



# DEPI/UEPI/L2TP integration with Cisco Remote PHY Device

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This document describes how to configure the DEPI/UEPI/L2TP integration with RPD on the Cisco cBR Series Converged Broadband Router.

## Finding Feature Information

Your software release may not support all the features that are documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. The Feature Information Table at the end of this document provides information about the documented features and lists the releases in which each feature is supported.

Use Cisco Feature Navigator to find information about the platform support and Cisco software image support. To access Cisco Feature Navigator, go to the link <http://tools.cisco.com/ITDIT/CFN/>. You do not require a cisco.com login account.

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## Hardware Compatibility Matrix for Cisco Remote PHY Device



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**Note** Unless otherwise specified, the hardware components introduced in a given Cisco Remote PHY Device Software Release are supported in all subsequent releases.

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Table 1: Hardware Compatibility Matrix for the Cisco Remote PHY Device

Cisco HFC Platform	Remote PHY Device
Cisco GS7000 Super High Output Node	<b>and Later Releases</b> Cisco Remote PHY Device 1x2 <ul style="list-style-type: none"> <li>• PID—RPD-1X2=</li> </ul> <b>and Later Releases</b> Cisco Remote PHY Device 1x2 <ul style="list-style-type: none"> <li>• PID—RPD-1X2-PKEY=</li> </ul>
Cisco GS7000 Super High Output Intelligent Node (iNode)	<b>and Later Releases</b> Cisco Intelligent Remote PHY Device 1x2 <ul style="list-style-type: none"> <li>• PID—iRPD-1X2=</li> <li>• PID—iRPD-1X2-PKEY=</li> </ul>



**Note** The -PKEY suffix in the PID indicates units that enable the SCTE-55-2 Out-of-Band protocol support.

## Information about DEPI/UEPI/L2TP integration with RPD

### DEPI

Downstream External PHY Interface (DEPI) is the downstream interface between the CCAP Core and the RPD. R-DEPI is based on DEPI. More specifically, it is an IP pseudowire between the MAC and PHY in an MHA v2 system that contains both a data path for DOCSIS frames, video packets, and OOB packets, as well as a control path for setting up, maintaining, and tearing down sessions.

### UEPI

Upstream External PHY Interface (UEPI) is the upstream interface between the RPD and the CCAP Core. Like DEPI, it is an IP pseudowire between the PHY and MAC in an MHA v2 system that contains both a data path for DOCSIS frames, and a control path for setting up, maintaining, and tearing down sessions.

## How to Configure DEPI/UEPI/L2TP integration with RPD

This section describes how to configure DEPI/UEPI/L2TP integration with RPD.

## Configuring depi-class/l2tp-class Pair

It's not permitted to change the default l2tp-class configuration (rphy-l2tp-global-class) for R-DEPI by user, because the parameter values are fine tuned to accommodate most common cases.

If user wants to use parameter values other than the default ones, they can use manually defined depi-class/l2tp-class pair. To do so, follow the example below:

```
Router# configure terminal
Router(config)# l2tp-class l2tp_demo
Router(config-l2tp-class)#exit
Router(config)# depi-class depi_demo
Router(config-depi-class)#l2tp-class l2tp_demo
Router(config-depi-class)#exit
Router(config)#cable rpd node
Router(config-rpd)#core-interface Tel/1/7
Router(config-rpd-core)#depi depi_demo /* Be sure to configure when the RPD core is offline*/
Router(config-rpd-core)#end
```

## Verifying the RPD Status

To verify the RPD status, use the **show cable rpd** command as shown in the example below:

```
Router# show cable rpd
Load for five secs: 6%/1%; one minute: 5%; five minutes: 5%
No time source, *04:52:03.936 UTC Tue Jan 17 2017

MAC Address      IP Address      I/F      State      Role  HA  Name
0004.9f00.0901  91.0.10.10     Tel/1/0  init (l2tp)  Pri  Act  node
```

## Displaying DEPI Ralated Information

To display the Downstream External PHY Interface (DEPI) related information, use the command as shown in the following example:

```
Router#show cable rpd depi

DEPI Tunnel and Session Information Total tunnels 1 sessions 26
LocTunID  RemTunID  Remote Device  State  Remote Address  Sessn L2TP Class
Count
338514820  671581873  0004.9f00.0901  est    10.10.10.11    26    rphy-l2tp-gl...

LocID      RemID      Pseudowire      State  Last Chg Uniq ID  Type Mode RemSt
0x41040008 0x00000B02  US1/0/0:2(R)    est    00:34:57 21    P    PSP  UP
0x41010000 0x00000600  US1/0/0:0(D)    est    00:34:57 11    P    PSP  UP
0x00002006 0x00000405  DS1/0/0:5       est    00:34:57 6     P    PSP  UP
0x00002004 0x00000403  DS1/0/0:3       est    00:34:57 4     P    PSP  UP
0x4100000C 0x00000D03  US1/0/0:3(M)    est    00:34:57 23    P    PSP  UP
0x00002002 0x00000401  DS1/0/0:1       est    00:34:57 2     P    PSP  UP
0x00002007 0x00000406  DS1/0/0:6       est    00:34:57 7     P    PSP  UP
0x00002008 0x00000407  DS1/0/0:7       est    00:34:57 8     P    PSP  UP
0x4101000C 0x00000603  US1/0/0:3(D)    est    00:34:57 24    P    PSP  UP
0x41000004 0x00000D01  US1/0/0:1(M)    est    00:34:57 15    P    PSP  UP
0x00002001 0x00000400  DS1/0/0:0       est    00:34:57 1     P    PSP  UP
0x41080008 0x00000F02  US1/0/0:2(S)    est    00:34:57 22    P    PSP  UP
0x41010004 0x00000601  US1/0/0:1(D)    est    00:34:57 16    P    PSP  UP
0x41020000 0x00000800  US1/0/0:0(B)    est    00:34:57 12    P    PSP  UP
0x00002009 0x00000408  DS1/0/0:8       est    00:34:57 9     P    PSP  UP
0x41010008 0x00000602  US1/0/0:2(D)    est    00:34:57 20    P    PSP  UP
0x41000008 0x00000D02  US1/0/0:2(M)    est    00:34:57 19    P    PSP  UP
```

```

0x4108000C 0x00000F03 US1/0/0:3(S)   est    00:34:57 26      P    PSP  UP
0x00002003 0x00000402 DS1/0/0:2   est    00:34:57 3       P    PSP  UP
0x41080000 0x00000F00 US1/0/0:0(S)   est    00:34:57 14      P    PSP  UP
0x41040004 0x00000B01 US1/0/0:1(R)   est    00:34:57 17      P    PSP  UP
0x41080004 0x00000F01 US1/0/0:1(S)   est    00:34:57 18      P    PSP  UP
0x41000000 0x00000D00 US1/0/0:0(M)   est    00:34:56 10      P    PSP  UP
0x00002005 0x00000404 DS1/0/0:4     est    00:34:56 5       P    PSP  UP
0x4104000C 0x00000B03 US1/0/0:3(R)   est    00:34:56 25      P    PSP  UP
0x41040000 0x00000B00 US1/0/0:0(R)   est    00:34:56 13      P    PSP  UP

```

```
outer#show cable rpd 0004.9f03.0214 te7/1/0 depi tunnel
```

```
Load for five secs: 7%/2%; one minute: 6%; five minutes: 6%
No time source, *12:41:44.228 CST Mon Mar 20 2017
```

```

LocTunID   RemTunID   Remote Device   State   Remote Address   Sessn L2TP Class
Count
3388764998 1054297851 0004.9f03.0214 est     10.10.10.11     29    rphy-l2tp-gl...

```

**Table 2: show cable rpd depi Field Descriptions**

Field	Description
LocID	Local session ID.
RemID	Remote session ID.
US1/0/0:2(R)	US means UEPI session, DS means DEPI session. This string means UEPI session on line card slot 1, controller 0, rf-channel 2.
est in State	Established state.
P in Type	On primary line card.

## Feature Information for DEPI/UEPI/L2TP integration with RPD

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to [www.cisco.com/go/cfn](http://www.cisco.com/go/cfn). An account on Cisco.com is not required.

**Table 3: Feature Information for DEPI/UEPI/L2TP integration with RPD**

Feature Name	Releases	Feature Information
DEPI/UEPI/L2TP integration with RPD	Cisco 1x2 RPD Software 1.1	This feature was introduced on the Cisco cBR Series Converged Broadband Routers.