TrangoLINK Giga

**Software v2.6.0
Release Notes &
Upgrade Instructions**

15 March 2012

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TrangoLINK Giga v2.6.0 Release

The release consists of the following software images

IDU FPGA version:	00220909
IDU OS version:	2p6r14b3D06211101
IDU FW version:	**2p6r0D021712**
IDU PIC version:	25
IDU Modem version:	42
ODU FW version:	27

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

Enhancements

1. Disable MAC address learning on the internal switch to protect against corrupted MAC address table.
2. ODU hardware ID will now show in the CLI model command. This is useful to see if a particular ODU would be compatible with GigaPlus or GigaPro which requires hardware based RSSI detection.

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. Users are responsible to set the appropriate TX power level and frequency based on their licensed path and datasheet limitations per modulation.
3. Web Interface supports only a single level of access (config).
4. ODU Firmware upgrade: If upgrading the odu firmware on one link (both remote and local unit), make sure to issue the bootimage upgrade 5 with at least 10 second apart between the two units. There is a very low possibility that sometimes ODU image upgrade will fail in the first attempt. Re-issuing the image upgrade command the 2nd time will make it work.
5. STP with vlan 1: If vlan1 is used in production and more than one connection is made from the switch to the Giga IDU or IDUs are cross connected in a repeater or east/west configuration, spanning tree protocol may report a loop exists in the network. Workaround: Use only one ge port, do not use vlan 1, disable spanning tree or use fw 2.4.2 which blocks stp bpdu's on vlan 1.
6. Strongly suggested to use the CLI instead of web or snmp to set IP addresses and related fields. If extra characters are inadvertently inserted into the input, it can cause the management portion of the radio to crash. Remote console access will be required for technical support to restore normal operation.
7. IDU & ODU display may show 00 for RSSI. Software will report correct RSSI via cli, web and snmp.

Software Image Upgrade Procedure from v2.4.x to v2.6

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.

For upgrade from 2.5.x to 2.6 it is only necessary to transfer the idu_fw file and issue bootimage upgade 2. The other images may be skipped if they match the current release.

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:
     (cli-config)tftpd on

6. Send New Firmware Image to target Radio.

    In DOS window, type command:
     dos> tftp –i [ip address] put idu_fpga_092200.bin
     dos> tftp –i [ip address] put idu_os_v250.bin
     dos> tftp –i [ip address] put idu_fw_v260.bin
     dos> tftp –i [ip address] put odu_fw.bin
     ip address   IP Address of the Radio.

    In Linux window, type commands:
     # tftp
     tftp> mode binary
     tftp> connect [radio ip address]
     tftp> put idu_fpga_v250.bin
     tftp> put idu_os_v250.bin
     tftp> put idu_fw_v260.bin
     tftp> put odu_fw.bin
     tftp> quit

7.   After the files are transferred on the Radio. Use the "bootimage upgrade *x*" 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 0   // for fpga image upgrade
(cli-config) bootimage upgrade 1   // for idu os image upgrade
(cli-config) bootimage upgrade 2   // for idu fw image upgrade
(cli-config) bootimage upgrade 5   // for odu firmware upgrade

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.**

IDU FPGA version:	00220909
IDU OS version:	2p6r14b3D06211101
IDU FW version:	2p6r0D021712
IDU PIC version:	25
IDU Modem version:	42
ODU FW version:	27

Image upgrade for ODU will cause a link loss since its need to be powered cycle during the image upgrade process. If upgrading the odu firmware on one link (both remote and local unit), make sure to issue the bootimage upgrade 5 with at least 10 second apart between the two units. There is a very low possibility that sometimes ODU image upgrade will fail in the first attempt. Re-issuing the image upgrade command the 2nd time will make it work.

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' 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 v2.1-2.3 to v2.5

If you are upgrading from a version prior to 2.1.x, you must upgrade to 2.1 before upgrading to 2.5. Please see those instructions to complete the first upgrade, then return here and follow these steps.

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/spare 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_fpga_v250.bin
    dos> tftp –i [ip address] put idu_os_v250.bin
    dos> tftp –i [ip address] put idu_fw_v260.bin
    dos> tftp –i [ip address] put idu_pic_v250.bin
    dos> tftp –i [ip address] put odu_fw.bin
    ip address   IP Address of the Radio.

    In Linux window, type commands:
    # tftp
    tftp> mode binary
    tftp> connect [radio ip address]
    tftp> put idu_fpga_092200.bin
    tftp> put idu_os_v250.bin
    tftp> put idu_fw_v260.bin
    tftp> put idu_pic_v250.bin
    tftp> put odu_fw.bin
    tftp> quit

7. After the files are transferred on the Radio. Use the "bootimage upgrade *x*" 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 0*   // for fpga image upgrade
> *(cli-config) bootimage upgrade 1*   // for idu os image upgrade
> *(cli-config) bootimage upgrade 2*   // for idu fw image upgrade
> *(cli-config) bootimage upgrade 3*   // for idu pic image upgrade
> *(cli-config) bootimage upgrade 5*   // for odu firmware upgrade

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.**

IDU FPGA version:	00220909
IDU OS version:	2p6r14b3D06211101
IDU FW version:	2p6r0D021712
IDU PIC version:	25
IDU Modem version:	42
ODU FW version:	27

Image upgrade for ODU will cause a link loss since its need to be powered cycle during the image upgrade process. If upgrading the odu firmware on one link (both remote and local units), make sure to issue the bootimage upgrade 5 command at least 10 second apart. There is a very low possibility that sometimes ODU image upgrade will fail in the first attempt. Re-issuing the image upgrade command the 2nd time will make it work.

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' 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 Change History

Software Version 2.5.1

IDU FPGA version:	00220909
IDU OS version:	2p6r14b3D06211101
IDU FW version:	**2p5r1D122111**
IDU PIC version:	25
IDU Modem version:	42
ODU FW version:	27

Changes and Enhancements
1. Resolve issue with Giga18-ODU's with HWID FF that would experience low RSSI until target RSSI was re-set in v. 2.5.0.

Software Version 2.5.0

IDU FPGA version:	**00220909**
IDU OS version:	**2p6r14b3D06211101**
IDU FW version:	**2p5r0D062111**
IDU PIC version:	25
IDU Modem version:	42
ODU FW version:	**27**

Changes and Enhancements
1. SNMP monitoring improved, resolved timeouts when unsupported OID was polled.
2. Rateshift up criteria updated to greater than target rssi – 4 db.
3. Ethernet ports will remain off after reboot if configured to do so.

Software Version 2.4.3

IDU FPGA version:	00220409
IDU OS version:	**2p6r14b3D02251001**
IDU FW version:	**2p4r3D022510**
IDU PIC version:	25
IDU Modem version:	42
ODU FW version:	1F (all model)

Changes and Enhancements
1. BPDU redirection for spanning tree under vlan 1.

Software Version 2.4.2

IDU FPGA version:	00220409
IDU OS version:	**2p6r14b3D08200901**
IDU FW version:	**2p4r2D082009**
IDU PIC version:	25
IDU Modem version:	42
ODU FW version:	**1F (all model)**

Changes and Enhancements
1. Rateshift feature fix.

2.   IBM Netmask fix.
3.   Web interface "Ethernet setting" fix.
4.   New state, in-progress, added to snmp image upgrade status OID.
5.   18E frequency table fix for 18428, 18916.
6.   ODU Calibration data erase prevention.

Software Version 2.4.1

IDU FPGA version: 00220409
IDU OS version: **2p6r14b3D07130901**
IDU FW version: **2p4r1D071309**
IDU PIC version: 25
IDU Modem version: 42
ODU FW version: **1E (all model)**

Changes and Enhancements
1.   Frequency support for 15E 1A/B, 2 A/B
2.   New CLI, ibm ip <ip> <netmask>, ibm netmask added in config export/import/diagnostic
3.   New SNMP OIDs: Sys Diagnostic fix, Sys Diagnostic Status, gige IBM Netmask
4.   Web interface: Fixed ODU model display for ETSI models, remove frequency duplex from setting page.

Software Version 2.4.0

IDU FPGA version: **00220409**
IDU OS version: **2p6r14b3D05100901**
IDU FW version: **2p4r0D051009**
IDU PIC version: 25
IDU Modem version: 42
ODU FW version: **1C (all model)**

Changes and Enhancements
1.   Support for 15E.
2.   New CLI – tdm clock window high/mid/low
3.   New SNMP OIDs
4.   Web Interface
5.   Rate shift up feature
6.   RPS port up.
7.   Log min/max rssi in syslog.
8.   Diagnostic enhancement.

Software Version 2.3.9

IDU FPGA version: **00261008**
IDU OS version: **2p6r14b3D02040901**
IDU FW version: **2p3r9D020409**
IDU PIC version: **25**
IDU Modem version: 42
ODU FW version: **1A (all model)**

Changes and Enhancements
1.   Support for 18E, 23E and 11E.

2. New CLI: syslog export, show history, prompt, diagnostic, syslog
3. New SNMP OID: Pre PIC, Pre Modem, License Enable, Reset Default IP, Image Upgrade Status
4. Web Interface
    a. Setting for Internet Explorer
    b. Password validation
    c. Ingress rate setting
    d. Grey circle for n/a status.
5. Fix ATPC max power against modulation for ETSI.
6. Validate downshift speed range against current speed & frequency.
7. Display "rps-off" after data port were shutdown because of RPS.
8. AGC adjusting the expected rx attenuation at one AGC loop 1 dB step.
9. Display 99 in ODULED with the RSSI value is not within the valid range.
10. Speed bandwidth update to 56/80 in application for ETSI.
11. Add passwd to the help list under debug prompt.
12. Improved downspeed feature to automatically downshift in new link after power cycle.

Software Version 2.3.7

IDU FPGA version:	**01080908**
IDU OS version:	**2p6r14b3D09190801**
IDU FW version:	**2p3r7D091908**
IDU PIC version:	24
IDU Modem version:	42
ODU FW version:	0B (18 Ghz)
ODU FW version:	0F (6/11 Ghz)
ODU FW version:	17 (23 Ghz)

Changes and Enhancements
1. Improved link restoration after link failure due to power outage/ fades
2. FPGA fix for lower throughput in one direction.

Software Version 2.3.6

IDU FPGA version:	**00080708**
IDU OS version:	**2p6r14b3D08290801**
IDU FW version:	**2p3r6D082908**
IDU PIC version:	24
IDU Modem version:	42
ODU FW version:	0B (18 Ghz)
ODU FW version:	0F (6/11 Ghz)
ODU FW version:	17 (23 Ghz)

Changes and Enhancements
a. SNMP Enhancements for graphing system parameters (MIBS Updated)
b. Support for 23Ghz (Note: ODU rx agc loop now runs in the ODU. the IDU CLI has no impact, RSSI values is based on real HW detector and should be more accurate now)
2. New CLI: telnetd, smart_mode
3. 1+1 stability enhancement
4. Default vlan id changed to 100 (from 1)
5. IBM Ethernet interface disabled when IBM is turned off.
6. Improved Odupower ON sequence during initial boot.

Software Version 2.3.0

IDU FPGA version:	**00080508**
IDU OS version:	**2p6r14b3D05090801**
IDU FW version:	**2p3r0D05090801**
IDU PIC version:	**24**
IDU Modem version:	42
ODU FW version:	0B (18Ghz)

Changes and Enhancements

1. SNMP Enhancements for graphing system parameters (MIBS Updated)
2. Improved T1/E1 clock sync (better than +/- 10ppm, T1 standard spec is +/- 100ppm)
3. Improved system stability (Modem Interrupt De-bouncing and improvised event handler)
4. System Reboot support from debug node (tg_reboot)
5. Syslog access from debug node (syslog)
6. No debug node access from view node (security feature)
7. Boot image upgrade progress indicator via dots
8. 11Ghz Band2 unit support (11-2A and 11-2B models)

Software Version 2.2.2

IDU FPGA version:	01050308
IDU OS version:	**2p6r14b3D03170801**
IDU FW version:	**2p2r2D03170801**
IDU PIC version:	**23**
IDU Modem version:	42
ODU FW version:	0B
ODU FW version:	0F (6Ghz)

Changes and Enhancements

1. Fix for image upgrade.

Software Version 2.2.0

IDU FPGA version:	**01050308**
IDU OS version:	**2p6r14b3D03070803**
IDU FW version:	**2p2r0D03070803**
IDU PIC version:	**23**
IDU Modem version:	42
ODU FW version:	0B
ODU FW version:	0F (6Ghz)

Changes and Enhancements

1. 1+1 Updates and fixes
2. TDM ports also disabled in RPS and on Standby units
3. TDM Port 2 fix (no BER)
4. Updated Ethernet Switch settings, (From v2.1.2)
    a. Disabled Broadcast Suppression,
    b. Disabled loopback detection on the GigE ports

Software Version 2.1.2

IDU FPGA version: 01110208
IDU OS version: 2p6r14b3D02180801
IDU FW version: **2p1r2D03030801**
IDU PIC version: 18
IDU Modem version: 42
ODU FW version: 0B (18Ghz)
ODU FW version: 0F (6Ghz)

Changes and Enhancements
    1. Updated Ethernet Switch settings,
        a. Disabled Broadcast Suppression,
        b. Disabled loopback detection on the GigE ports

Software Version 2.1.0

IDU FPGA version: **01110208**
IDU OS version: **2p6r14b3D02180801**
IDU FW version: **2p1r1D02180801**
IDU PIC version: 18
IDU Modem version: **42**
ODU FW version: **0B (18Ghz)**
ODU FW version: **0F (6Ghz)**

Changes and Enhancements
    1. Improved Speed command
    2. Alignment Mode Fix
    3. Improved System logging
    4. No cap on power setting. User is responsible for entering the right value based on the datasheet.
    5. Ethernet Auto Negotiation ON/OFF added
    6. IBM default set to OFF and default IP 172.16.1.1
    7. Standby Command Changes
    8. Remark Command fixed
    9. Improved Threshold monitoring

Software Version 2

IDU FPGA version: 02100108
IDU OS version: **2p6r14b3D01100801**
IDU FW version: **2p0r1D01110801**
IDU PIC version: **181**
IDU Modem version: 40
ODU FW version: 07

Changes and Enhancements
    1. 1+1 Redundancy support.
    2. In Band Management through GigE1 port
    3. TrangoLINK Giga 6 Support
    4. Export/Import of configuration file through tftp.
    5. E1 Support and user selectable line coding AMI, B8ZS, HDB3

6.   Secondary Trap Manager Support
7.   Port Utilization for RF Link
8.   Rapid Port Shutdown when link is lost
9.   CoS Support for 4 Queues
10. Web Interface Settings Error messages
11. Improved Bootup time (around 60sec as compare to 90+sec before)
12. Mode Button Support: User can hold the mode button for 3sec to reset to factory defaults.

Software Version 1.2

IDU FPGA version:	02080907
IDU OS version:	**2p6r14b3D11160701**
IDU FW version:	**1p2r1D11160701**
IDU PIC version:	11
IDU Modem version:	40
ODU FW version:	07

Changes and Enhancements
1.   Web Interface enhancement for Ethernet Settings. The setting affects only the modified ports. Earlier all ports were reconfigured, even if the settings were not changed.
2.   GigE port setting problem of no traffic flowing through fixed
3.   Power setting problem fixed. Power 0dB now works fine.
4.   All the internal "show" commands have been disabled for normal users
5.   Enhancements for engineering commands like fskfifo/idu fsk read/write and internal retries.
6.   odupower command has additional delay of about 2sec to avoid putting the ODU in bootloader mode.

Software Version 1.1

IDU FW:	**1p0r1D10190701**
IDU OS:	**2p6r14b3D10190701**
IDU FPGA:	**02080907**
IDU PIC:	11
IDU_MODEM:	40
ODU_FW:	7

Changes and Enhancements
1.   Web Interface enhancements.
2.   License Key status view added to CLI
3.   ODU RSSI Led can now be powered off
4.   Base Package enhanced and now supports speed up to 107Mbps (QAM32/30Mhz Channel)
5.   Alignment Mode: ATPC and ODU Rx AGC automatically turned off during the alignment
6.   IDU Modem enhancements for better performance (improved SNR)
7.   IDU fans now operate at full speed.

Software Version 1

IDU FW:	1p0r1D09120701
IDU OS:	2p6r14b3D09120701
IDU FPGA:	02080907
IDU PIC:	3

IDU_MODEM :   40
ODU_FW: 7

Changes and Enhancements
 1. GigE ports supports configurable Speed, Duplex, Rate limiting and Jumbo packets
 2. ATPC / Odu Receive Gain Control
 3. CLI access via Serial Console/SSH/Telnet
 4. SNMPv2 support (Trango MIBS)
 5. Web Access supports both secure (HTTPS) and regular (HTTP)
 6. Rate Shifting
 7. Full support for 4port GigE and 8 T1E1 ports
 8. Performance around 617Mbps aggregate with extremely low latency (< 150us)