FCC

MRMC Symmetrical FCC Scripts - Windows Internet Explorer provided by Cambium Networks

http://10.120.109.100/responder.fcgi?winid=617&deviceid=0&winsystemname=mrnc-script-attribute-table&action=18

Configuration of MRMC script 1505 to Slot 2, port 1

Script ID	1505
Channel bandwidth (MHz)	30.000
Occupied Bandwidth (MHz)	27.500
Modulation Scheme	Adaptive
Adjacent Channel	ACAP
Latency Level	Normal
Symmetry	Normal
Standard	ETSI+FCC

Configuration parameters of script for Slot 2, port 1

MRMC Script operational mode	Adaptive
MRMC Script maximum profile	Profile 10, 2048 QAM, 261.357 Mbps
MRMC Script minimum profile	Profile 0, 4 QAM, 43.389 Mbps
Adaptive power admin	Disable
Adaptive power efficiency class	Class-2

Apply Refresh Close

Warning: pressing "Apply" will automatically reset the radio interface and affect traffic.

Configure the channel bandwidth

Enable or disable ACM

Set maximum and minimum modulation modes

Configure ACM: Radio,MRMC,Symmetrical Scripts,FCC

MRMC Symmetrical FCC Scripts - Windows Internet Explorer provided by Cambium Networks

http://10.120.109.100/responder.fcgi?winid=617&deviceid=0&winsystemname=mrmc-script-attribute-table&action=18

Configuration of MRMC script 1505 to Slot 2, port 1

Script ID: 1505

Channel bandwidth (MHz): 30.000

Occupied Bandwidth (MHz): 27.500

Modulation Scheme: Adaptive

Adjacent Channel: ACAP

Latency Level: Normal

Symmetry: Normal

Standard: ETS

Configuration parameters of script 1505

MRMC Script operational mode: Profile 0, 4 QAM, 43.389 Mbps

MRMC Script maximum profile: Profile 10, 2048 QAM, 261.357 Mbps

MRMC Script minimum profile: Profile 0, 4 QAM, 43.389 Mbps

Adaptive power admin: Disable

Adaptive power efficiency class: Class-2

Apply Refresh Close

Warning: pressing "Apply" will automatically reset the radio interface and affect traffic.

Here are the modulation modes that are available

Configure Tx/Rx frequencies and Link ID: Radio, Radio Parameters

The screenshot shows the Cambium Networks web interface for configuring radio parameters. The page title is 'Radio Parameters (Radio: Slot 2, port 1)'. The left sidebar shows a navigation menu with options like 'Main View', 'Platform', 'Faults', 'Radio', 'Radio Parameters', 'Remote Radio Parameters', 'Radio Thresholds', 'ATPC', 'Ethernet Interface', 'MRMC', 'PM & Statistics', 'Diagnostics', 'Groups', 'Ethernet', and 'Sync'. The main content area is divided into two sections: 'Frequency control (Local)' and 'Configuration parameters'.

Frequency control (Local)

TX Frequency (MHz)	19400.000	(19259.000..19710.000)
RX Frequency (MHz)	17800.000	(17699.000..18150.000)
TX to RX frequency separation (MHz)	1600.000	

☐ Set also remote unit

Configuration parameters

TX Level (dBm)	5	(-1..16)
TX mute	On	
RSL Connector Source	PHY1	
Link Id	1	(1..65535)
Remote Unit link ID	1	(1..65535)

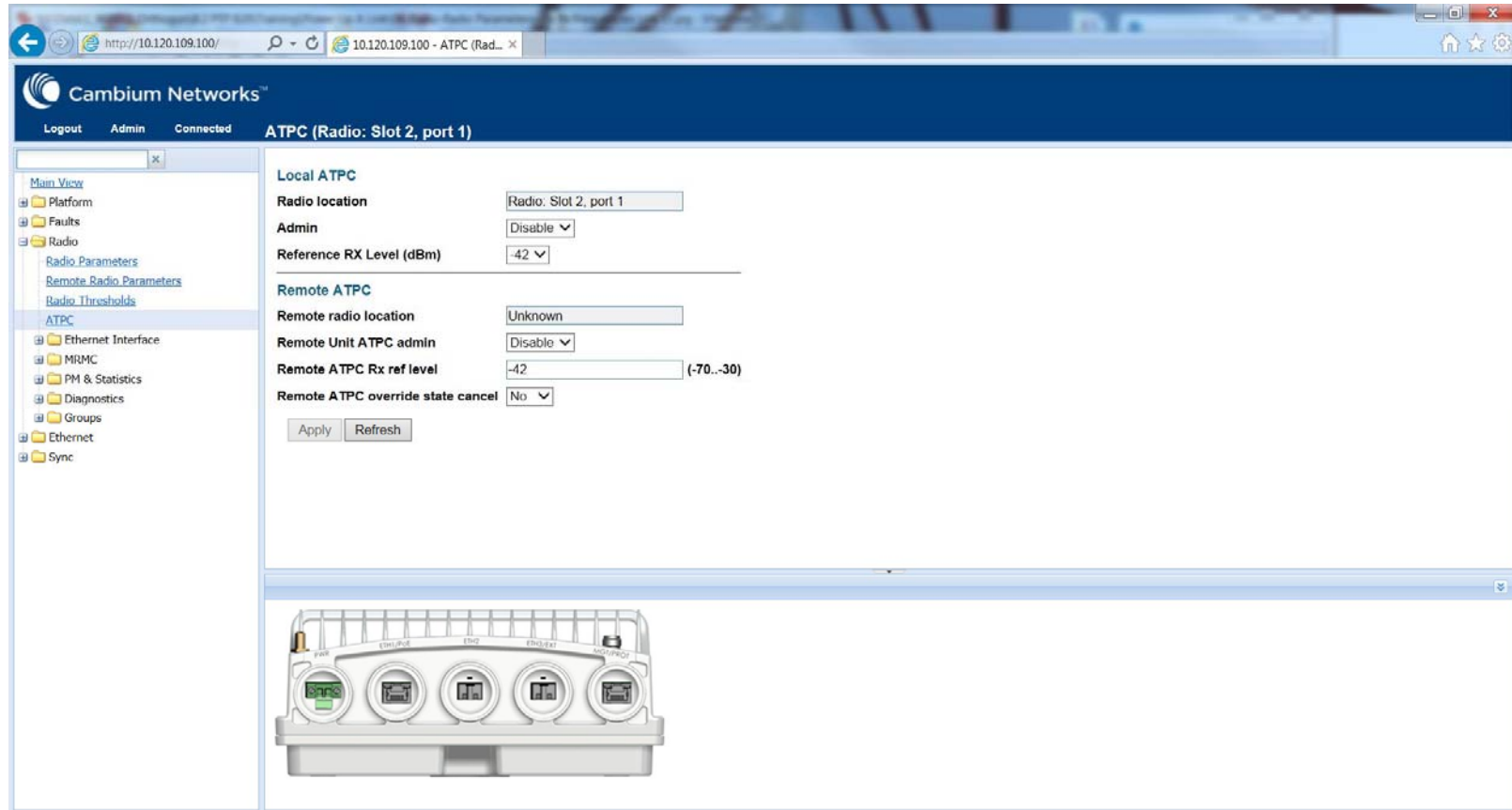
Apply Refresh

Below the configuration fields is a small image of a radio unit with multiple ports labeled 'ETH0/1', 'ETH2/3', 'ETH4/5', and 'ETH6/7'.

Annotations:

- A red circle highlights the TX and RX frequency fields, with a red arrow pointing to a text box that says "Set Tx and Rx Frequencies".
- A red circle highlights the Link Id and Remote Unit link ID fields, with a red arrow pointing to a text box that says "Both ends of the link must have the same Link ID".

Configure ATPC: Radio,ATPC



http://10.120.109.100/ 10.120.109.100 - ATPC (Rad...

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Logout Admin Connected **ATPC (Radio: Slot 2, port 1)**

Main View

- Platform
- Faults
- Radio
 - Radio Parameters
 - Remote Radio Parameters
 - Radio Thresholds
 - ATPC**
- Ethernet Interface
- MRMC
- PM & Statistics
- Diagnostics
- Groups
- Ethernet
- Sync

Local ATPC

Radio location Radio: Slot 2, port 1

Admin Disable ▾

Reference RX Level (dBm) -42 ▾

Remote ATPC

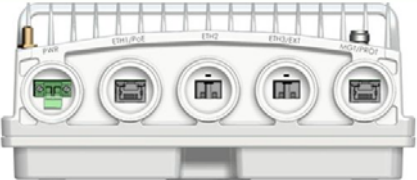
Remote radio location Unknown

Remote Unit ATPC admin Disable ▾

Remote ATPC Rx ref level -42 (-70...-30)

Remote ATPC override state cancel No ▾

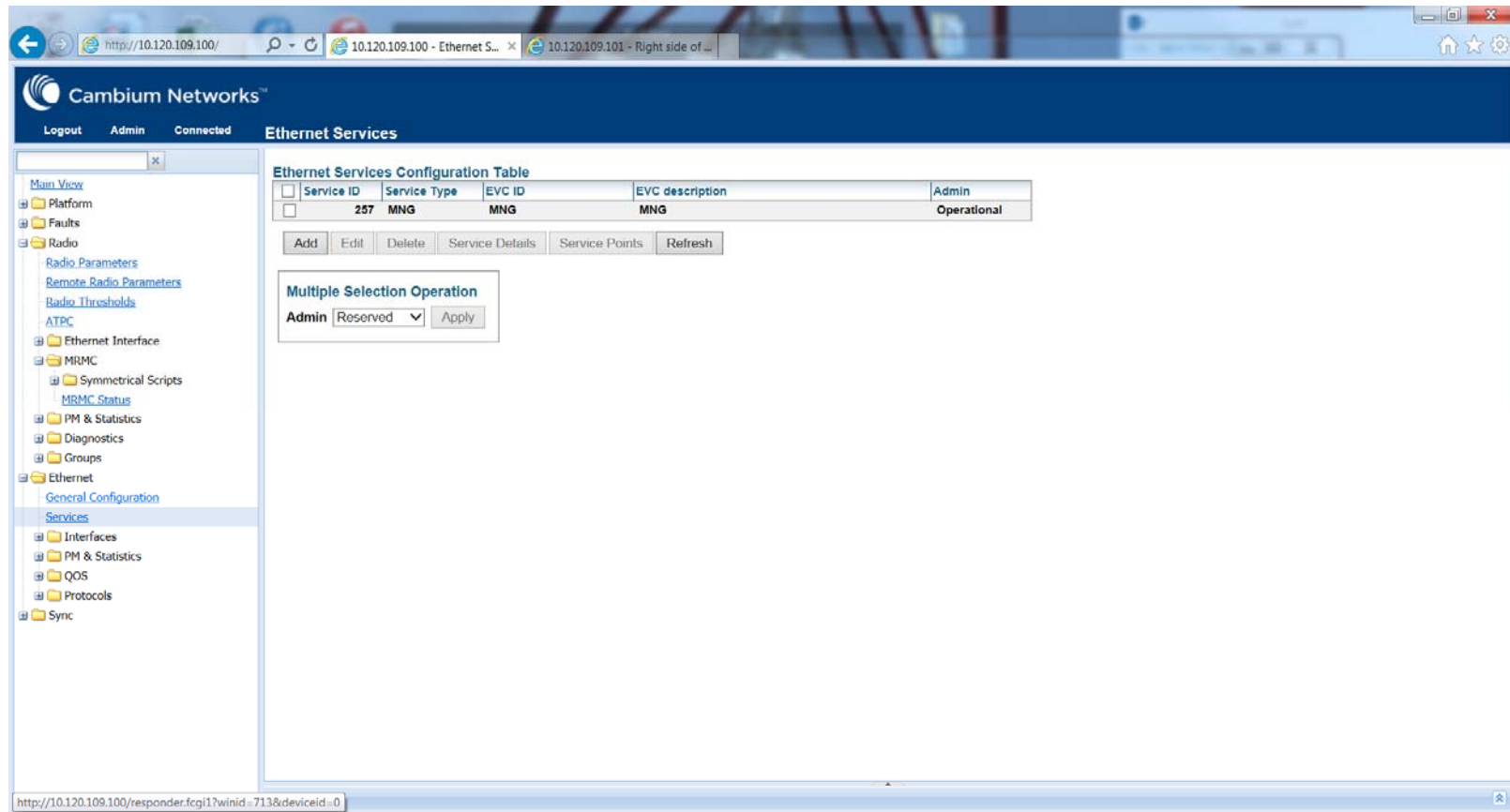
Apply Refresh



Configure Ethernet Service

- Ethernet,Services
- Add in-band management—connect port 3 to the MNG service
 - Select MNG Service
 - Hit Service Points button
 - Hit the “Add” button (add service point to MNG service)
 - Interface location: Ethernet: Slot 1, port 3
 - Apply
- Move Ethernet cable to port 3 and verify that radio can be managed from port 3
- Add Ethernet service to connect port 3 to radio port
- Ethernet,Services
- Hit “Add” button
- Select Service Type “P2P”
- Select P2P Service and hit “Service Points” button
- Hit “Add” button
- Under “Pre defined options” Select “Option #8 (PIPE, dot1q)”
- Under “Interface location” Select “Ethernet: Slot 1, port 3”
- Hit “Add” button
- Under “Interface location” Select “Radio: Slot 2, port1”

Configure Ethernet Services: Ethernet, Services

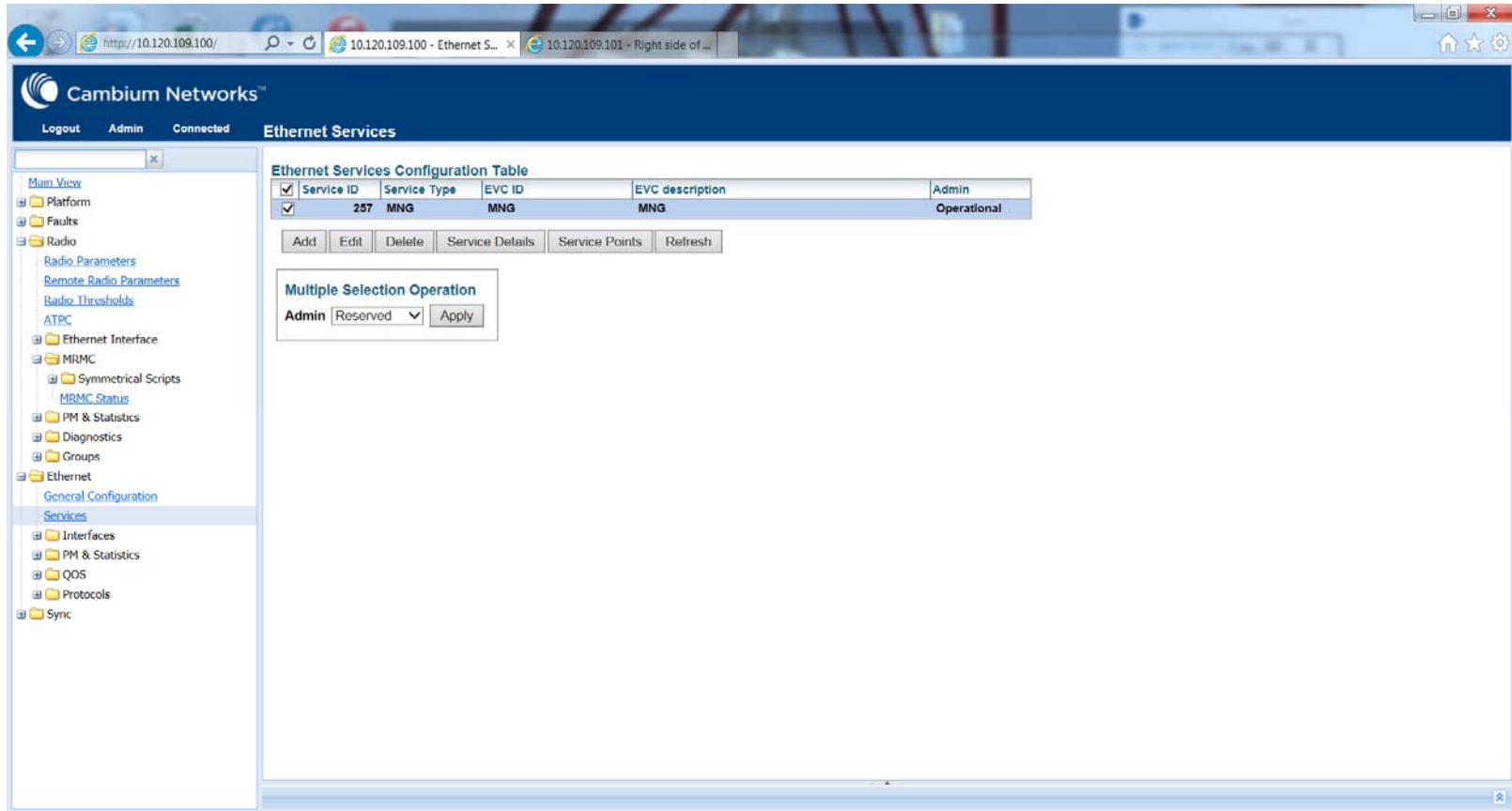


The screenshot shows the Cambium Networks web interface for configuring Ethernet services. The browser address bar displays `http://10.120.109.100/`. The interface includes a navigation sidebar on the left with a tree view containing categories like Platform, Faults, Radio, Ethernet Interface, MRMC, PM & Statistics, Diagnostics, Groups, Ethernet, General Configuration, Services, Interfaces, PM & Statistics, QOS, Protocols, and Sync. The main content area is titled "Ethernet Services" and features an "Ethernet Services Configuration Table".

☐	Service ID	Service Type	EVC ID	EVC description	Admin
☐	257	MNG	MNG	MNG	Operational

Below the table are buttons for "Add", "Edit", "Delete", "Service Details", "Service Points", and "Refresh". A "Multiple Selection Operation" section contains a dropdown menu set to "Reserved" and an "Apply" button. The status bar at the bottom shows the URL `http://10.120.109.100/responder.fcgi?winid=713&deviceid=0`.

Left-click on “MNG” Service and left-click on “Service Points”



The screenshot displays the Cambium Networks web interface for Ethernet Services. The left sidebar shows a navigation tree with 'Services' selected under the 'Ethernet' category. The main content area features the 'Ethernet Services Configuration Table' with the following data:

Service ID	Service Type	EVC ID	EVC description	Admin
257	MNG	MNG	MNG	Operational

Below the table, there are buttons for 'Add', 'Edit', 'Delete', 'Service Details', 'Service Points', and 'Refresh'. A 'Multiple Selection Operation' section shows 'Admin' and 'Reserved' with an 'Apply' button.

Add Service Point for in-band management: left-click “Add”

The screenshot displays the Cambium Networks web interface for configuring Ethernet Service Points. The left sidebar shows a tree view with the following structure:

- Main View
 - Platform
 - Faults
 - Radio
 - Radio Parameters
 - Remote Radio Parameters
 - Radio Thresholds
 - ATPC
 - Ethernet Interface
 - MRMC
 - Symmetrical Scripts
 - MRMC Status
 - PM & Statistics
 - Diagnostics
 - Groups
 - Ethernet
 - General Configuration
 - Services**
 - Interfaces
 - PM & Statistics
 - QOS
 - Protocols
 - Sync

The main content area is titled "Ethernet Service Points (Service ID - 257)". It includes a "Back to Services table" button and a "Select Service Point Attribute" section with three radio buttons: "General" (selected), "Ingress", and "Egress". Below this is a table titled "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
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Below the table are buttons for "Add", "Edit", "Delete", "Attached VLAN", and "Refresh".

Under “Interface location”, select “Ethernet: Slot 1, port 3”

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 (selected)
Ethernet: Slot 1, port 2
Ethernet: Slot 1, port 3
Radio: Slot 2, port 1

Attached interface type: Ethernet ▼

C-Vlan encapsulation: N/A ▼

S-Vlan encapsulation: N/A ▼

Ingress Attributes

Learning admin: Enable ▼

Allow flooding: Allow ▼

Allow broadcast: Allow ▼

CoS Mode: Interface Decision ▼

Default CoS: 0 ▼

Split horizon group: Group-A ▼

Egress Attributes

C-Vlan CoS preservation: Enable ▼

C-Vlan preservation: Disable ▼

S-Vlan CoS preservation: Enable ▼

Marking admin: Enable ▼

Service bundle ID: 1 ▼

Apply Refresh Close

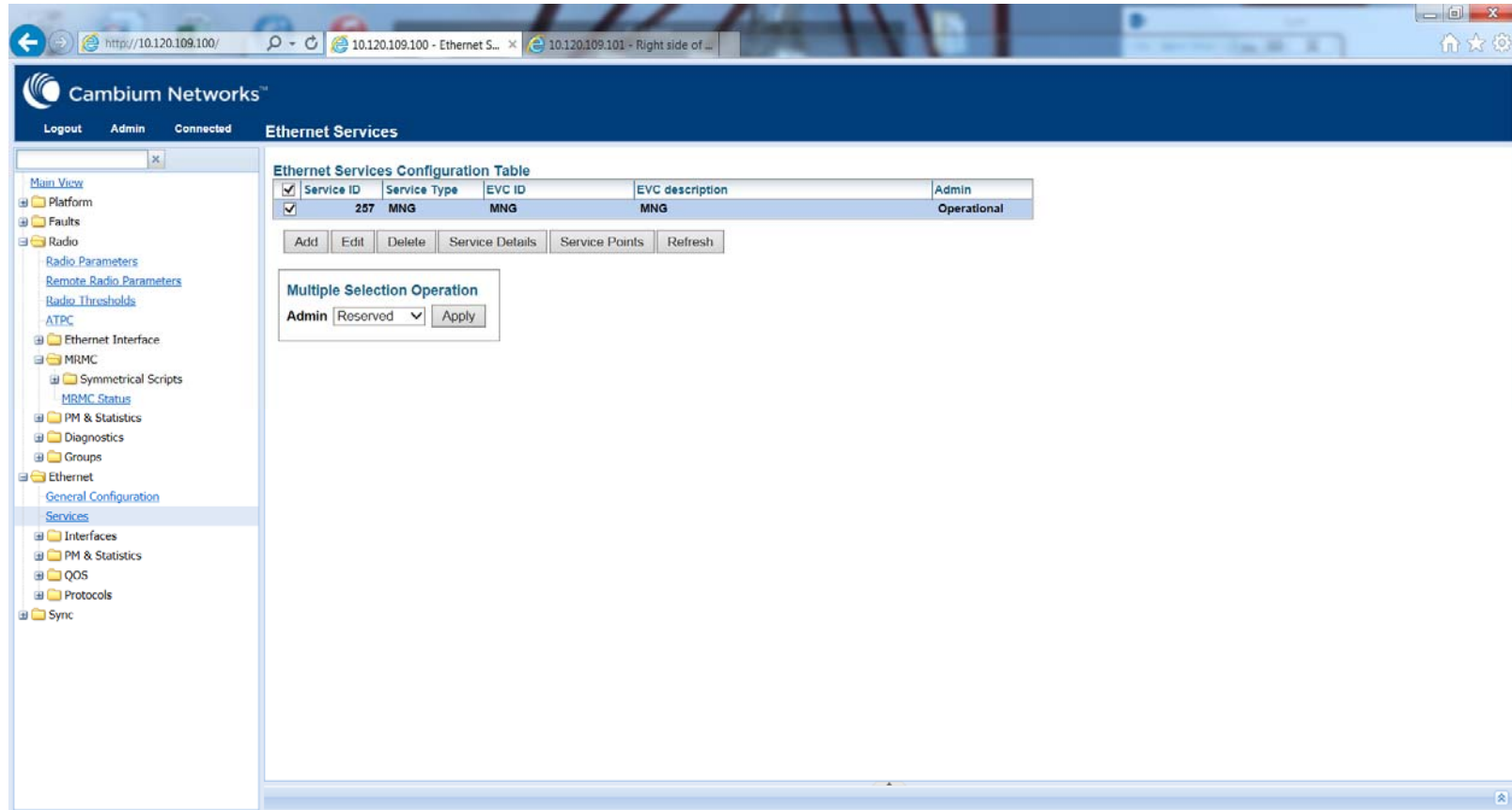
Now you've got in-band management! (left-click on "Back to Services table")

The screenshot shows the Cambium Networks web interface. The browser address bar displays `http://10.120.109.100/`. The page title is "Ethernet Service Points (Service ID - 257)". The left sidebar contains a navigation menu with the following items: Main View, Platform, Faults, Radio, Radio Parameters, Remote Radio Parameters, Radio Thresholds, ATPC, Ethernet Interface, MRMC, Symmetrical Scripts, MRMC Status, PM & Statistics, Diagnostics, Groups, Ethernet, General Configuration, Services, Interfaces, PM & Statistics, QOS, Protocols, and Sync. The main content area has a "Back to Services table" button at the top left. Below it, the "Select Service Point Attribute" section has three radio buttons: "General" (selected), "Ingress", and "Egress". 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	Ethernet: Slot 1, port 3	dot1q	Untagged	N.A.

Below the table are buttons for "Add", "Edit", "Delete", "Attached VLAN", and "Refresh".

Add P2P Service for Ethernet port 3: left-click “Add”



The screenshot displays the Cambium Networks web interface for configuring Ethernet services. The left sidebar shows a navigation tree with 'Ethernet' and 'Services' expanded. The main content area is titled 'Ethernet Services' and contains an 'Ethernet Services Configuration Table'.

Service ID	Service Type	EVC ID	EVC description	Admin
257	MNG	MNG	MNG	Operational

Below the table are buttons for 'Add', 'Edit', 'Delete', 'Service Details', 'Service Points', and 'Refresh'. A 'Multiple Selection Operation' section shows 'Admin' and a dropdown menu set to 'Reserved' with an 'Apply' button.

Under “Service Type”, pull-down and select “P2P” and left-click on “Apply”

Ethernet Services - Windows Internet Explorer provided by Ca...
http://10.120.109.100/responder.fcgi1?winid=713&deviceid=0&winsystemname

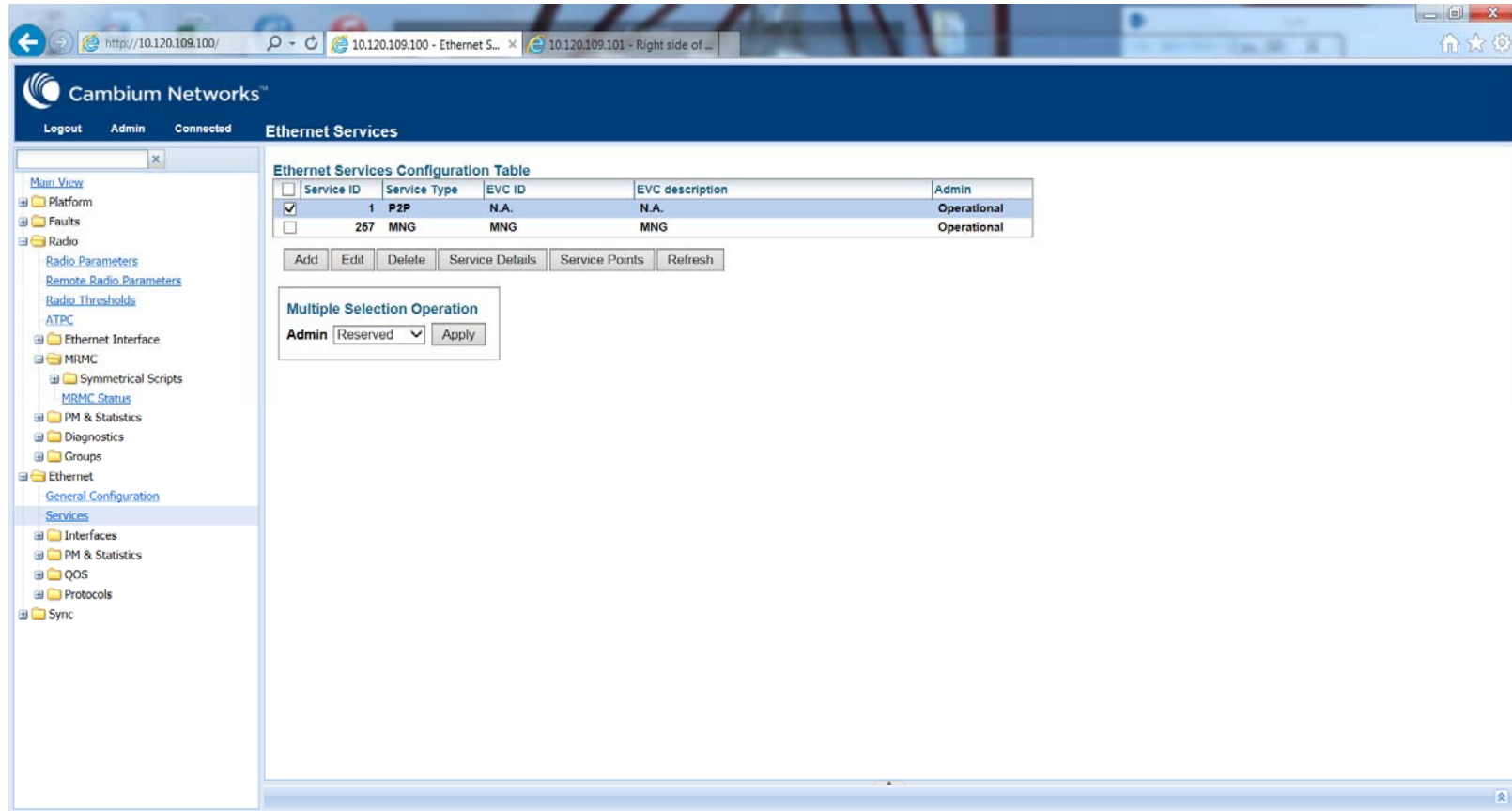
Ethernet Services Configuration Table - Add

Service ID	1
Service Type	MNG MP P2P
EVC ID	N.A.
EVC description	N.A.
Admin	Operational
MAC table size	131072
Default CoS	0
CoS Mode	Preserve-SP-COS-Decision

Apply Refresh Close

125%

Add PIPE Service Points to P2P Service: with “P2P” selected, left-click on “Service Points”



The screenshot shows the Cambium Networks web interface for Ethernet Services. The left sidebar contains a tree view with categories like Platform, Faults, Radio, Ethernet Interface, MRMC, PM & Statistics, Diagnostics, Groups, Ethernet, General Configuration, Services, Interfaces, PM & Statistics, QOS, Protocols, and Sync. The main content area is titled "Ethernet Services" and displays the "Ethernet Services Configuration Table".

Service ID	Service Type	EVC ID	EVC description	Admin	
☒	1	P2P	N.A.	N.A.	Operational
☐	257	MNG	MNG	MNG	Operational

Below the table are buttons for "Add", "Edit", "Delete", "Service Details", "Service Points", and "Refresh". A "Multiple Selection Operation" section shows "Admin" selected in a dropdown menu with a "Reserved" option and an "Apply" button.

Add two Service Points: one for the Ethernet port 3, and one for the radio port: left-click on “Add”

The screenshot shows the Cambium Networks web interface. The browser address bar displays `http://10.120.109.100/`. The page title is "Ethernet Service Points (Service ID - 1)". The left sidebar contains a navigation menu with the following items: Main View, Platform, Faults, Radio, Radio Parameters, Remote Radio Parameters, Radio Thresholds, ATPC, Ethernet Interface, MRMC, Symmetrical Scripts, MRMC Status, PM & Statistics, Diagnostics, Groups, Ethernet, General Configuration, Services, Interfaces, PM & Statistics, QOS, Protocols, and Sync. The main content area has a "Back to Services table" link. Below it, the "Select Service Point Attribute" section has three radio buttons: "General" (selected), "Ingress", and "Egress". The "Ethernet Service Points - General SP Attributes" section contains a table with the following columns: Service point ID, Service point name, Service point type, Interface location, Attached interface type, C-Vlan encapsulation, and S-Vlan encapsulation. Below the table are buttons for "Add", "Edit", "Delete", "Attached VLAN", and "Refresh".

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
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Add Edit Delete Attached VLAN Refresh

Under “Pre defined options”, pull-down and select “Option #8 (PIPE, dot1q)”

Ethernet Service Points - Windows Internet Explorer provided by Cambium Networ...

http://10.120.109.100/responder.fcgi?wind=714&deviceid=0&winsystemname=sw-ap-l4-srv-sp-co

Ethernet Service Points - Add (Point to Point Service)

Pre defined options

Option #1 (SAP, dot1q)
Option #2 (SAP, Bundle-S)
Option #3 (SAP, Bundle-C)
Option #4 (SAP, Q-in-Q)
Option #5 (SAP, All-2-One)
Option #6 (SNP, dot1q)
Option #7 (SNP, s-lag)
Option #8 (PIPE, dot1q)
Option #9 (PIPE, s-lag)

Service ID

Service point ID

Service point name

Service point type

General SP Attributes

Interface location Ethernet Slot 1, port 2

Attached interface type dot1q

C-Vlan encapsulation Untagged

S-Vlan encapsulation N/A

Ingress Attributes

Learning admin Disable

Allow flooding Allow

Allow broadcast Allow

CoS Mode Interface Decision

Default CoS 0

Split horizon group Group-A

Egress Attributes

C-Vlan CoS preservation Enable

C-Vlan preservation Disable

S-Vlan CoS preservation Enable

Marking admin Enable

Service bundle ID 1

Apply Refresh Close

125%

Under “Interface location”, pull-down and select “Ethernet: Slot1, port 3”, and left-click on “Apply”

Ethernet Service Points - Add (Point to Point Service)

Pre defined options: Option #8 (PIPE, dot1q)

Service ID: 1

Service point ID: 1

Service point name: N/A

Service point type: PIPE

General SP Attributes

Interface location: Ethernet: Slot 1, port 3

Attached interface type: dot1q

C-Vlan encapsulation: N/A

S-Vlan encapsulation: N/A

Ingress Attributes

Learning admin: Disable

Allow flooding: Allow

Allow broadcast: Allow

CoS Mode: Interface Decision

Default CoS: 0

Split horizon group: Group-A

Egress Attributes

C-Vlan CoS preservation: Enable

C-Vlan preservation: Enable

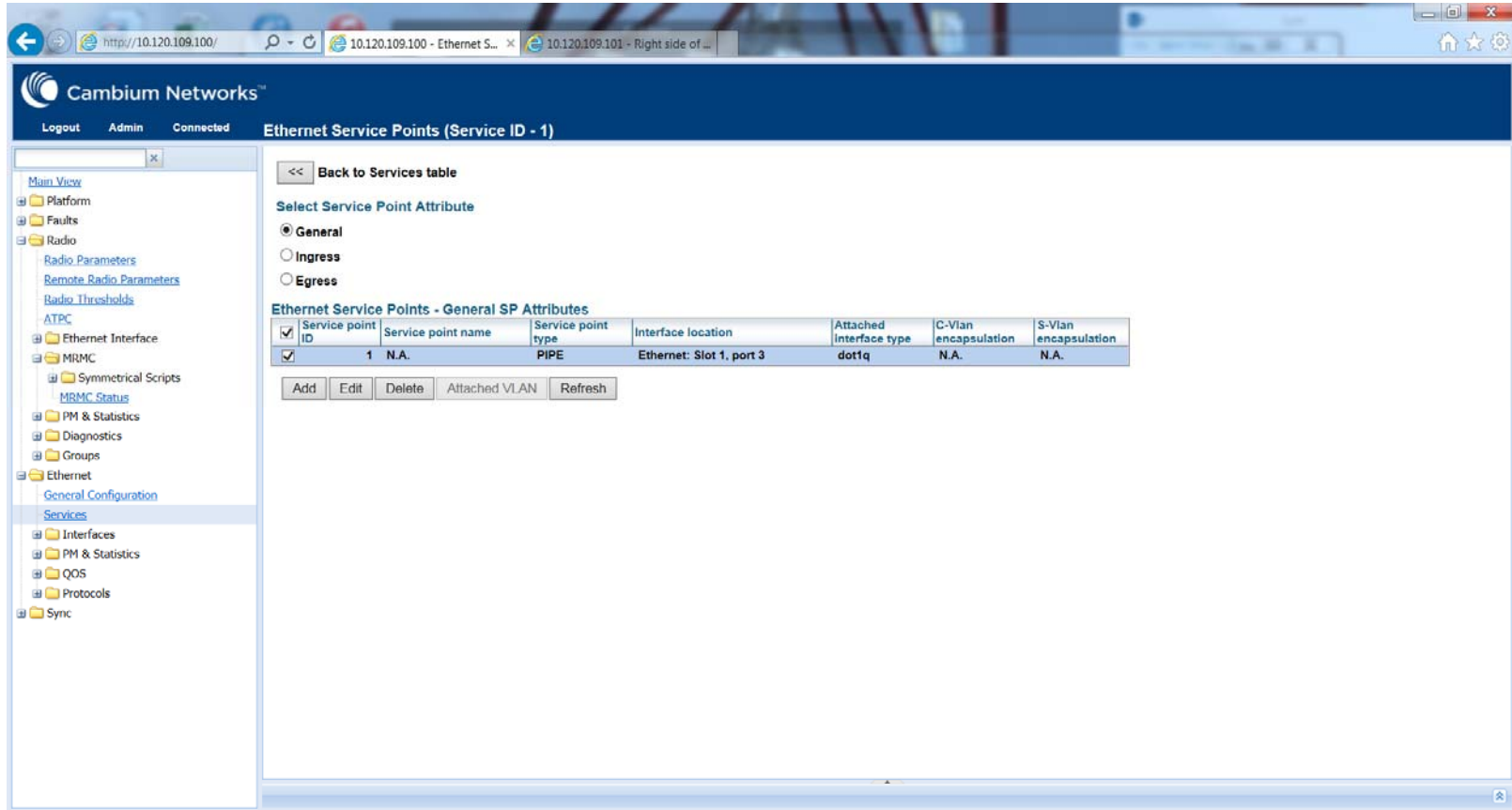
S-Vlan CoS preservation: Disable

Marking admin: Enable

Service bundle ID: 1

Apply Refresh Close

Left-click on “Add” to add radio Service Point



The screenshot displays the Cambium Networks web interface for configuring Ethernet Service Points. The left sidebar shows a navigation tree with categories like Platform, Faults, Radio, Ethernet Interface, and Ethernet. The main content area is titled "Ethernet Service Points (Service ID - 1)". It includes a "Back to Services table" link, a "Select Service Point Attribute" section with radio buttons for General, Ingress, and Egress, and a table of "Ethernet Service Points - General SP Attributes". The table has columns for Service point ID, Service point name, Service point type, Interface location, Attached interface type, C-Vlan encapsulation, and S-Vlan encapsulation. A single entry is shown with ID 1, name N.A., type PIPE, location Ethernet: Slot 1, port 3, and interface type dot1q. Below the table are buttons for Add, Edit, Delete, Attached VLAN, and Refresh.

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.	PIPE	Ethernet: Slot 1, port 3	dot1q	N.A.	N.A.

Add Edit Delete Attached VLAN Refresh

Under “Interface location”, pull-down and select “Radio: Slot 2, port1”, and left-click on “Apply”

Ethernet Service Points - Add (Point to Point Service)

Pre defined options: Option #8 (PIPE, dot1q)

Service ID: 1

Service point ID: 2

Service point name: N.A.

Service point type: PIPE

General SP Attributes

Interface location: Radio: Slot 2, port 1

Attached interface type: dot1q

C-Vlan encapsulation: N.A.

S-Vlan encapsulation: N.A.

Ingress Attributes

Learning admin: Disable

Allow flooding: Allow

Allow broadcast: Allow

CoS Mode: Interface Decision

Default CoS: 0

Split horizon group: Group-A

Egress Attributes

C-Vlan CoS preservation: Enable

C-Vlan preservation: Enable

S-Vlan CoS preservation: Disable

Marking admin: Enable

Service bundle ID: 1

Apply Refresh Close

Notice that under “Pre defined options” “Option #8 (PIPE, dot1q)” has already been selected!

Now you have a P2P PIPE Service connecting the Ethernet port 3 to the radio port!

The screenshot displays the Cambium Networks web interface for configuring Ethernet Service Points. The left sidebar shows a navigation tree with categories like Platform, Faults, Radio, Ethernet Interface, MRMC, Symmetrical Scripts, PM & Statistics, Diagnostics, Groups, Ethernet, General Configuration, Services, Interfaces, PM & Statistics, QOS, Protocols, and Sync. The main content area is titled 'Ethernet Service Points (Service ID - 1)' and includes a 'Back to Services table' link. Below this, there are radio buttons for 'General', 'Ingress', and 'Egress', with 'General' selected. A table titled 'Ethernet Service Points - General SP Attributes' lists two service points. The first row (ID 1) is for a PIPE service at Ethernet Slot 1, port 3. The second row (ID 2) is for a PIPE service at Radio Slot 2, port 1, and it is selected with a checkmark. Below the table are buttons for 'Add', 'Edit', 'Delete', 'Attached VLAN', and 'Refresh'.

Service point ID	Service point name	Service point type	Interface location	Attached interface type	C-Vlan encapsulation	S-Vlan encapsulation
☐	1	N.A.	PIPE	Ethernet: Slot 1, port 3	dot1q	N.A.
☒	2	N.A.	PIPE	Radio: Slot 2, port 1	dot1q	N.A.

Repeat steps on opposite end of the link

- Repeat steps on the opposite end of the link
 - Remember to reverse the Tx and Rx frequencies
- Under “Radio, Radio Parameters”
 - “Radio Interface operational status” will display “Up”
- Ping across link to verify Ethernet connectivity
- Configure and connect Ethernet analyzers to test link