Release Bulletin

Document No.:	RB-250325-02
Date:	March 25, 2025
Classification:	External
Attn:	All OneWeb Customers
Related Products:	OW70L (SSMv2), OW70L (P-P), OW50SL, OW130L, OW50M, OW70M
Subject:	**OneWeb User Terminals Software Release Bulletin (2.0.6.1)**

Dear valued customers,

Intellian has released new software for the Intellian User Terminals which has the SSMv2.
This release bulletin includes the software changes and instructions in order to upgrade the UT to the newly released software. Please read the document carefully to avoid software installation errors and to prevent an inoperable state of the UT. If the UT can go online and is accessible on OneWeb Device Hub, please use Device Hub to install the new software bundle on the UT. Otherwise, to install the software locally, access to the Local User Interface (LUI) via the Customer Network Exchange (CNX) is required. The LUI is accessed via a web browser on a computer running Windows, Linux, or MacOS.

Please apply this software to models in the table below.

No.	Model Name	Model Number
1	OW70L (SSMv2)	PS-OW70P-S2 (consist of PS-OW70P(P)-S2, PS-OW70P(S)-S2) PS-OW70P-S2H (consist of PS-OW70P(P)-S2H, PS-OW70P(S)-S2H)
2	OW70L (P-P)	PS-OW70P (consist of 2x PS-OW70PP) PS-OW70P-H (consist of 2x PS-OW70PP-H)
3	OW50SL	PS-OW50SP-S2 PS-OW50SP-S2H
4	OW130L	PS-OW130P-S2 (consist of PS-OW130P(P)-S2, PS-OW130P(S)-S2) PS-OW130P-S2H (consist of PS-OW130P(P)-S2H, PS-OW130P(S)-S2H)
5	OW50M	OS-OW50P (consist of 2x OS-OW50PP) OS-OW50P-H (consist of 2x OS-OW50PP-H)
6	OW70M	OS-OW70P (consist of 2x OS-OW70PP) OS-OW70P-H (consist of 2x OS-OW70PP-H)

1 Software Release Summary

1.1 Software Release Detail

Table 1.1 Software Bundle

S/W Bundle File Name	EGR Effectivity	Release Version
OW_AMSA_2.0.6.1_JL_0.74_AIM_1.6.52.1_CNX_0.2.10_MDM_4.1.3_MIM_0.0.0.00_SSMv2_6.1.35_SSM_BSP_6.1.10.tar	J/L EGR UT	2.0.6.1
OW_AMSA_2.0.6.1_TR_1.0.0_AIM_1.6.52.1_CNX_0.2.10_MDM_4.1.3_MIM_0.0.0.00_SSMv2_6.1.35_SSM_BSP_6.1.10.tar	Trimble EGR UT	

Table 1.2 Specific versions of components

UT Component	Software Version	LUI Version Display
Antenna Interface Module (AIM)	1.6.52.1	Antenna>Software Version

SSM BSP	6.1.10	Diagnostics>UT Status>Current Linux BSP Version
SSM Application	6.1.35	Diagnostics>UT Status>SSM Software Version (main)
External GNSS Receiver (EGR), Jackson Lab	0.74	Modem>GNSS Stats
External GNSS Receiver (EGR), Trimble	1.00.00	Modem>GNSS Stats
Modem	4.1.3	Modem>Modem Info

1.2 Software Changes

Table 1.3 Software Change List

Item	Description	Component
PCU update failure during bundle update	PCU update failure during the bundle update process has been resolved.	AIM
CNX info retrieval bug	Fixed a bug in retrieving the CNX info	SSM
TWAMP (Two-Way Active Measurement Protocol)	Monitors TWAMP process health and relaunches it if needed.	
	Default relaunch interval is 15 seconds, but it can be adjusted.	
Modem resets/crashes	Create /data/misc/ipa at startup to avoid potential Modem crashes	
	Some recovery mechanism is added on SSM	
Discrepancy in event logs	Resolves an issue where inconsistent data appeared in event logs after repeated clearing.	
Performance improvements	Reduces message delay from the modem to the antenna.	
LUI	Corrected the validation issue where IPv4 addresses containing 255 were incorrectly rejected. Bundle version number is displayed in the LUI	
	Provides more detailed information on the original message that caused an Unknown (antenna fault) error.	
DH (Device Hub)	Sends UCR to Device Hub even if not all components are up, including when MoCA or CNX remain down.	
	Resolves a piecemeal update issue that occurred when the UMR file was pushed from Device Hub, but the manifest file did not include the UT_MOBILITY_RESTRICTIONS component, specifically when the UT_MOBILITY_RESTRICTIONS file was pushed for the first time.	
UT configuration updates	Reboots the UT automatically whenever a network configuration	
Large bundle upgrade support	To handle large bundle sizes, the bundle untar process is now performed in a separate thread, preventing sysmon from incorrectly restarting SDL, which could lead to bundle upgrade failures.	
SIB-4/SIB-E	Improved decoding of SIB-4 and optimized WS and WSC procedures. Modified the Track Advisory Request to utilize SIB-4 information. Modem will no longer experience RLF (Radio Link Failure) when SIB-E is missed.	MDM
Modem Crash	Resolves crashes during ADC calibration at runtime caused by back-to-back reconfigurations with the same Sat ID. Fixes internal QMI delays when the modem remains in Warm Start for extended periods. Addresses race conditions during multiple cancel track events with dual parabolic UTs. Resolves crashes when serving user traffic with small PDU sizes (e.g., PDU size ≤ 100 bytes).	

	Fixes race condition while reading SIB2 and SIB-E. Addresses race condition between upper and lower layers (Firmware) during RLF (Radio Link Failure). Corrects high TLAG value of 397 when experiencing back-to-back RLFs (RLF rate of 1 per second). Fixes internal delays in get satellite list request. Resolves issues during PDSCH transport block decoding using 16QAM. Fixes issues during the Cold Start Procedure and ping-T functionality for TSONLY mode.	
Full Duplex mode	In Full Duplex mode, the modem keeps the Ku PA TX signal enabled for 100µs beyond the TX subframe.	
Cold start procedure	Modem now reports SINR measurements to the antenna during the cold start process. If the host processor has not enabled a cold start, the modem will proceed with a warm start, using any available ephemeris file, even if the entries are not current (epoch time within 91 days).	
TX power computation	Resolved invalid TX power computation caused by missing RX gains during Warm Start or handover scenarios.	
Enhancements	Enhancement to handle a UT modem crash during cancel track message during Warm Start of a Dual Parabolic UT, to handle corner conditions when initiating track advisory request	
	Enhancement to avoid radio link failure when SIB2 UL EARFCN coincides with feeder or service link handovers, to clear stale tracks after RLF, to validate the Satellite ID (e.g. validate sat ID is not 0) in rrcReconfiguration message, to handle track advisory response with ETA in the past	
	Enhancement to limit the max WTR power when received Tx gains are low, to validate that Rx/Tx gains provided are within the limits defined in 80-HB222-1, to reduce internal CPU loading	
	Logging enhancement to debug ephemeris related issues in the modem local database, Support Variable Max Tx EIRP, detects UT mobility for a UT configured as stationary	
Gain updates	The UT modem stops using antenna-provided gain values upon gain indication timer expiry, until the handover activation time.	

1.3 Known Issues

1. OWIT-1269 Bundle update may hang until a reboot
   A. If the UT is running an earlier SW with the OWIT-1269 problem, the upgrade process may hang indefinitely until a reboot. To avoid this, Device Hub will check the SW running on UT and offer an intermediate bundle to fix OWIT-1269. Please apply the intermediate bundle followed by Bundle 2.0.5.3.
   B. Please refer to Section 2.2 Intermediate Bundles for details on upgrading the UT locally through LUI.

2 Updating Software Bundle

2.1 Loading the Ephemeris File

Loading the Ephemeris is only required if the User Terminal has not been online for over 30 days. In such cases, please follow the linked Ephemeris File Update Guide to load the latest Ephemeris file.

2.2 Determining Software Bundle Version Running on the UT

Depending on the software bundle version installed on the antenna, up to three bundle updates may be required. Please refer to the software bundle versions below and perform the software bundle update accordingly.

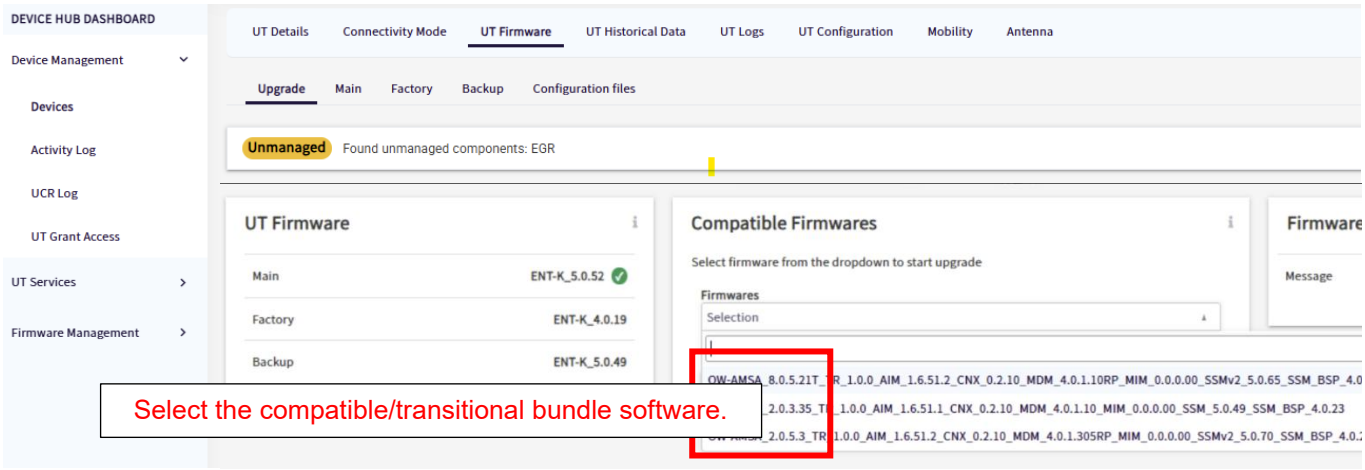
Table 1.4 Software Bundle Update Instruction

Software bundle version	Required Software Bundle update		
	1st Update	2nd Update	3rd Update
2.0.3.23 and older	2.0.3.35	8.0.5.32T	2.0.6.1
2.0.3.35	8.0.5.32T	2.0.6.1	-
2.0.5.3	2.0.6.1	-	-

2.3 Updating Software Bundles

Terminals in operational state should be upgraded over the air from Device Hub. A Software Bundle Update may take up to 30 minutes to complete.

The Device Hub dashboard allows you to select the appropriate bundle software based on the UT firmware version and proceed with the upgrade.



2.4 Local User Interface (LUI) Software Upgrade Instructions

It is recommended to use LUI for Software bundle updates solely for recovery purposes. If needed, please refer to the linked Instruction for Software update via LUI.

Please consult with Support before proceeding with a local upgrade.

Table 1.5 Transitional Bundle Information

Release Version	S/W Bundle File Name	EGR Effectivity
2.0.3.35	OW_AMSA_2.0.3.35_JL_0.74_AIM_1.6.51.1_CNX_0.2.10_MDM_4.0.1.10_MIM_0.0.0.00_SSM_5.0.49_SSM_BSP_4.0.23.tar	J/L EGR UT
	OW_AMSA_2.0.3.35_TR_1.0.0_AIM_1.6.51.1_CNX_0.2.10_MDM_4.0.1.10_MIM_0.0.0.00_SSM_5.0.49_SSM_BSP_4.0.23.tar	Trimble EGR UT
8.0.5.32T	OW_AMSA_8.0.5.32T_JL_0.74_AIM_1.6.52.1_CNX_0.2.10_MDM_4.0.1.10RP_MIM_0.0.0.00_SSMv2_5.0.89_SSM_BSP_4.0.24.tar	J/L EGR UT
	OW_AMSA_8.0.5.32T_TR_1.0.0_AIM_1.6.52.1_CNX_0.2.10_MDM_4.0.1.10RP_MIM_0.0.0.00_SSMv2_5.0.89_SSM_BSP_4.0.24.tar	Trimble EGR UT

Contact Information

If any issues or difficulties are encountered during this process, please submit a ticket to support@intelliantech.com for assistance.

Please contact the product management team (pm@intelliantech.com), if you have any questions or require any additional information regarding this document.

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Appendix. Revision History

Version	Component	Item	Description
2.0.6.1	AIM	PCU update failure during bundle update	PCU update failure during the bundle update process has been resolved.
	SSM	CNX info retrieval bug	Fixed a bug in retrieving the CNX info
		TWAMP (Two-Way Active Measurement Protocol)	Monitors TWAMP process health and relaunches it if needed.
			Default relaunch interval is 15 seconds, but it can be adjusted.
		Modem resets/crashes	Create /data/misc/ipa at startup to avoid potential Modem crashes
			Some recovery mechanism is added on SSM
		Discrepancy in event logs	Resolves an issue where inconsistent data appeared in event logs after repeated clearing.
		Performance improvements	Reduces message delay from the modem to the antenna.
		LUI	Corrected the validation issue where IPv4 addresses containing 255 were incorrectly rejected. Bundle version number is displayed in the LUI
			Provides more detailed information on the original message that caused an Unknown (antenna fault) error.
		DH (Device Hub)	Sends UCR to Device Hub even if not all components are up, including when MoCA or CNX remain down.
			Resolves a piecemeal update issue that occurred when the UMR file was pushed from Device Hub, but the manifest file did not include the UT_MOBILITY_RESTRICTIONS component, specifically when the UT_MOBILITY_RESTRICTIONS file was pushed for the first time.
		UT configuration updates	Reboots the UT automatically whenever a network configuration
		Large bundle upgrade support	To handle large bundle sizes, the bundle untar process is now performed in a separate thread, preventing sysmon from incorrectly restarting SDL, which could lead to bundle upgrade failures.
	MDM	SIB-4/SIB-E	Improved decoding of SIB-4 and optimized WS and WSC procedures. Modified the Track Advisory Request to utilize SIB-4 information. Modem will no longer experience RLF (Radio Link Failure) when SIB-E is missed.
		Modem Crash	Resolves crashes during ADC calibration at runtime caused by back-to-back reconfigurations with the same Sat ID. Fixes internal QMI delays when the modem remains in Warm Start for extended periods. Addresses race conditions during multiple cancel track events with dual parabolic UTs. Resolves crashes when serving user traffic with small PDU sizes (e.g., PDU size ≤ 100 bytes). Fixes race condition while reading SIB2 and SIB-E. Addresses race condition between upper and lower layers (Firmware) during RLF (Radio Link Failure). Corrects high TLAG value of 397 when experiencing back-to-back RLFs (RLF rate of 1 per second).

			Fixes internal delays in get satellite list request. Resolves issues during PDSCH transport block decoding using 16QAM. Fixes issues during the Cold Start Procedure and ping-T functionality for TSONLY mode.
		Full Duplex mode	In Full Duplex mode, the modem keeps the Ku PA TX signal enabled for 100µs beyond the TX subframe.
		Cold start procedure	Modem now reports SINR measurements to the antenna during the cold start process. If the host processor has not enabled a cold start, the modem will proceed with a warm start, using any available ephemeris file, even if the entries are not current (epoch time within 91 days).
		TX power computation	Resolved invalid TX power computation caused by missing RX gains during Warm Start or handover scenarios.
		Enhancements	Enhancement to handle a UT modem crash during cancel track message during Warm Start of a Dual Parabolic UT, to handle corner conditions when initiating track advisory request
			Enhancement to avoid radio link failure when SIB2 UL EARFCN coincides with feeder or service link handovers, to clear stale tracks after RLF, to validate the Satellite ID (e.g. validate sat ID is not 0) in rrcReconfiguration message, to handle track advisory response with ETA in the past
			Enhancement to limit the max WTR power when received Tx gains are low, to validate that Rx/Tx gains provided are within the limits defined in 80-HB222-1, to reduce internal CPU loading
			Logging enhancement to debug ephemeris related issues in the modem local database, Support Variable Max Tx EIRP, detects UT mobility for a UT configured as stationary
		Gain updates	The UT modem stops using antenna-provided gain values upon gain indication timer expiry, until the handover activation time.
2.0.5.3	AIM	Condition to discard Back-to-Back track advisories in single parabolic UTs.	Omit the track advisory request if the time difference between the last processed request and the activation time in the tune request is less than the TPNS value.
	SSM	Modem recovery	Fix for Unresponsive modem recovery. Do not reset modem when modem USB state is unknown. Modem Low Power Mode handling
		ARP Packet	P2P UTs send ARP packet to CPE With a Physical MAC Address Instead of the Virtual MAC Address
		Netdevice	Fix for unable to unregister Netdevice Recovery. Set the subnet mask for WAN/MGT Interface to /32
		SW upgrade	Fix for modem FW downgrade/upgrade hang issue. Modem Flash images procedure update
			Disregard incompatible SSM images. Allow local software bundle uploads without switching to factory
			Safeguard for LE.UM modem not being accessible after switching operating mode. Preamble to Flash Modem images before upgrading to LE.UM.UT component ignores rollback software updates
	MDM	IP traffic	Packet Statistics need to reflect IP traffic over the air.
		Modem crash	Fixes include modem crash during runtime ADC calibration and intermittent crashes in the presence of PDCP holes during handovers

		Sib4	Issue with Sib4 decode.
2.0.3.35	AIM	Protection against EL = 0	Protection added to handle invalid (0 degree) elevation in the track requests to avoid the motor damage.
		Homing issue for OW130L	Homing issue in OW130L due to sensor malfunction is handled.
		IMU sensor failure alarm	Severity is changed from major to minor as IMU sensor to avoid unnecessary soft resets from the SSM.
		Frozen limit ring enhancement	Additional fix for a corner case where limit switch does not reset
		Increased EIRP	Increased EIRP is set to true in capabilities and reports the "pmax_dB" values per single carrier for all the models.
		Fix for tracking issues	Fixed prolonged outages in single parabolic antennas, CL adjustment issue for PP models, and retrace error on the OW70L
	SSM	USP agent	Support for USP certificate is added
		SW update	Add timeout when executing adb commands for MDM upgrade.
			Allow local software bundle uploads without switching to the factory. Upgrade to MoCA FW v3.11.26
			Fixed SDL crashes when switching to factory partition due to extensions map.Bypass check for '.sig' file when no signature file is loaded
		API	Respond to http API Tx Mute request before disabling Tx.
		Device hub	UT merged the restrictions zone from different files pushed dynamically from the device hub
		Mobility regulatory	Support for mobility regulatory compliance
		Faults	Filter minor and moderate AIM faults towards modem
		2K MTU support	Support for 2K MTU is added.
		DHCP	Configurable lease interval per customer subnet.
			WAN modes enhancements: Customer subnets extension and DHCP enable/disable
		Routed mode	Support for routed mode is added
2.0.3.23	AIM	Blockage Predictions	Coordinates in track request are considered in the blockage predictions. Fixed overlapped prediction for Maritime/P-P model which can occur when heading changes during 5 second track message interval and TX mute is enabled
		Handover parameter in dual parabolic models	Handover parameter under LUI->Antenna->Antenna Setup page is considered for both TN and extended TN calibration
		Tracking issues in maritime models.	Fixed an issue that is causing the antenna not to enter into tracking mode after self-recovery is fixed.
		Vibration	Wind vibration recovery enhancement

		Tracking performance	Enhanced the BFS offset correlation table for OW50SL tracking performance.
		Wrong partition selection	Fixed the issue that is causing the AIM to select the wrong partition.
2.0.3.21	AIM	Axis limits	Axis limits are changed for OW50SL, OW50M and OW70M models.
		AIM crash and hard reset	Synchronization issue that is causing the AIM crash and hard reset due to kernel hang issues are fixed
		UT capability	is_increased_eirp_capable is set to true in UT capability for OW130L model
		TN calibration completion criteria	Complete the TN calibration if the signal is stable for more than 3s even though the UT is not provisioned.
		Stabilizer performance enhancement	Stabilizer is optimized to increase the performance in maritime models.
		Home sensor calibration	Home sensor calibration is improved for maritime models.
		Blockage mitigation	Keyline ON/OFF, prediction at 0 degrees and timestamp issues are fixed.
			Reject the configuration request with invalid antenna ID.
		Cosmetic changes in LUI	Additional parameters are added in the antenna status and antenna setup pages, Default values are changed.
		Mispoint alarm	Mispoint alarm detection algorithm is enhanced to provide faster recovery.
		OW50SL tracking and HO issue	Inter-plane H/O and target AZ adjustment during HO issues are fixed.
	SSM	Memory Leak and AMU crash	Memory leak at the ipcrtr device close and AMU crash if no MGT APN is present in the port forwarding configuration are fixed
		Firewall rule	P-P peer message not received because of missing firewall rule
		MAC address	Set the target MAC address to broadcast in the Gratuitous ARP
		Inter satellite outage	Adjust inter satellite outage time with same offset as TPNS for Primary-Primary
		Port Forwarding	Issue with missing rules if more than 32 rules are configured is fixed and improved the rule check.