

Additional Modem Support for Cellular Pluggable Modules

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Additional Modem Support for CAT 6 and CAT 7 Cellular Pluggable Modules

The LTE Cat6 Pluggable Interface Modules (PIMs) will be updated with Cat7 modems. The following table shows the product transition:

Table 1: Cat6 to Cat7 Transition

Cat6 (Current)	Cat7 (Refreshed)
Sierra Wireless EM7455/7430	Sierra Wireless EM7411/7421/7431
Cat6 LTE Advanced	Cat7 LTE Advanced

Support for additional modems on the IR1101

The following are the new PIDs that will be available:

- P-LTEA7-NA
- P-LTEA7-EAL
- P-LTEA7-JP
- P-5GS6-R16SA

Support for additional modems on the IR1800

The following are the new PIDs that will be available:

- P-LTEA7-NA

- P-LTEA7-EAL
- P-LTEA7-JP

Important For the new PIDs mentioned above, the following cellular functions have not been tested, and are not supported with IOS XE release 17.13.1 although the CLI commands may permit:

- GNSS/NMEA
- Cellular Dying-Gasp
- eSIM/eUICC support

Note There is no new or changed command line interface with these new modems.

Additional Modem Support for Cellular Pluggable Modules

Cisco IOS-XE Release 17.14.1 enhances connectivity options and throughput on the IR1101 and IR1800 platforms by supporting additional cellular modems:

- CAT 7 Modems:
  - P-LTEA7-NA
  - P-LTEA7-EAL
  - P-LTEA7-JP
- 5G Modem:
  - P-5GS6-R16SA-GL

Note CAT 7 modems support GNSS and NMEA streaming, while currently P-5GS6-R16SA-GL module does not support GPS and NMEA streaming.

5G Standalone Mode (SA) Support

This feature provides 5G Standalone mode (SA) support on the P-5GS6-GL pluggable module. The 5G SA mode support will enable 5G cellular configuration display using Cisco IOS-XE CLI commands.

This feature provides a mechanism in the CLI to select a set of bands for SA mode, as opposed to a single band in previous software releases. The following IOS-XE CLIs have been modified for 5G SA mode support:

- show cellular radio

- show cellular radio details (without carrier aggregation)
- show cellular network

There is also a band selection CLI to select cellular bands.

Show Command Examples

```
Router#show cellular 0/2/0 radio
Radio power mode = Online
5G Rx Channel Number = 632544
5G Tx Channel Number = 632544
5G-SA Band = 78
Bandwidth = 20 MHz
Current 5G RSSI = -60 dBm
Current 5G RSRP = -71 dBm
Current 5G RSRQ = -11 dB
Current 5G SNR = 34.5 dB
Physical Cell Id = 500
Radio Access Technology(RAT) Preference = AUTO
Radio Access Technology(RAT) Selected = 5GNR-SA
```

```
Router#show cellular 0/4/0 radio detail
 Modem Radio is Online
 Main 0 Antenna details:
 RSSI = -38 dBm
 RSRP = -48 dBm
 Diversity 0 Antenna details:
 RSSI = -47 dBm
 RSRP = -58 dBm
```

```
Router#show cellular 0/4/0 network
Current System Time = Sun Jan 6 0:4:36 1980
Current Service Status = Normal
Current Service = Packet switched
Current Roaming Status = Home
Network Selection Mode = Automatic
Network = Test PLMN 1-1
Mobile Country Code (MCC) = 1
Mobile Network Code (MNC) = 1
Packet switch domain(PS) state = Attached
Tracking Area Code (TAC) = 1
Cell ID = 1024
Negotiated network MTU = 1500
```

Band Selection Command Example

The **lte modem band-select** CLI can be used to enable bands that the user wishes to use and subscribe to. By default SA bands are not available.



Important If you wish to use SA bands, the **lte modem band-select** command **MUST** be used as part of the configuration.

The following is an example of the command:

```
conf t
controller cellular 0/2/0
lte modem band-select indices umts3g all lte4g all nr5g-NSA all nr5g-SA 78 slot 0
exit
```

The following shows an example of using nr5g-sa band 48:

```
lte modem band-select indices umts3g "23" lte4g "7" nr5g-nsa "12" nr5g-sa "48" slot 0
```

Note In the above example, umts3g band 23, lte4g band 7, and nr5g-nsa band 12 are not available in the area, which means the modem will only attach to nr5g-nsa band 48.

The following shows an example of using nr5g-sa band 78:

```
lte modem band-select indices umts3g "23" lte4g "7" nr5g-nsa "78" nr5g-sa "none" slot 0
```

Note In the above example, umts3g band 23 and lte4g band 7 are not available in the area, and nr5g-sa bands are turned off which means the modem will only attach to nr5g-nsa band 78.

Limitations

none is an invalid option for lte4g, and nr5g-nsa.