



## **TrangoLINK GigaPlus**

### **Software v1.3 Release Notes & Upgrade Instructions**

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## TrangoLINK GigaPlus v1.3 Release

The release consists of the following software images

FPGA version:	<b>0027040B</b>
OS version	<b>2p6r22b0D042811</b>
FW version	<b>1p3r0D042811</b>
PIC version	<b>60</b>
Modem Version	1
SP ODU FW version	27 <b>*Only SP-ODU with HW RSSI detector are supported.</b>
HP1 ODU FW version	150410
HP2 ODU FW version	142

Bold typeface indicates new images for this release.

### Supported Modulation/Symbol rate combination in this release

BW	Sym Rate	QPSK	QAM16	QAM32	QAM64	QAM128	QAM256
4	3	4	9	12	15	18	20
7	5.6	9	19	24	30	35	39
10	8.3228	14	29	36	45	52	59
14	12.2	21	44	54	66	78	88
20	17.4228	31	63	78	96	111	126
28/30	26	47	95	118	142	166	190
40	34.825	63	128	158	192	225	256
50	43	78	157	195	238	277	318
55/56/80	49.5	90	181	225	275	320	365*

*\*375 Mbps support available on speed 80 qam256 [Ethernet Only, Non-ACM Mode]*

### New Features

1. HP2 ODU Support allows expanded frequency range coverage.
2. FTP file transfer enables easier software upgrade and transfer of diagnostic files.
3. Additional diagnostic information provided in siglevel command.
4. New MIB OID's to display float values as integers for greater SNMP manager compatibility.
5. Mode long/short push button support to reset values. Short push will reset IP and all passwords and snmp community strings to default values. Long push resets all other configuration parameters to default.
6. Update Loopback command to reflect current hardware features.
7. Show internal port counters in status port for additional debugging.
8. Updates to 1+1 Hot Standby implementation.
9. Web Interface/snmp timeout extended to stop false timeout messages for items like odupower on.
10. Alignment mode renamed alignment\_sp to indicate that it is functional for SP ODU's only.
11. Display ODU model and serial as N/A if not connected after reboot instead of storing previously connected information.

### Bug Fixes

1. ATPC timing improvements when link up/down is triggered.
2. Loglevel implementation.
3. TDM ports default to ON after system initialization.
4. Erroneous reporting of errors in status TDM for port 8.
5. Display ODU Serial ID.
6. SP ODU filter selection.
7. Hardware alarm setting enabled.
8. Guard time range for 1+1 Hot Standby.
9. Improvement of 1+1 Hot Standby functionality and reliability.
10. Modified SNMP OID for IP Address fields from string to IPAddress for improved reliability.
11. Threshold display and setting actions.

### Known Limitations

1. BER is based on CRC errors and might not reflect the accurate BER on live data. WA: Use External test equipment to measure accurate BER for testing
2. No current detect for HP2 ODU to indicate loss of communication, so software based mechanism has been implemented.
3. In 1+1 mode with ports off, the ge1 and ge2 interfaces may not come up after reboot due to an issue with the switch. A command reset phy may be used to manually reset the switch on soft reboot, a power cycle or turning off failover mode and a soft reboot will all resolve the problem.

## Software Image Upgrade Procedure from v1.2.x to v1.3

**If you are upgrading from a version prior to 1.2.x, please see the separate instructions for upgrading in the following pages. There is an additional step required to ensure a reliable upgrade.**

Please review these instructions before starting to ensure that you have adequate time scheduled to perform the upgrade as well as fully understand the implications of the process. While all software is tested by Trango Systems on current hardware before being released, it is strongly suggested that you initially perform this upgrade on your lab equipment and not initially in a production environment and test for any and all needed functionality before deploying.

1. Note down the current version of the firmware loaded in the radio (CLI version).
2. Connect Management Ethernet port to PC.
3. Configure an IP address in unit if not already done.
4. Start a Telnet session.
5. Turn TFTPd service on the Radio ON with commands:  
*(cli-config)tftpd on*
6. Send New Firmware Image to target Radio.

In DOS window, type command:

```
dos> tftp -i [ip address] put idu_GigaPlus_v1.3.tar.gz  
ip address          IP Address of the Radio.
```

In Linux window, type commands:

```
# tftp  
tftp> mode binary  
tftp> connect [radio ip address]  
tftp> put idu_GigaPlus_v1.3.tar.gz  
tftp> quit
```

7. After the files are transferred on the Radio. Use the “bootimage upgrade idu” command from the config mode on the radio.

The command prompt will return with SUCCESS/ERROR once the image is copied to flash.

```
(cli-config) bootimage upgrade idu // for all idu image upgrade  
(cli-config) bootimage upgrade odu // for odu firmware upgrade
```

*(ODU upgrade is not required from 1.2 to 1.3, but may be required if your firmware does not match the version below.)*

The new image will take effect once the radio is rebooted.

8. Reboot the radio:  
*(cli-config) reboot*
9. Check the new version on the system with CLI command “version”. It should match with the versions listed below. **In case of mismatch version, please perform the upgrade again from step 1.**

FPGA version:	<b>0027040B</b>
OS version	<b>2p6r22b0D042811</b>
FW version	<b>1p3r0D042811</b>
PIC version	<b>60</b>
Modem Version	<b>1</b>
SP ODU FW version	<b>27</b>
HP1 ODU FW version	<b>150410</b>
HP2 ODU FW version	<b>142</b>

**\*Image upgrade for ODU will cause a link loss since its need to be powered cycle during the image upgrade process**

**\*Image upgrade for IDU will be copied to flash during image upgrade (bootimage upgrade idu”) and will not affect the working link until the system is rebooted / power cycled.**

\*Note: Please follow all the instructions as listed above in the upgrade instructions. In the case of version mismatch on the system (local/remote/idu/odu) the system is NOT guaranteed to work. In the event of a power failure during the upgrade process or any mismatch conflict, please contact technical support '[techsupport@trangosys.com](mailto:techsupport@trangosys.com)' for further assistance. Serial console remote access to the IDU's might be required in the event of such failure.

**Please do not make any implicit assumptions.  
In case of any doubt please contact technical support for clarification.**

## Software Image Upgrade Procedure from v1.1.x to v1.3

Please review these instructions before starting to ensure that you have adequate time scheduled to perform the upgrade as well as fully understand the implications of the process. While all software is tested by Trango Systems on current hardware before being released, it is strongly suggested that you initially perform this upgrade on your lab equipment and not initially in a production environment and test for any and all needed functionality before deploying.

**This upgrade will require two-step process as it is required to go to 1.2 before going to 1.3.**

**Release v1.2 is not down-gradable.** If a downgrade is absolutely required, please contact Trango support to perform the downgrade process.

1. Note down the current version of the firmware loaded in the radio (CLI version).
2. Connect Management Ethernet port to PC.
3. Configure an IP address in unit if not already done.
4. Start a Telnet session.
5. Turn TFTPd service on the Radio ON with commands:  
*(cli-config)tftpd on*
6. Send New Firmware Image to target Radio.

In DOS window, type command:

```
dos> tftp -i [ip address] put idu_GigaPlus_v1.2_inter.tar.gz
ip address          IP Address of the Radio.
```

In Linux window, type commands:

```
# tftp
tftp> mode binary
tftp> connect [radio ip address]
tftp> put idu_GigaPlus_v1.2_inter.tar.gz
tftp> quit
```

7. After the files are transferred on the Radio. Use the “bootimage upgrade idu” command from the config mode on the radio.

```
(cli-config) bootimage upgrade idu
```

```
.....
.....
.....
```

**SUCCESS**

8. Reboot the radio:  
*(cli-config) reboot*
  
9. Check the new version on the system with CLI command “version”. It should match with the versions listed below. **PIC version could display any random version with this intermediate upgrade process. Ignore the PIC image and proceed to the next upgrade process.**

IDU FPGA version:	0006040A
IDU OS version:	2p6r22b0D092810
IDU FW version:	1p1r1D092810
<b>IDU PIC version:</b>	<b>116</b>
IDU Modem version:	1
ODU FW version:	N/A
  
10. Turn TFTPd service on the Radio ON with commands:  
*(cli-config)tftpd on*
  
11. Transfer the final image file “idu\_GigaPlus\_v1.3.tar.gz” with the same command instruction in step 6.
  
12. After the files are transferred on the Radio, the images need to be burned on the flash in the system to the appropriate flash partition. Use the “bootimage” command from the config node on the radio.

The command prompt will return with SUCCESS/ERROR once the image is copied to flash.

```
(cli-config) bootimage upgrade idu // for all idu image upgrade  
(cli-config) bootimage upgrade odu // for odu firmware upgrade  
(ODU upgrade is not required from 1.1.1 to 1.3, but may be required if your firmware does not  
match the version below.)
```

The new image will take effect once the radio is rebooted.

13. Reboot the radio:  
*(cli-config) reboot*

14. Check the new version on the system with CLI command “version”. It should match with the versions listed below. **In case of mismatch version, please perform the upgrade again from step 1.**

FPGA version:	<b>0027040B</b>
OS version	<b>2p6r22b0D042811</b>
FW version	<b>1p3r0D042811</b>
PIC version	<b>60</b>
Modem Version	<b>1</b>
SP ODU FW version	<b>27</b>
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\*Note: Please follow all the instructions as listed above in the upgrade instructions. In the case of version mismatch on the system (local/remote/idu/odu) the system is NOT guaranteed to work. In the event of a power failure during the upgrade process or any mismatch conflict, please contact technical support '[techsupport@trangosys.com](mailto:techsupport@trangosys.com)' for further assistance. Serial console remote access to the IDU's might be required in the event of such failure.

**Please do not make any implicit assumptions.  
In case of any doubt please contact technical support for clarification.**

## CLI Additions

### ftp

#### SYNTAX

```
ftp
ftp <server_ip> <user_name>
```

```
ftp> get <file_name>: perform ftp get command. Get file from the ftp server
ftp> mode: configure ftp operation mode. Passive or active.
ftp> put <file_name> <server path>: perform ftp put command. Put file to the ftp server
ftp> logout: logout of ftp session.
```

Default: server\_ip=NULL, user\_name=NULL, mode=Passive  
Configuration Storage: No

#### DESCRIPTION

To perform ftp operation. Provide the command with the ftp server IP and the user login. Enter the password when prompted.

```
ftp> get <file_name>: Do NOT supply the path to the file that needs to be put on to the.
It will be stored in the default system directory
See example below.
```

```
ftp> put <source file> <destination>: source will be the filename only,. Destination will
include both path and file name.
```

**Note:** file on the ftp server might need to be deleted before it can be uploaded with the same file name.

```
ftp> mode <mode>: Default operation mode is Passive and can be configure as active
with the mode option.
```

```
ftp> logout: logout of the ftp session.
```

**Note: Please ensure that the FTP server is reachable by checking with ping command from debug prompt.**

#### EXAMPLE

```
(CLI-eng)# ftp 10.14.0.85 trango
Password:
ftp>get zImage
#####

Get operation successful with passive mode

ftp>put linkloss.txt linkloss.txt
#####

Put operation successful with passive mode

ftp>logout
(CLI-config)#
```

*siglevel***SYNTAX***siglevel*

Default: N/Q

Configuration Storage: No

*Siglevel* will display the signal level related parameter for modem 1**DESCRIPTION**

This command is used to assist debugging any signal level related issue.

IDU RSSI: idu rssi on the modem level.

Normalize MSE/Radial MSE:

**Norm-MSE = Radial MSE** phase noise residue is minimal**Norm-MSE > Radial MSE** there is some amplitude noise (AM distortion)**Norm-MSE < Radial MSE** phase noise residue exist, that the PLL did not fully correct

Uncorrect Block: Error reported by modem when passing traffics.

Power sensors: used to make sure TX power accuracy. Some models use only IF, while others use only the RF values.

Odu attn: Make sure the attenuators have been set correctly.

**Note:** Block counter & uncorrect block counter are cumulative values since the last link establishment. They are collected on a 20 second periodic basis.**EXAMPLE**

```
(CLI-view)# siglevel
IDU RSSI:          0
Normalized MSE:    -348
Radial MSE:        -340
LDPC Decoder Stress: 0
External AGC:      1604
Carrier Offset:    2466
Rx Symrate:        49500732
Block Counter:     0
Uncorrect Block:   0
LDPC Avg Iteration: 0
Output corrected bytes: 0
Return Loss:       0x0000
Tx Power alarm:    ok
Tx PA alarm:       ok
PA on/off alarm:   on
Tx Power Range alarm: ok
Tx Power actual:   20.00
Rx Power actual:   -23.00
```

Channel test: Pass  
Telemetry debug: Pass  
(CLI-view)#

## reset

### SYNTAX

*reset config*  
*reset ipconfig*  
*reset license\_key*  
*reset phy*

Engineer-node:  
*reset device <0-6>*:

Default: N/A  
Configuration Storage: No

### DESCRIPTION

*reset config*: Restore all factory default configuration setting including resetting password for system login, CLI config node, Web interface login. Excluding license key and IP configuration.

This will require a reboot.

*reset ipconfig*: Reset only the IP configuration to default. Effected only after reboot command.

*reset license\_key*: Remove all license key.

*reset phy*: Reset the PHY

## GigaPlus Software Change History

### Software Version 1.2.0

FPGA version	0014100A
OS version	2p6r22b0D010611
FW version	1p2r0D010611
PIC version	59
Modem Version	1
SP ODU FW version	27
HP ODU FW version	150410

#### New Features

1. 1+1 Failover mode  
To support 1+1 failover feature with 4 IDU and 4 ODU setup. Active and Standby units are synchronized at all times and whenever Active unit has met the failure condition, the Standby will take over to resume the data transfer. This feature is to give the system more robustness and reduce downtime.
2. New “freq\_duplex” command for configure the Tx Rx duplex value. This is valid only for HP ODUs.
3. Add new OID to display some system parameter in integer support certain SNMP manager that does not display OID in float val.
4. Threshold action can be configured as more than one action. Allows users to have more than one action executed when the threshold values violets the configured settings. The actions to be allowed are alarm1, alarm2, snmptrap and switchover and they can all be configured as part of the actions.
5. New debugging CLI “siglevel” to better diagnostic the link condition.

#### Limitations

1. BER is based on CRC errors and might not reflect the accurate BER on live data. WA: Use External test equipment to measure accurate BER for testing
2. Packet Drops and link loss observed when using EXFO tester with stream tag enabled. WA: Use Datapath 1 or 2.
3. Rf gen/rf refl loopback not supported in this release. WA: Use IF loopback for debugging.

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## Software Version 1.1.2

FPGA version:	0006040A
OS version	<b>2p6r22b0D121410</b>
FW version	<b>1p1r2D121410</b>
PIC version	5
Modem Version	1
SP ODU FW version	27
HP ODU FW version	150410

### New Feature

1. New "freq\_duplex" command for configure the Tx Rx duplex value. This is valid only for HP ODUs.
- 

## Software Version 1.1.1

FPGA version:	0006040A
OS version	<b>2p6r22b0D092810</b>
FW version	<b>1p1r1D092810</b>
PIC version	5
Modem Version	1
SP ODU FW version	27
HP ODU FW version	150410

### Bug Fixes

1. Ghost packet fix. Modem counters increment unreasonably when radio loses link with bad MSE values.
  2. Rare IDU hang issue after system boot-up on IDU. No access to the IDU until power cycle.
- 

## Software Version 1.1

FPGA version:	0006040A
OS version	<b>2p6r22b0D080610</b>
FW version	<b>1p1r0D080610</b>
PIC version	5
Modem Version	1
SP ODU FW version	27
HP ODU FW version	150410

### New Features

1. 56Mhz channel support for 11G. No more speed validation.
2. Channel width (filter) setting to ODU at speed command based on new hardware Idu of 0x08, 0x09, 0x0a.
3. ODU RX AGC loop disable for new ODU HWID of 0x08, 0x09, 0x0a.

4. Web interface: Version section moved to "System Status" tab.
5. HP ODU modulation option 7 support (QAM256) with fall back to option 6 (QAM128) if fails.
6. HP ODU upgrade stability improvement.
7. Add ODU model prefix of "SP" for all SP ODUs and display HW ID.
8. Add HP model # for HP if model # is not pre-programmed.
9. Base license key 1 update to throughput 118 Mbps.
10. New siglevel debug command to track attn./idu sign levels from config node.
11. Port Utilization duration changed from 1min to 20sec.
12. No automatic ODU power off in case of ODU communication failure.

#### Bug Fixes

1. Web interface: IP format configuration fix from web interface
2. Web interface: Diagnostic spelling error on the page.
3. Display datapath in "text" instead of the numeric representation from config view.
4. 18G boundary frequency fix (18135 for Band 1, 19265 for Band 2. IF fixed to 315 instead of special values)
5. Gateway setting re-issue after IP / IBM configuration change
6. Retrieving Serial ID after system init to resolve timing issue with IDU serial #
7. Fixed power setting at system bootup with ATPC enable.
8. Fix for jumbo packet counter display.