



Configuring the Cisco 2x2 Remote-PHY Solution

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Prerequisites for Configuring the Cisco 2x2 Remote-PHY Solution

- The Cisco CMTS must have at least one DOCSIS Timing, Communication, and Control (DTCC) card configured in the DOCSIS Timing Interface (DTI) mode for the Cisco cBR RF line card to work with the Cisco GS7000 node.

Restrictions for Configuring the Cisco 2x2 Remote-PHY Solution

- Adding or removing the upstream or downstream channels in the channel group may trigger the Cisco GS7000 to reset.
- The Cisco cBR RF line card supports only static DEPI configuration.
- The Cisco cBR RF line card does not support Spectrum Management, Inter Line Card RF Spanning, and High Availability.

How to Configure the Cisco 2x2 Remote-PHY Solution

For detailed instructions, see the Cisco 2x2 Remote-PHY Configuration Guide.

Configuration Example for the Cisco 2x2 Remote-PHY Solution

Cisco 2x2 Remote-PHY RPD CM Online with Broadcast Video Basic Configuration Example

```

interface TenGigabitEthernet7/1/4
 ip address 112.97.0.1 255.255.255.0
 ip helper-address 112.97.0.2

cable depi multicast pool 1
 ip address 225.28.0.0 255.255.0.0

cable downstream controller-profile 108
 description 64 SC-QAM
 max-ofdm-spectrum 192000000
 rf-chan 64 127
  type DOCSIS
  qam-profile 1
  frequency 495000000
  rf-output NORMAL
 docsis-channel-id 1
 rf-chan 158
 docsis-channel-id 159
 ofdm channel-profile 4 start-frequency 890000000 width 192000000 plc 902000000

cable downstream controller-profile 117
 description 64 SC-QAM for video
 multicast-pool 1
 broadcast
 rf-chan 0 63
  type VIDEO ASYNC
  qam-profile 5
  frequency 111000000
  rf-output NORMAL

cable modulation-profile 244 atdma request 0 16 0 22 qpsk scrambler 152 no-diff 32 fixed
 qpsk0 1 2048
cable modulation-profile 244 atdma initial 5 34 0 48 qpsk scrambler 152 no-diff 128 fixed
 qpsk0 1 2048
cable modulation-profile 244 atdma station 5 34 0 48 qpsk scrambler 152 no-diff 128 fixed
 qpsk0 1 2048
cable modulation-profile 244 atdma a-short 6 76 6 22 64qam scrambler 152 no-diff 256 shortened
 qpsk1 1 2048
cable modulation-profile 244 atdma a-long 9 232 0 22 64qam scrambler 152 no-diff 256 shortened
 qpsk1 1 2048
cable modulation-profile 244 atdma a-ugs 9 232 0 22 64qam scrambler 152 no-diff 256 shortened
 qpsk1 1 2048

cable upstream controller-profile 106
 us-channel 0 channel-width 6400000 6400000
 us-channel 0 docsis-mode atdma
 us-channel 0 frequency 9000000
 us-channel 0 minislots-size 1
 us-channel 0 modulation-profile 244
 us-channel 0 power-level 8
 no us-channel 0 shutdown
 us-channel 1 channel-width 6400000 6400000
 us-channel 1 docsis-mode atdma
 us-channel 1 frequency 15400000
 us-channel 1 minislots-size 1
 us-channel 1 modulation-profile 244
 us-channel 1 power-level 8
 no us-channel 1 shutdown
 us-channel 2 channel-width 6400000 6400000
 us-channel 2 docsis-mode atdma
 us-channel 2 frequency 21800000
 us-channel 2 minislots-size 1

```

```
us-channel 2 modulation-profile 244
us-channel 2 power-level 8
no us-channel 2 shutdown
us-channel 3 channel-width 6400000 6400000
us-channel 3 docsis-mode atdma
us-channel 3 frequency 28200000
us-channel 3 minislots-size 1
us-channel 3 modulation-profile 244
us-channel 3 power-level 8
no us-channel 3 shutdown
us-channel 4 channel-width 1600000 1600000
us-channel 4 docsis-mode atdma
us-channel 4 minislots-size 4
us-channel 4 modulation-profile 221
us-channel 4 shutdown
us-channel 5 channel-width 1600000 1600000
us-channel 5 docsis-mode atdma
us-channel 5 minislots-size 4
us-channel 5 modulation-profile 221
us-channel 5 shutdown

interface Cable7/0/8
load-interval 30
downstream Downstream-Cable 7/0/16 rf-channel 64
downstream Downstream-Cable 7/0/16 rf-channel 72
downstream Downstream-Cable 7/0/16 rf-channel 80
downstream Downstream-Cable 7/0/16 rf-channel 88
downstream Downstream-Cable 7/0/16 rf-channel 96
downstream Downstream-Cable 7/0/16 rf-channel 104
downstream Downstream-Cable 7/0/16 rf-channel 112
downstream Downstream-Cable 7/0/16 rf-channel 120
upstream 0 Upstream-Cable 7/0/60 us-channel 0
upstream 1 Upstream-Cable 7/0/60 us-channel 1
upstream 2 Upstream-Cable 7/0/60 us-channel 2
upstream 3 Upstream-Cable 7/0/60 us-channel 3
cable upstream 0 data-backoff 0 0
cable upstream 1 data-backoff 0 0
cable upstream 2 data-backoff 0 0
cable upstream 3 data-backoff 0 0
cable upstream bonding-group 1
upstream 0
upstream 1
upstream 2
upstream 3
attributes 80000001
cable bundle 3

interface Wideband-Cable7/0/16:8
cable bundle 3
cable rf-channels channel-list 64-71 158 bandwidth-percent 10

interface Wideband-Cable7/0/16:9
cable bundle 3
cable rf-channels channel-list 72-79 158 bandwidth-percent 10

interface Wideband-Cable7/0/16:10
cable bundle 3
cable rf-channels channel-list 80-87 158 bandwidth-percent 10

interface Wideband-Cable7/0/16:11
cable bundle 3
```

```

cable rf-channels channel-list 88-95 158 bandwidth-percent 10

interface Wideband-Cable7/0/16:12
cable bundle 3
cable rf-channels channel-list 96-103 bandwidth-percent 10

interface Wideband-Cable7/0/16:13
cable bundle 3
cable rf-channels channel-list 104-111 bandwidth-percent 10

interface Wideband-Cable7/0/16:14
cable bundle 3
cable rf-channels channel-list 112-119 bandwidth-percent 10

interface Wideband-Cable7/0/16:15
cable bundle 3
cable rf-channels channel-list 120-127 bandwidth-percent 10

interface Cable7/0/10
load-interval 30
downstream Downstream-Cable 7/0/18 rf-channel 64
downstream Downstream-Cable 7/0/18 rf-channel 72
downstream Downstream-Cable 7/0/18 rf-channel 80
downstream Downstream-Cable 7/0/18 rf-channel 88
downstream Downstream-Cable 7/0/18 rf-channel 96
downstream Downstream-Cable 7/0/18 rf-channel 104
downstream Downstream-Cable 7/0/18 rf-channel 112
downstream Downstream-Cable 7/0/18 rf-channel 120
upstream 0 Upstream-Cable 7/0/61 us-channel 0
upstream 1 Upstream-Cable 7/0/61 us-channel 1
upstream 2 Upstream-Cable 7/0/61 us-channel 2
upstream 3 Upstream-Cable 7/0/61 us-channel 3
cable upstream 0 data-backoff 0 0
cable upstream 1 data-backoff 0 0
cable upstream bonding-group 1
  upstream 0
  upstream 1
  upstream 2
  upstream 3
  attributes 80000001
cable bundle 3

interface Wideband-Cable7/0/18:8
cable bundle 3
cable rf-channels channel-list 64-71 158 bandwidth-percent 10

interface Wideband-Cable7/0/18:9
cable bundle 3
cable rf-channels channel-list 72-79 158 bandwidth-percent 10

interface Wideband-Cable7/0/18:10
cable bundle 3
cable rf-channels channel-list 80-87 158 bandwidth-percent 10

interface Wideband-Cable7/0/18:11
cable bundle 3
cable rf-channels channel-list 88-95 158 bandwidth-percent 10

interface Wideband-Cable7/0/18:12
cable bundle 3
cable rf-channels channel-list 96-103 bandwidth-percent 10

```

```
interface Wideband-Cable7/0/18:13
  cable bundle 3
  cable rf-channels channel-list 104-111 bandwidth-percent 10

interface Wideband-Cable7/0/18:14
  cable bundle 3
  cable rf-channels channel-list 112-119 bandwidth-percent 10

interface Wideband-Cable7/0/18:15
  cable bundle 3
  cable rf-channels channel-list 120-127 bandwidth-percent 10

interface Cable7/0/11
  load-interval 30
  downstream Downstream-Cable 7/0/19 rf-channel 0
  downstream Downstream-Cable 7/0/19 rf-channel 8
  downstream Downstream-Cable 7/0/19 rf-channel 16
  downstream Downstream-Cable 7/0/19 rf-channel 24
  downstream Downstream-Cable 7/0/19 rf-channel 32
  downstream Downstream-Cable 7/0/19 rf-channel 40
  downstream Downstream-Cable 7/0/19 rf-channel 48
  downstream Downstream-Cable 7/0/19 rf-channel 56

interface Bundle3
  description TrafficTest
  ip address 60.2.2.1 255.255.255.0 secondary
  ip address 50.3.3.1 255.255.255.0
  no ip proxy-arp
  ip pim sparse-mode
  load-interval 30
  cable arp filter request-send 3 2
  cable arp filter reply-accept 3 2
  cable dhcp-giaddr policy
  cable helper-address 112.97.0.2

cable fiber-node 70
  downstream Downstream-Cable 7/0/16
  upstream Upstream-Cable 7/0/60

cable fiber-node 71
  downstream Downstream-Cable 7/0/18
  upstream Upstream-Cable 7/0/61

cable rpd Traffic01
  description 2x2_RPD_Traffic_Test
  identifier 7070.8b43.3ed8
  core-interface Te7/1/4
  principal
  rpd-ds 0 downstream-cable 7/0/16 profile 108
  rpd-ds 0 downstream-cable 7/0/19 profile 117
  rpd-ds 1 downstream-cable 7/0/18 profile 108
  rpd-us 0 upstream-cable 7/0/60 profile 106
  rpd-us 1 upstream-cable 7/0/61 profile 106
  r-dti 3
  rpd-event profile 3
  rpd-55d1-us-event profile 0

interface Loopback1588
```

```
ip address 159.159.159.6 255.255.255.255

interface TenGigabitEthernet4/1/7
description RPHY 1588 PTP Interface to ASR903
ip address 112.99.0.1 255.255.255.0
cdp enable
no keepalive
no mop enabled

ip route 192.168.222.222 255.255.255.255 112.99.0.9

ptp clock ordinary domain 0
servo tracking-type R-DTI
clock-port slave-from-903 slave
delay-req interval -4
sync interval -5
sync one-step
transport ipv4 unicast interface Lo1588 negotiation
clock source 192.168.222.222

ptp r-dti 3
ptp-domain 0
clock-port 3
ethernet 1
clock source ip 192.168.222.222 gateway ip 112.97.0.9
```