



TrangoLINK ApexPlus

Software v2.0.0 Release Notes & Upgrade Instructions

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TrangoLINK ApexPlus v2.0 Release

The release consists of the following software images

FPGA version: **0116050B**
 OS version **2p6r22b0D092711**
 FW version **2p0r0D092711**
 PIC version 14
 Modem Version 1
 HP ODU FW version 150410
 HP1 ODU FW version 060211
 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. Support for HP1 ODUs. Previously HP ODUs were identified as HP1, which is a new series of ODUs.
2. Special band mapping for HP2 11/15/23 bands for proper model number reporting.
3. Detect the status of the SFP module to indicate if plugged in or not. The system cannot detect if a cable is connected to the SFP module, only if the module is present or not.
4. 1+1 HSB Keepalive message for switchover in the event of active unit power failure or reboot.
5. Complete T1/E1 support for all speeds.
6. 1+1 HSB Keepalive message now contains protection status to enable hardware switchover and prevent standby vs. standby case.

7. Siglevel addition of GFP drop counters. Counters are accumulative and cleared with status clear.
8. Egress rate setting from internal switchport to modem for improved QoS handling based on the current speed's throughput. Egress margin setting allows the user to fine tune the rate for smaller packets or stricter QoS queue priority. Also improves some speed test results due to buffer control.
9. 1+1 HSB Keep-alive message will monitor switchover condition.
10. Loopback options updated to reflect hardware features available (rf_gen and rf_refl removed).

Bug fixes

1. Bandwidth setting for HP ODU was not done in the proper order during power up sequence and is now fixed.
2. If an existing guard time is in place, don't start a new conflicting guard time.
3. Observe default_opmode setting during a hardware switchover. If default_opmode is set to off, 1+1 HSB/failover will not enable opmode. Both radios should be configured with default_opmode on.

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.

Software Image Upgrade Procedure from v1.x to v2.0.0

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 OMU will be copied to flash during image upgrade (bootimage upgrade omu) 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.

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 ApexPlus 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 ApexPlus 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. Plan to use the file directly from Trango's FTP server or copy it to your own local FTP server. We recommend verifying the file name and path to ensure that nothing has changed since this document was prepared.
2. Note down 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 ApexPlus, 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 ApexPlus Command Line Interface v1.0.0

(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-ApexPlus/omu_ApexPlus_v2.0.tar.gz
#

Get operation successful with passive mode

9. Logout of the ftp session

ftp> logout

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

(CLI-config)# bootimage upgrade omu

.....

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

FPGA version:	0116050B
OS version	2p6r22b0D092711
FW version	2p0r0D092711
PIC version	14
Modem Version	1
HP ODU FW version	150410
HP1 ODU FW version	060211
HP2 ODU FW version	142

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 OMUs 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.**

ApexPlus Software Change History

Software Version 1.1.2

FPGA version:	0010030B
OS version	2p6r22b0D050511
FW version	1p1r2D051111
PIC version	14
Modem Version	1
HP1 ODU FW version	150410
HP2 ODU FW version	142

New Features

1. IP address format validation for web interface.
2. Factory_default command to reset to default configuration from debug prompt.
Requires use of tg_reboot afterwards.

Bug fixes

1. SNMP IP Address format for type A instead of string for wider snmp manager support.
2. Tg__reboot command enabled from debug node.

Software Version 1.1.1

FPGA version:	0010030B
OS version	2p6r22b0D050411
FW version	1p1r1D050411
PIC version	14
Modem Version	1
HP1 ODU FW version	150410
HP2 ODU FW version	142

New Features

1. T1 Support added for bandwidth 30 modulation qam32.
2. CLI commands datapath, tdm and status tdm.

Bug fixes

1. Slow memory leak left from original software debugging.
2. SNMP: The IpAddr format is changed to IpAddress for greater compatibility with SNMP managers.

Software Version 1.1.0

FPGA version:	0010030B
OS version	2p6r22b0D040411
FW version	1p1r0D040411
PIC version	14
Modem Version	1
ODU FW Version [HP1]	150410
ODU FW Version [HP2]	142

Bug Fixes

1. Numerous web interface settings, including the initial command from the web would timeout causing problems for future commands at times.
2. Speed setting validation.
3. Packet counters updated for traffic over 1518 bytes.
4. Remove alignment mode as it is only applicable to SP ODU which is not supported in ApexPlus.

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.

Software Version 1.0

FPGA version:	0010030B
OS version	2p6r22b0D031411
FW version	1p0r0D031411
PIC version	14
Modem Version	1
ODU FW Version [HP1]	150410
ODU FW Version [HP2]	33

Key Features

1. 3.5Mhz – 56Mhz channel bandwidth, FCC and ETSI compliant
2. Supported frequency 6-38 GHz HP1 ODU and 6-38 HP2 ODU
3. 1+1 Monitored Hot Standby support
4. Hitless Adaptive Modulation for all modulations except QPSK
5. Native Ethernet Support
6. Packet QoS based on 802.1p
7. GigE ports supports configurable Speed, Duplex, Rate limiting and Jumbo packets
8. Rapid Port Shutdown
9. ATPC
10. CLI access via Serial Console/SSH/Telnet
11. SNMPv2 support (Trango MIBS)
12. Web Access supports both secure (HTTPS) and regular (HTTP)

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13. Threshold Monitoring
14. In Band Management
15. Dual Image Upgrade Support
16. Reliable image transfer using FTP, also support TFTP

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. In 1+1 mode the system doesn't support automatic detection of partner OMU loss, but the link will still switchover due to loss of RF link.
WA: If power cycling Standby unit, no action required. If power cycling Active unit, issue a manual switchover command on the Active before power cycle and Standby will take over, Alternate way is to issue reboot command on the OMU to be power-cycled and the SW will initiate the switch-over
3. Rf gen/rf refl loopback not supported in this release
WA: Use IF loopback for debugging
4. Adding new unit to 1+0 system to make it 1+1 and license key setting from web interface might not work reliably
WA: Use the CLI interface