TrangoLINK GigaPro

**Software v1.3.7
Release Notes &
Upgrade Instructions**

25 Sept 2015

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TrangoLINK GigaPro v1.3.7 Release

The release consists of the following software images:

FPGA1 version:	0018050A
FPGA2 version	8018050A
OS version	**2p6r20b0D091015**
FW version	**1p3r7D091015**
PIC version	5
Modem0 610 version	1
Modem1 610 version	1
[SP*] ODU FW version	27
[HP] ODU FW version	150410
[HP1] ODU FW version	060211
[HP2] ODU FW version	142

Bold typeface indicates new images for this release.
*Only SP ODUs with hardware RSSI are supported (HW ID 8,9, and 10). SP ODU must have existing FW 25 or above.

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]

Enhancements
1. None

Bug fixes
1. Do not automatically TX switchover to diversity ODU when in Space Diversity system configuration upon ODU communication time out, or under any circumstances except for manual switchover from CLI is initiated.
2. Extended HP and HP1 ODU communication timeout to reduce the possibility of false ODU communication alarm.

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. Packet drops observed when using EXFO tester with stream tags enabled.
    WA: Use datapath with TDM or disable stream tags.
3. RF gen/refl loopback settings not supported with HP series ODUs.
    WA: Use loopback IF for debugging.

Software Image Upgrade Procedure from v1.3.x to v1.3.7, FTP

If you are upgrading from a version prior to 1.3, please see the separate instructions for upgrading in the following pages. The upgrade process has been simplified starting with 1.3.

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.

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.

To perform the firmware upgrade using FTP, use the *ftp* command to load the images into memory, then the *bootimage upgrade* commands. The FTP method is much faster and has built in error checking than TFTP. If you prefer to use the TFTP method, instructions can be found in the user's manual or you may follow the tftp instructions provided in the subsequent upgrade paths to copy the necessary files.

All that is needed is the IP address of the ftp server, a username/password, and the filename to be uploaded.   The new file to be uploaded should be placed on the server. The ftp server will prompt for the password before allowing access.

If the GigaPro is configured with a route to the Internet, you can even pull the new software images directly from our ftp server. If you would rather load them into a local server, please change the IP addresses and directory structure in the examples below as needed. You will need an appropriate default gateway setup in the GigaPro as well as a route to the Internet through management or IBM. Trango suggests checking connectivity with ping from debug prompt before attempting the ftp upgrade. To do that, login to the CLI view node, then config node and then debug node. Ping 74.62.177.9 to test for connectivity to our FTP server.

1. Decide to either transfer the file directly from Trango's FTP server or copy it to your own local FTP server. If copying to your own server then the image file may be obtained from the Trango website. We recommend verifying the file name and path to ensure that nothing has changed since this document was prepared.

2. Note the current version of the firmware loaded in the radio (CLI version).

3. Connect Management Ethernet port to PC.

4. Configure an IP address in unit if not already done.

5. Start a Telnet or SSH session. Log into the GigaPro, go to config node, and then debug node to test connectivity to your ftp server.

    > ***Debug> ping 74.62.177.9***
    > *PING 74.62.177.9 (74.62.177.9): 56 data bytes*
    > *64 bytes from 74.62.177.9: seq=0 ttl=127 time=0.965 ms*
    > *64 bytes from 74.62.177.9: seq=1 ttl=127 time=10.009 ms*

    Press ctrl+c to stop the ping.

    > *--- 74.62.177.9 ping statistics ---*
    > *2 packets transmitted, 2 packets received, 0% packet loss*
    > *round-trip min/avg/max = 0.965/5.487/10.009 ms*

    If the ping test is not successful, check your IP address and default gateway to ensure that those are addresses that will reach the Internet through your firewall.

6. After verifying connectivity, return to config node and save your config if not already done so:

    > ***Debug> cli***
    >
    > ***Trango System: TrangoLINK GigaPro Command Line Interface v1.3.0***
    >
    > ***(CLI-view)# config***
    > ***Password: trango***
    > ***(CLI-config)# config save***
    > **New configuration saved**
    >
    > **SUCCESS**

7. Run the *ftp* command from the command line as follows to open access to the server:

    > ***(CLI-config)# ftp 74.62.177.9 giga***
    > ***password: giga4773***

    If prompted for the password multiple times, check the connectivity to the server by pinging the FTP server IP address from the debug prompt. You may also test the ftp credentials from a laptop or other computer on the same network subnet.

8. Next, get the file from the FTP server by typing the get command from the ftp prompt.

    > ***ftp> get TL-GigaPro/idu_GigaPro_v1.3.7.tar.gz***
    > ***#########***
    >
    > ***Get operation successful with passive mode***

9. Logout of the ftp session

    > ***ftp> logout***

10. Process the upgrade using the bootimage upgrade idu command.

> *(CLI-config)# bootimage upgrade idu*
>
> ....
> ....
> ....
>
> *SUCCESS*

11. After the process returns success, reboot the radio for the new image to be loaded into active memory.
    > *(CLI-config)# reboot*

12. Check the new version on the system with CLI command "version". It should match with the versions listed in the change history. **In case of mismatch version, please perform the upgrade again from step 1.**

Please follow all the instructions as listed above in the upgrade instructions. In the case of version mismatch on the system (local/remote/system) 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> for further assistance. Serial console remote access to the IDUs might be required in the event of such failure. It is suggested that all customers have at least one serial/console cable available at each site.

Please don't make any implicit assumptions.
In case of any doubt please contact technical support for clarification.

Software Image Upgrade Procedure from v1.x to v1.3.7, TFTP

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.

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.

If SP ODU fw is not already 25 or greater, it must be upgraded prior to the IDU upgrade. ODU fw upgrade will cause link loss as the fw is applied during the bootimage upgrade odu command.

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/SSH session.

5. Turn TFTPd service on the Radio ON with commands:
   (trango-config)tftpd on

6. Send New Firmware Image to target Radio.

   In DOS window, type command:
   dos> tftp –i [ip address] put idu_GigaPro_v1.3.7.tar.gz
   ip address   IP Address of the Radio.

   In Mac/Linux window, type commands:
   # tftp
   tftp> mode binary
   tftp> connect [radio ip address]
   tftp> put idu_GigaPro_v1.3.7.tar.gz
   tftp> quit

7. 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 odu1*   // for odu1 firmware upgrade*
> *(cli-config) bootimage upgrade odu2*   // for odu2 firmware upgrade*

*ODU upgrade not required typically during upgrade from 1.2.x to 1.3.7. Compare your ODU FW with those listed below to determine if you need to upgrade. If upgrade is necessary, please upload the ODU files as per step 6.

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 the change history. **In case of mismatch version, please perform the upgrade again from step 1.**

Please follow all the instructions as listed above in the upgrade instructions. In the case of version mismatch on the system (local/remote/system) 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> for further assistance. Serial console remote access to the IDUs might be required in the event of such failure. It is suggested that all customers have at least one serial/console cable available at each site.

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Please don't make any implicit assumptions.
In case of any doubt please contact technical support for clarification.

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GigaPro Software Change History

Software Version 1.3.7

FPGA1 version:	0018050A
FPGA2 version	8018050A
OS version	**2p6r20b0D091015**
FW version	**1p3r7D091015**
PIC version	5
Modem0 610 version	1
Modem1 610 version	1
[SP*] ODU FW version	27
[HP1] ODU FW version	150410
[HP2] ODU FW version	142

Bold typeface indicates new images for this release.

New Features
1. None

Bug fixes
1. Do not automatically TX switchover to diversity ODU when in Space Diversity system configuration upon ODU communication time out, or under any circumstances except for manual switchover from CLI is initiated.
2. Extended HP and HP1 ODU communication timeout to reduce the possibility of false ODU communication alarm.

Software Version 1.3.3

FPGA1 version:	0018050A
FPGA2 version	8018050A
OS version	**2p6r20b0D61213**
FW version	**1p3r3D061213**
PIC version	5
Modem0 610 version	1
Modem1 610 version	1
[SP*] ODU FW version	27
[HP1] ODU FW version	150410
[HP2] ODU FW version	142

Bold typeface indicates new images for this release.

New Features
3. None

Bug fixes
1. All Speed profiles using STM-1 or OC3 were updated to fix a bug that prevents container framing formats from being passed over the link. **IF USING STM-1 or OC3 this version of software must be used.**
2. "RSSI Opaque" was displaying on the web interface for the RSSI value
3. Radio 2 ODU firmware version was displaying incorrectly.

4. Voltage threshold tolerances were too tight and caused trap events when no hardware problem existed. The tolerances were widened.

Software Version 1.3.1

FPGA1 version:	0018050A
FPGA2 version	8018050A
OS version	**2p6r20b0D072011**
FW version	**1p3r0D072011**
PIC version	5
Modem0 610 version	1
Modem1 610 version	1
[SP*] ODU FW version	27
[HP1] ODU FW version	150410
[HP2] ODU FW version	142

Bold typeface indicates new images for this release.

New Features

4. HP2 ODU Support for expanded frequency coverage.
5. FTP support for image upgrades and other file transfers.
6. New MIB OID to display float values as integers for expanded SNMP manager compatibility. OIDs updated: Freq Duplex, Cableloss, Power, Target RSSI, RSSI. *Note: You may need to update your SNMP manager with the new OIDs.*
7. Thresholds can be configured to perform more than one action.
8. CLI command siglevel added for additional diagnostic support.
9. Remove loopback options for rf_gen and rf_refl. Loopback IF and DIG remain for diagnostic purposes.
10. Web interface timeout extended for commands that would time-out, like ODU Power On.
11. Other general enhancements to the web interface.

Bug fixes

1. Setting IP address and similar fields from SNMP manager or web interface with extra characters could cause the radio to be unresponsive. Input is now validated so extra characters will not be allowed.

Software Version 1.2.1

FPGA1 version:	0018050A
FPGA2 version	8018050A
OS version	**2p6r20b0D101210**
FW version	**1p2r1D101210**
PIC version	5
Modem0 610 version	1
Modem1 610 version	1
SP ODU FW version	27
HP ODU FW version	150410

Bold typeface indicates new images for this release.

New Features
1. New modem status for tx/rx profile change during ACM mode in syslog and SNMP traps.
2. TDM license not required for use with STM1 datapaths. (STM1 license required.)

Bug fixes
1. Ghost packet fix. Modem counters would increment unreasonably if link lost or poor MSE.
2. Preventative fix for rare IDU hang during system boot that would require a power cycle.
3. Retrieving STM1 counters from modem2 during 1+0 mode with datapath set to include STM1 will cause timeout and hence delay remaining commands.
4. Port rate and utilization display incorrect values for modem2.
5. ODU Power on/off calibration.

Software Version 1.2.0

FPGA1 version:	**0018050A**
FPGA2 version	**8018050A**
OS version	**2p6r20b0D080610**
FW version	**1p2r0D080610**
PIC version	5
Modem0 610 version	1
Modem1 610 version	1
SP ODU FW version	**27**
HP ODU FW version	**150410**

New Features
1. 56Mhz channel support for 11G. No more speed validation for all ODU models
2. Channel width (filter) setting for SP-ODU at speed command based on new hardware Idu of 0x08, 0x09, 0x0a. (8mhz, 30mhz, 60 mhz)
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 upgrades stability improvement.
7. Add ODU model prefix of "SP".
8. Add model number for HP ODU if model number is not pre-programmed
9. Model display now include IDU HW ID: 1: no cable detect, 2: with cable detect
10. Base license key 1 update to throughput 118 Mbps
11. New siglevel debug command to track attn./idu sign levels from config node
12. Port Utilization duration changed from 1min to 20sec

13. FPGA update: Cable detect feature
14. No automatic ODU power off in case of odu communication failure
15. In 1+1/HSB mode automatic odu power off for failed ODU

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)
5. Power capped restriction removed, independent of ATPC max power capping
6. STM1 port 2 counter fix. (was not collecting counter on port2)
7. Add 200 ms delay before setting the BFP filter (for fixing HP 15G link issue)
8. Gateway setting re-issue after IP / IBM configuration change
9. Retrieving Serial ID after system init to resolve timing issue with IDU serial number
10. Power setting at system bootup with ATPC enable
11. Fix for jumbo packet counter display

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. Packet drops detected by EXFO tester with stream tags enabled.
   WA: Use datapath other than Ethernet only for prbs testing.
   Note: Has not been known to impact production data traffic, only pseudo random test streams with PRBS sequence.
3. Loopback RF gen/RF refl not supported in this release. Use IF loopback for debugging.

Software Version 1.1.0

FPGA1 version: 01151209
FPGA2 version   80071209
OS version   2p6r20b0D040810
FW version   1p1r0D040810
PIC version   5
Modem0 610 version   1
Modem1 610 version   1
ODU 1 FW version   1F
ODU 2 FW version   1F

New Features

1. In band management feature
2. 6 GHz support
3. Multi-point cal support

4. New traps for TDM port status change
5. Monitor fan speed and have the backup take over if the current one fails
6. Added alarm input information. CLI "alarm" to display additional info.
7. Mode button now only reset IP and passwords. No configuration reset.
8. New CLI for manual protection mode switchover "protection_switchover"
9. Tx failure detection due to disconnection ODU, IF card failure

Enhancements
1. LinkSteady time update to 30 sec from 2.5 min
2. Sending traps for voltage failure, print of the failed voltage value
3. Enhance RPS and trunk messaging mechanism
4. New traps for TDM port status change
5. Unblock BW 56 for 15G
6. Add new TRAP OID: tdm port status and fan control
7. Add odupower, odurxagc, reboot and modem role option on web interface
8. Hide remark for Radio1/Radio2 in 1+0 mode
9. Enhance failure reporting mechanism for web interface.
10. Syslog CLI shows only up to loglevel 2 for config/view node

Bug Fixes
1. Default factory reset and ipconfig reset fix for web interface.
2. Add new page for Ethernet port 5/6 counter status for web interface.
3. Fix ETH 5/6 priority OID.
4. Fix HP speed with BW 80.
5. Cable attenuator setting fix.

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. Packet drops detected by EXFO tester with stream tags enabled.
    WA: Use datapath other than Ethernet only for prbs testing.
    Note: Has not been known to impact production data traffic, only pseudo random test streams with PRBS sequence.
3. Loopback RF gen/RF refl not supported in this release. Use IF loopback for debugging.

Software Version 1.0

FPGA1 version:	01151209
FPGA2 version	80071209
OS version	2p6r20b0D12310901
FW version	1p0r0D123109
PIC version	5
Modem0 610 version	1
Modem1 610 version	1

ODU 1 FW version   1F
ODU 2 FW version   1F

Key Features
1. 3.5Mhz – 56Mhz channel bandwidth, FCC and ETSI compliant
2. Supported frequency 6-38 Ghz HP ODU and 11-23 SP ODU
3. Designed for NEBS compliance
4. Hitless Adaptive Modulation for all modulations except QPSK
5. Native Ethernet and 16xE1 Support
6. Packet QoS based on 802.1p
7. GigE ports supports configurable Speed, Duplex, Rate limiting and Jumbo packets
8. Upto 32 E1 Ports with HDB3 coding
9. System Configuration
    a. 1+0 Mode – Single modem unit – up to 375* Mbps
    b. 1+1 Mode – Hitless Switching Dual modem protected – Max 375* Mbps
    c. East/West Mode – Dual modem External relay –up to 375*
    d. 2+0 Ethernet Link Aggregation Mode – up to 750* Mbps each direction [Subject to statistical traffic distribution. Default Hashing based on Src/Dst Mac address]
    e. 1+1 Freq Diversity
    f. 1+1 Space Diversity
10. Rapid Port Shutdown
11. ATPC
12. CLI access via Serial Console/SSH/Telnet
13. SNMPv2 support (Trango MIBS)
14. Web Access supports both secure (HTTPS) and regular (HTTP
15. Threshold Monitoring

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. Packet drops detected by EXFO tester with stream tags enabled.
    WA: Use datapath other than Ethernet only for prbs testing.
    Note: Has not been known to impact production data traffic, only pseudo random test streams with PRBS sequence.
3. Loopback RF gen/RF refl not supported in this release. Use IF loopback for debugging.
4. No In Band Management functionality.
5. No support for SP 6 GHz.