Cellular Pluggable Interface Module Configuration Guide

The Cisco 4G LTE-Advanced Configuration chapter has been replaced by a new standalone guide called Cellular Pluggable Interface Module Configuration Guide. This guide contains updated information on all aspects of using the Cisco Cellular PIM.

Important The Pluggable Module is not hot swappable. The router must be reloaded after a new module is installed.

Support for the P-5GS6-GL Pluggable Module on the ESR6300

Support for the P-5GS6-GL Pluggable Module works the same on the ESR6300 as it does on the other IoT Routers. For details, see 5G Sub-6 GHz Pluggable Interface Module and Cellular Pluggable Interface Module Configuration Guide.

Galileo Support on the LTE Pluggable Modules

With Cisco IOS XE 17.11.1a and earlier, the only GNSS constellation supported was GPS. This release introduces support for Galileo.

Note Only ONE constellation can be enabled at a time.

There are new CLI options available to support the new constellation:

Configuration Commands

```
config# controller cellular <slot/port>
(config-controller)# <no> lte gps constellation <gps | galileo | gnss >
```

Example:

```
(config-controller)#lte gps constellation ?
  galileo  select Galileo as active constellation
  gps      select GPS as active constellation
  gnss      select multiple GNSS as active constellation
```

Note The default setting is gps mode.

The new galileo and gnss options in the above CLI are used to configure Galileo and Multiple/Simultaneous GNSS (GPS + Galileo etc) respectively.

If you disable the GPS configuration, ensure there is no constellation configured, consistent with GPS mode configuration. For example:

```
config# controller Cellular 0/1/0
(config-controller)# no lte gps constellation gps
```

Show Commands

The following example shows the current GNSS constellation as Galileo:

```
#show cellular 0/1/0 gps detail
GPS Feature =  enabled
GPS Mode Configured =  standalone
Current Constellation Configured =  galileo | gps | gnss
GPS Port Selected =  Dedicated GPS port
GPS Status =  GPS acquiring
```

Any changes made to the configuration will require the router to be rebooted.

More information is available in the Cellular Pluggable Interface Module Configuration Guide.

SNMP MIB objects for wireless quality metrics

You can retrieve quality metrics of routers deployed in the P-LTE-450 networks. The router reports its status and quality metrics using a specific Simple Network Management Protocol (SNMP) Management Information Base (MIB) objects. The P-LTE-450 Pluggable Interface Module (PIM) on Cisco IR1101 and IR1800 routers allows you to integrate with existing SNMP-based management tools.

The router recognizes the P-LTE-450 module as a standard Ethernet interface, Gigabit Ethernet 0/1/0, instead of a cellular interface. You can create a MIB file to convert the Ethernet interface to a cellular interface.

Create the SNMP MIB file

To create a new MIB file and retrieve quality metrics, use the P-LTE-450 cellular interface 0/1/0.

Procedure

Step 1 Open a text editor and create a new file named **cisco-lte450-mib.my**.

This file enables SNMP to manage the LTE450 radio interface parameters.

Step 2 Define the MIB structure.

- Enter the fields required to retrieve the signal and antenna signal quality data.

```
CiscoLte450Entry
ciscoLte450PortIndex(Interger32)
ciscoLte450Rssi(dBm, Lte450Rssi)
ciscoLte450Rsrp(dBm, Lte450Rsrp)
ciscoLte450Rsrq(dBm, Lte450Rsrq)
ciscoLte450Sinr(dBm, Lte450Sinr)
ciscoLte450RssiMain(dBm, Lte450Rssi)
ciscoLte450RsrpMain(dBm, Lte450Rsrp)
ciscoLte450RssiAux(dBm, Lte450Rssi)
ciscoLte450RsrpAux(dBm, Lte450Rsrp)
```

Step 3 Save the MIB file.

- Save the file as **CISCO-LTE450-MIB.my** in the **vob/ ios/mibs/directory**.

Step 4 Compile the MIB file.

- Ensure to compile and load the MIB file into your SNMP management system. This process may vary depending on the SNMP management software you are using.

Step 5 Configure SNMP on the device.

- Ensure that the SNMP is configured on the router to allow access to the new MIB objects.

Verify wireless quality metrics

The output shows the signal quality and antenna signal quality based on these listed parameters:

- Received Signal Strength Indicator (RSSI)
- Reference Signal Received Power (RSRP)
- Reference Signal Received Quality (RSRQ)
- Signal to Interference plus Noise Ratio (SINR)

```
Router# show lte450 0/1/0 radio
Signal quality
==============
RSSI = -88 dBm
RSRP = -114 dBm
RSRQ = -12 dB
SINR = 0 dB

Antenna signal quality
======================
Main RSSI = -87 dBm
Main RSRP = -112 dBm
Aux RSSI = -104 dBm
Aux RSRP = -143 dBm
```