Release Bulletin

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Date:	May 12, 2026
Classification:	External
Attention:	All OneWeb Customers
Related Products:	HL1120W, HL1100W
Subject:	**HL-Fixed-3.0.47 Release bulletin**

1 Introduction

This release bulletin pertains to the software release bundle HL-Fixed-3.0.47 for Hughes® Low Earth Orbit (LEO) Electronic Steering Antenna models *HL1120W* and *HL1100W*, which is collectively referred to as *HL-Fixed,* developed by Hughes Network Systems (Hughes).

Release	Model Type	Model Number
HL-Fixed-3.0.47	HL-Fixed	HL1120W, HL1100W

Section **1.1** provides an overview of the HL1120W and HL1100W User Terminals (UTs). Section **2** lists the software packages that are included in this bundle, while Sections 0 and 5 describe the software changes and known issues.

Hughes and OneWeb have approved this release for use with HL1120W and HL1100W UTs operating on the OneWeb network. Units can be upgraded using the procedures listed in Section **7**:

- **Online:** Use the OneWeb Device Hub to install the latest bundle.
- **Offline:** Use the Hughes LEO Mobile App or Local User Interface (LUI), as described in the UT Installation Guide (1043630).

1.1 UT Overview (HL1100W and HL1120W)

The HL1100W and HL1120W are UTs with Wi-Fi support for fixed installations. User equipment connects to the UT via Gigabit Ethernet (GigE) or Wi-Fi through the indoor equipment. Each UT connects to the OneWeb LEO satellites using a tracking antenna and provides a user gateway to the OneWeb Ground Network (GN). User traffic is then routed to the Core Network (CN) to provide Internet access. The OneWeb Device Hub provides specific UT management functions.

1.1.1 System Composition

Each UT consists of three Field Replaceable Units:

- Outdoor Unit (ODU)
- Indoor Unit (IDU)
- Power Supply Unit (PSU)

The ODU is mounted outdoors, while the IDU and PSU are installed indoors. **Figure 1** shows the fully assembled UTs.

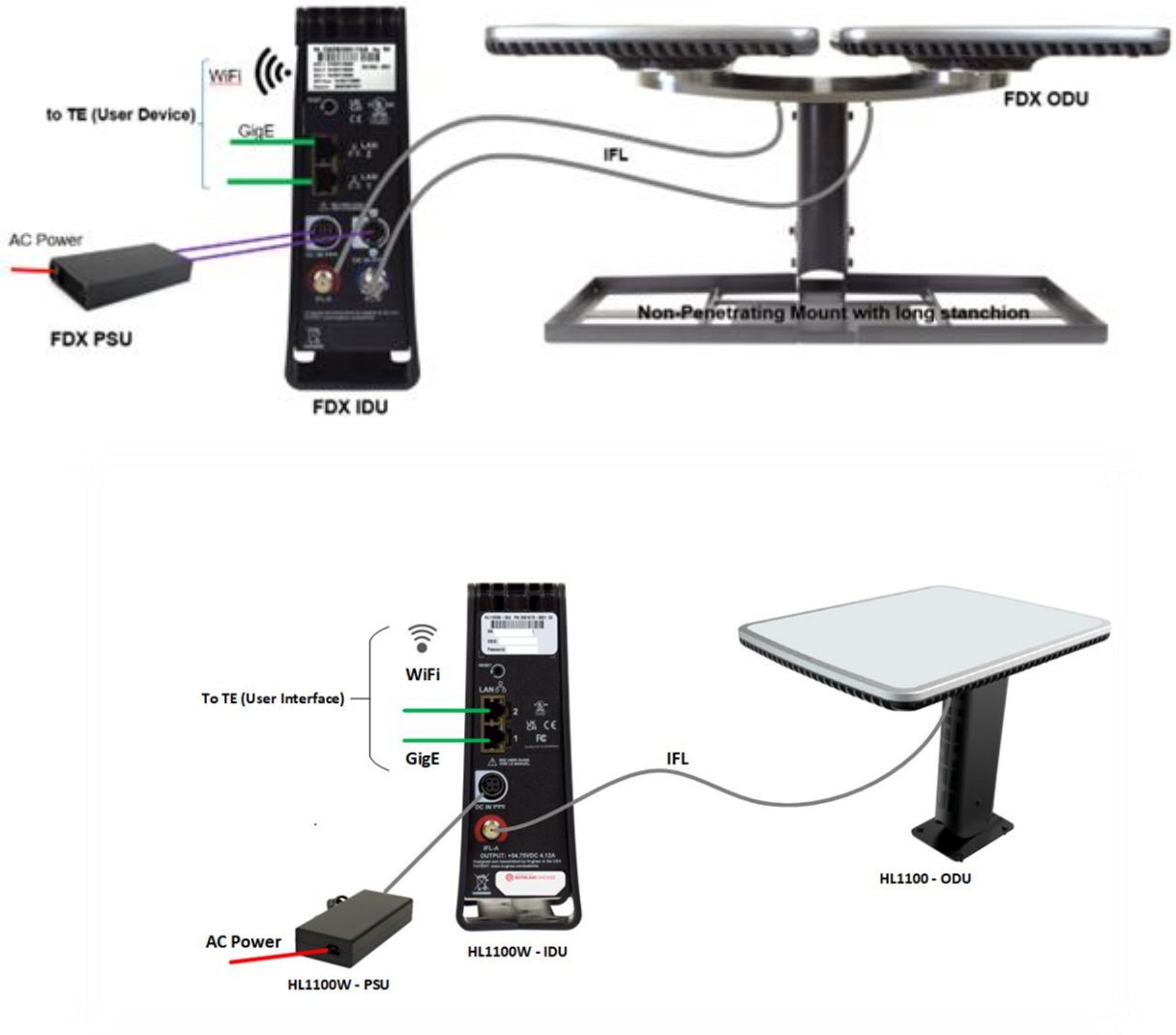


Figure 1. HL1120W and HL1100W User Terminal

- Outdoor Equipment:
  - ODUs are electronically steerable antenna assemblies comprising a Common Control Module (CCM), Radio Frequency Conversion Module (RCM), and a Beam Former Array (BFA). The CCM hosts the UT software for control, management, and network services and includes the satellite modem that communicates with the OneWeb ground network via Receive and Transmit (Rx/Tx) tracking antennas.
- Indoor Equipment:
  - IDUs host a Wi-Fi Router that provides two GigE ports and Wi-Fi access to the user data network. The Wi-Fi Router also provides access to the UT's local management interface.
  - PSUs are an Alternating Current/Direct Current (AC/DC) power supply providing DC power to the IDU and ODU. A load-sensing circuit prevents the UT from powering on until the IDU and ODU are connected via IFL cabling.
  - IDUs connect to ODUs via Intra-Facility Link (IFL) cabling. The arrangement is model-dependent (see differences below).

- Model-Specific Differences

Table 1. HL1100W and HL1120W Differences

Category	HL1100W	HL1120W
Antenna and Duplex	ESA/HDX: single electronically steered panel that seamlessly switches between Rx/Tx paths	FDX: two electronically steered panels: FDX-A (Rx) and FDX-B (Tx)
ODU Modules	The panel includes CCM, RCM, and BFA; CCM hosts the UT control software and the satellite modem.	Each panel includes a CCM, RCM, and BFA; CCM-A (on the FDX-A panel) hosts the UT control software and satellite modem.
IFL Cabling	Single IFL connecting the IDU to the ODU	Dual IFLs: IFL-A carries DC power and data between IDU's Wi-Fi Router and CCM-A, IFL-B carries DC power only

1.2 Hughes LEO App

The HL1120W UT and HL1100W have a companion installer app (Hughes LEO app) that can be used on smartphones to aid in commissioning, local software upgrades, and status checks of the UT. Refer to the UT Installation Guide (1043630) for more details.

2 Release Software

Table 2 and **Table 3** list the software release files that are part of this delivery.

Table 2. R3.0.47 Software Bundle File

Software Bundle File Name	Version	Notes
HL-Fixed_3.0.47_CCM_6.15.94_CCM_BSP_6.15.24_MDM_4.1.3_EGR_2.20_CNX_1.01.67.tar.gz	**R3.0.47**	

Table 3. R3.0.47 Software Packages in Software Bundle

UT Component	Version	Notes
CCM BSP	6.15.24	
CCM APPS	6.15.94	Includes AIM/ARC functions
MDM	4.1.3	
OGR (GNSS Receiver)	2.20	
IDU (CNX-H)	1.01.67	

3 Release Summary

This release is used for HL1120W and HL1100W UT-type approval. It supports all features listed in the HL1120W Hughes LEO Terminal Data Sheet (H69698) and the HL1100W Hughes LEO Terminal Data Sheet (H69697).

3.1 Bug Fixes

The release R3.0.47 includes the fixes and enhancements that are listed in

Item	Description	Component
Enhancement	APN configuration should not allow OAM APN to be used as user network	CCM
Major	The SSM shall ensure that only root user can access the OAM network	CCM
Moderate	Reduce excessive eMMC read operations	CCM
Minor	Addressed edge case where UTs are getting bricked as LUI displays wrong message to reboot the UT whereas the FPGA is upgrading is background	CCM
Minor	Prevents unnecessary CNX port flapping by skipping port reset during WAN attach avoiding port bounce	CCM
Enhancement	Resolves /misc/download cleanup conflicts during local bundle upgrades	
Moderate	Enhancement in SDL busy timer logic to allow successful FPGA/CPLD upgrade or downgrade.	CCM
Minor	Fix incorrect “ConnType”	IDU
Minor	Fixes incorrect MAC reporting caused by invalid characters in IDU API responses	IDU
Enhancement	CCM report Host Processor & Event Logs should report in UTC Time	CCM
Enhancement	Enhances diagnostics with PMAX/EPFD logging and temperature data in state codes, and fixes PPS errors under extreme thermal conditions	CCM
Enhancement	• Prevents rollback to expired main software when revert partition uses a different modem type • Ensures automatic reboot if BSP update fails • Adds safe mount handling for BSP updates to improve update reliability • Improves robustness by handling umount and mkfs.ext4 failures in both SDL and BSP application launch flows	CCM
Enhancement	Remove wireless nodes that are inactive for one minute. The original value was 5 minutes.	IDU

Table 4. R3.0.47 Bug Fix List

4 Hardware and Software Dependencies

4.1 UT Release Dependencies

1. The R1.0.21 release is being loaded on all newly built UTs at the Hughes factory. Both */factory* and */main* partitions of the FDX-A and FDX-B sides have been upgraded to R1.0.21.
2. All the UTs that were delivered earlier (may have R1.0.5 or R1.0.8) need to be sent back to the Hughes factory for the hydrophobic coating application and software upgrades to R1.0.21 (both */factory* and */main*) on both FDX-A and FDX-B sides.
3. R3.0.47 can be directly upgraded on UTs that are running release R3.0.x, R1.0.60.4A (FDX), R1.0.62 (HDX) or higher. Follow the instructions listed in Section **7** for upgrades of FDX UT to 3.0.47 based on the current software version running on the UT.

4.2 Hughes LEO App

Table 5 lists the Hughes LEO app software releases that have been verified as compatible with the R3.0.47 UT software release.

Table 5. Compatible Hughes LEO App Release Versions

UT Component	Version
Hughes LEO App for iOS	2.00.14 Rev 04
Hughes LEO App for Android	2.00.14 Rev 07

5 Known Issues

1. Firmware upgrades on UTs with a non-default ODU Internet Protocol (IP) address configuration require additional steps. Please refer to Appendix Section **8.1**
2. Do not perform a Local LUI Bundle Update while the UT is connected to the device HUB. For any Local LUI updates, first consult ETLOW support or ensure that the UT is offline.

6 Operational Considerations

1. Multiple User Access Point Names (APNs) are disabled by default. Coordinate with OneWeb Support to use multiple user APNs and routed modes.
2. If LUI login authentication is required, coordinate with OneWeb Support or Hughes Support.
3. The Low Minimum Elevation Angle (MEA) event 'QMI_OW_EXT_MODEM_BELOW_MEA_TRACK' is generated by the Qualcomm modem when it computes an elevation angle that falls below the minimum elevation angle threshold as defined by OneWeb and configured by the SSM software. It has no impact to the service.

7 Installation/Upgrade

The HL1120W UT is factory-loaded with the baseline software bundle HL-Fixed-1.0.21 and the HL1100W UT is factory-loaded with HL-Fixed-1.0.62. Both the factory and main partitions are programmed with their respective baseline bundles during production.

- The UT software including CCM, MDM (FDX-A), and IDU (CNX-H) is field upgradeable.
- To determine the software or the hardware revisions of the UTs, please refer to Section **8.2**.

7.1 Software Installation/Upgrade Methods

Two methods available to update HL1120W UT or HL1100W UT to this software release are:

- Recommended normal procedure for upgrade via Device Hub (Section **7.1.1**)
- Local upgrade using the UT's Local User Interface (LUI) (Section **7.1.2**)

7.1.1 Preferred UT Software Bundle Upgrade from the Device Hub

The Device Hub allows new software bundles to be uploaded to its platform and approved for use in upgrading UTs. Then the Device Hub allows the upgrade of an approved UT software bundle on a UT. When the UT is online, the Device Hub will interact with the UT via a new release notification API call for UT to download the new bundle from the Device Hub and initiate an upgrade after a configurable timer expiry.

Additionally, when UTs send a UCR message to the Device Hub (e.g., after restart), the Device Hub will then send a UCM message, which will trigger the given UT to download the new bundle from the Device Hub and initiate an upgrade after a configurable timer expiry.

Coordinate with OneWeb Support for the procedure to upgrade HL1120W or HL1100W UTs from the Device Hub. Follow the software upgrade instructions listed in **Table 6**.

Table 6. Software Upgrade Instructions for R3.0.47.

Current UT release	Prerequisites and Checks	Intermediate Step(s)	Final Step	Notes
R1.0.21 or R1.0.36 or 1.0.48	UT must be online in the Device Hub	1. Upgrade to R1.0.60.1B 1. Check firmware: FPGA=ccm_fpga_5_0_39, BFA CPLD=bfa_cpld_5_0_7 (wait ~15–20 minutes if needed) 2. Upgrade to R1.0.60.4C (**FDX**) &1.0.62.1D (**HDX**)	Upgrade to R3.0.47 from the Device Hub	Firmware verification is mandatory before proceeding past R1.0.60.1B
R1.0.50 or R1.0.56 (FDX)	UT must be online in the Device Hub	Upgrade to R1.0.60.4C from the Device Hub; verify that the UT is online and shows R1.0.60.4C	Upgrade to R3.0.47 from the Device Hub	Hotfix step is required before the first upgrade (DH will take care)
FDX - R1.0.60.4A or higher; HDX - R1.0.62.1A or higher	UT must be online in the Device Hub	—	Direct upgrade to R3.0.47	Direct upgrade also allowed (per sec. 4.1)
R3.0.x (any 3.0.x version)	UT must be online in the Device Hub	—	Direct upgrade to R3.0.47	Direct upgrade also allowed (per sec. 4.1)

7.1.2 UT Software Bundle Upgrade using LUI

Note: Use this procedure only for troubleshooting. Keep the modem offline and ensure that the UT is not connected to the Device Hub. For upgrades, reach out to Hughes Support and complete the process through the LUI listed in **Table 7**.

Table 7. Troubleshooting Procedure

Current UT Release	Prerequisites and Prep	Steps (LUI)	Checkpoints	Final Step/Result	Notes
R1.0.21 or R1.0.36 or 1.0.48	• LUI reachable and AAA Fixed UT Installation Guide [1043630-0001] • Bundle files for R1.0.60.1B, R1.0.60.4C, R3.0.47	1. Upgrade to R1.0.60.1B via LUI (AAA guide) 2. Verify that the terminal is up on R1.0.60.1B; per Section 7.2 and Figure 3, wait until the Modem firmware version is displayed 3. Per Section 7.4, check the Field Programmable Gate Array (FPGA) and BFA CPLD versions (expected below). If not updated, repeat steps a)–c) 4. Upgrade to R1.0.60.4C (FDX) or 1.0.62.1D HDX via LUI (AAA guide); revert configurations so the modem does not come online 5. Verify that the terminal comes up on R1.0.60.4C 6. Upgrade to R3.0.47 via LUI (AAA guide)	• Expected firmware after 60.1B path: – FPGA: ccm_fpga_5_0_39 – BFA CPLD: bfa_cpld_5_0_7 • Modem firmware version is visible in LUI prior to proceeding	R3.0.47 installed via LUI	Do not proceed until FPGA and BFA CPLD versions are confirmed
R1.0.50 or R1.0.56 (FDX)	• SSH access to UT • LUI reachable and AAA Fixed UT Installation Guide [1043630-0001] • Bundle files for R1.0.60.4C and R3.0.47 • Ability to revert configurations to prevent modem from coming online	1. SSH to UT and run: touch /misc/nowdog.dat && sync && reboot (disables watchdog) 2. Reboot the terminal 3. Using the AAA guide, perform a LUI bundle upgrade to R1.0.60.4C; revert configurations so the modem does not come online 4. Verify the UT is running R1.0.60.4C 5. Using the AAA guide, upgrade to R3.0.47 via LUI; revert configurations so the modem does not come online	• UT online locally and LUI responsive • Post-upgrade, confirm software version shows R1.0.60.4C before proceeding to R3.0.47	R3.0.47 installed via LUI	Command 'nowdog.dat' ensures watchdog is disabled for local upgrade path
R1.0.60.4A/4B/4C (FDX) or R1.0.62.1A/1B/1D (HDX)	• LUI reachable and AAA Fixed UT Installation Guide [1043630-0001] • Bundle file for R3.0.47	1. Perform a direct LUI bundle upgrade to R3.0.47 per AAA guide	• Confirm LUI shows target version R3.0.47 after upgrade	R3.0.47 installed via LUI (direct)	No intermediate is version required
R3.0.x (any 3.0.x version)	• LUI reachable and AAA Fixed UT Installation Guide [1043630-0001] • Bundle file for R3.0.47	1. Perform a direct LUI bundle upgrade to R3.0.47 per AAA guide	• Confirm LUI shows target version R3.0.47 after upgrade	R3.0.47 installed via LUI (direct)	No intermediate is version required

8 Appendix

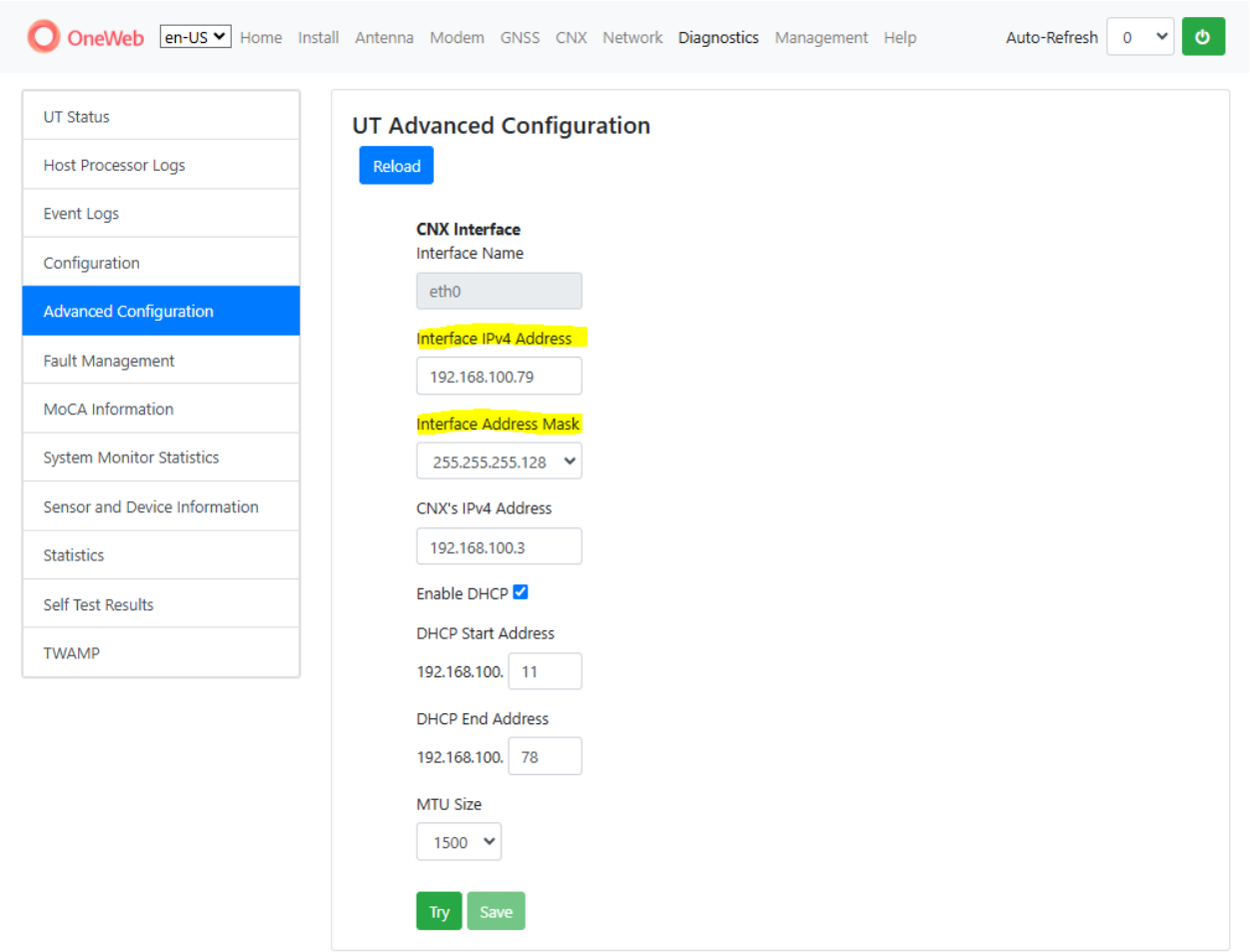
8.1 Upgrading UT Firmware with a Non-Default ODU IP Address

This section explains the process of upgrading a UT with an ODU that is configured with a non-default IP address. These steps apply to UTs that are being upgraded to HL-Fixed_3.0.47 or higher from a release version earlier than HL-Fixed_1.0.60.4A.

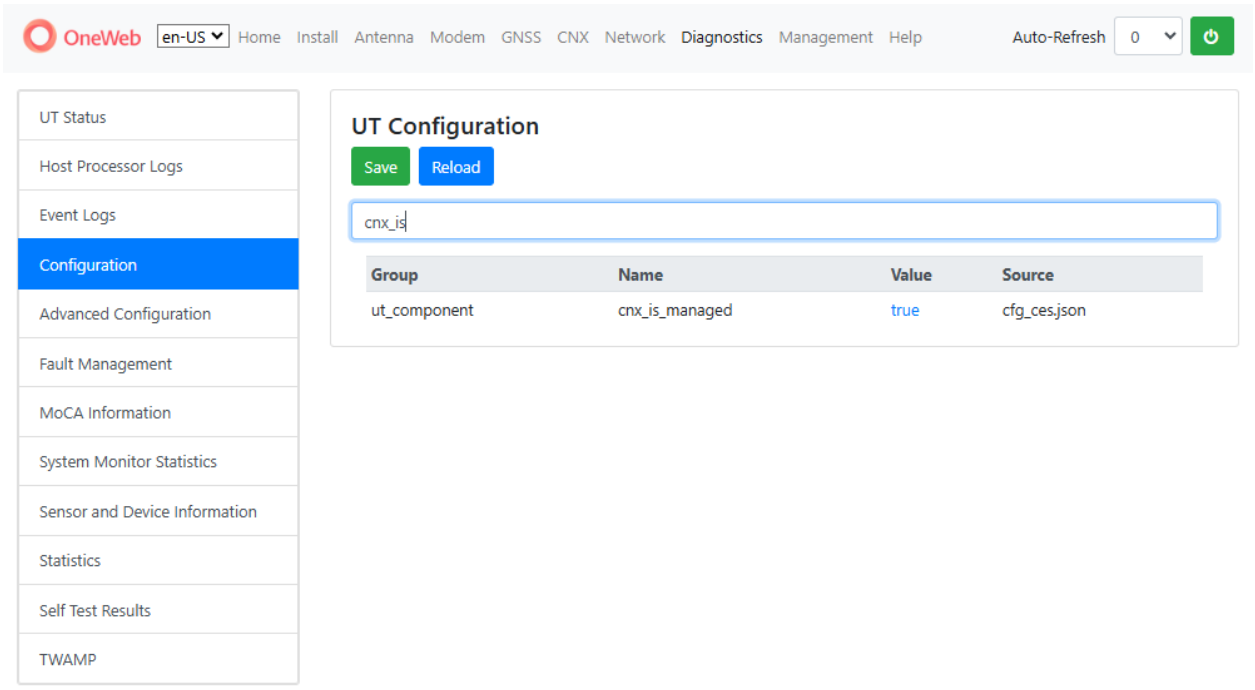
Note: If the UT is already running HL-Fixed_1.0.60.4A or higher, these steps are not required.

The default IP address of the ODU is 192.168.100.1. If it has been configured to a different IP address, please follow the steps below before proceeding with the UT firmware upgrade:

1. **Update ODU to Default IP Address:**
   a. Navigate to Advanced Configuration on the LUI and change the ODU's IP address back to the default value, **192.168.100.1**.
   b. Refer to the provided screenshot to identify the fields that need to be updated. Click **Try** to temporarily change the ODU's IP address.
   c. Open the LUI on a new address on a different tab/browser and then click Save to apply the changes.
   d. Reboot the UT.



2. **Verify CNX Managed Setting:**
   a. Ensure the **CNX Managed** setting is set to **True**.
   b. Refer to the screenshot below to identify the necessary fields to check.



c. If it is not set to **True**, click the value, select **Delete**, and save the changes. This will reset the configuration to **True**.

d. Reboot the UT.

3. **Check CNX Information:**

   a. Navigate to **Home > CNX > CNX** Information on the LUI. Confirm that the CNX Information is correctly populated.

   b. If it is not populated, contact Hughes Support for assistance.

4. **Perform Firmware Upgrade:**

   a. Complete the Software Upgrade on the UT per Section **7**.

5. **Restore ODU IP Address to Non-Default IP:**

   a. After the software upgrade, return to Advanced Configuration on the LUI and restore the non-default IP address for the ODU interface as outlined in Step **1**.

8.2 Determining Current Hardware/Software Versions of the UT

Before installing or upgrading software on an HL-Fixed UT, verify that the current hardware and software versions are using the LUI. Based on this information, select the appropriate UT software bundle for the upgrade.

8.2.1 Determining Current Hardware Versions of the UT

Log in to the CCM LUI at http://192.168.100.1, and navigate to the *Antenna → Hardware Product Information* link to view HW information for the FDX antenna, two FDX-A/B antenna panels, and their BFA, RCM, and CCM modules.

Note: For HDX antennas, only one antenna panel will be displayed.

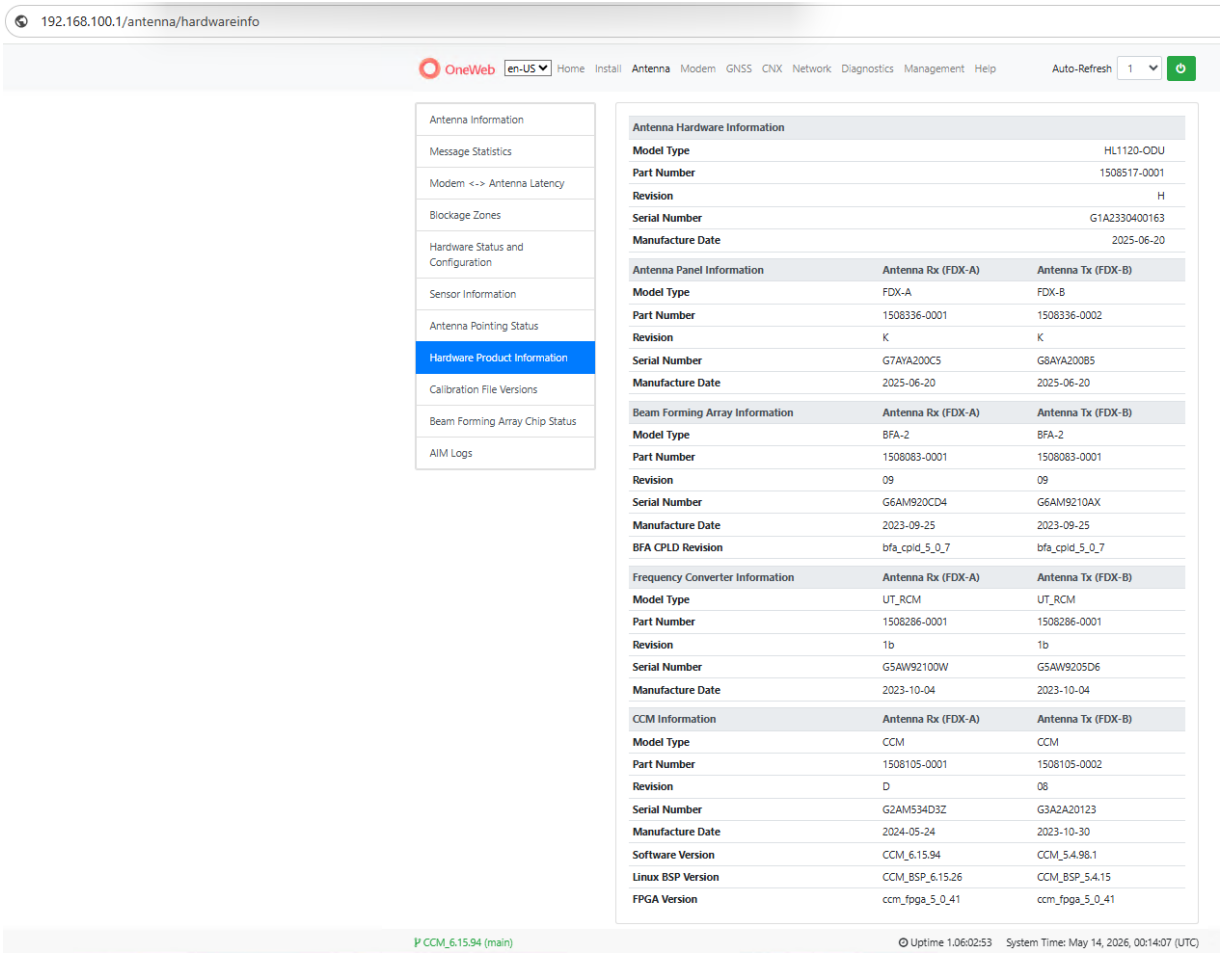


Figure 2. HL1120-ODU Hardware Information

Navigate to the *Modem → Modem Information* link to determine modem information:

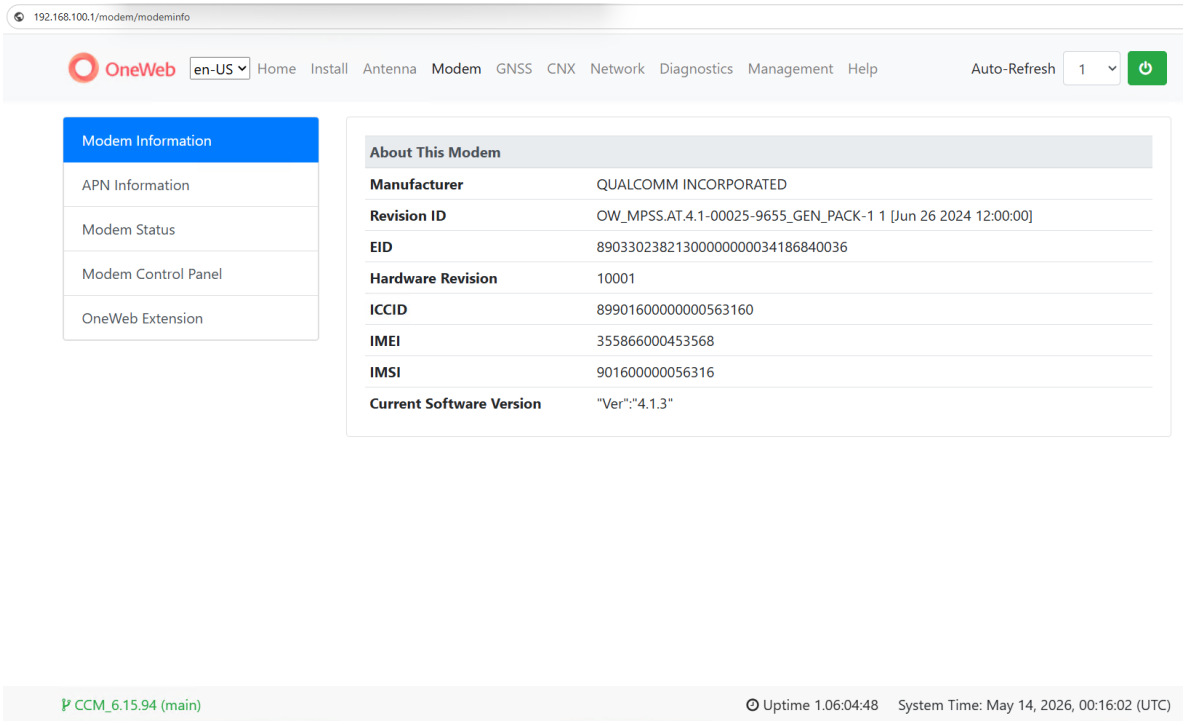


Figure 3. HL1120-ODU Modem Information

Navigate to the *GNSS → GNSS Information* link to determine OGR information:

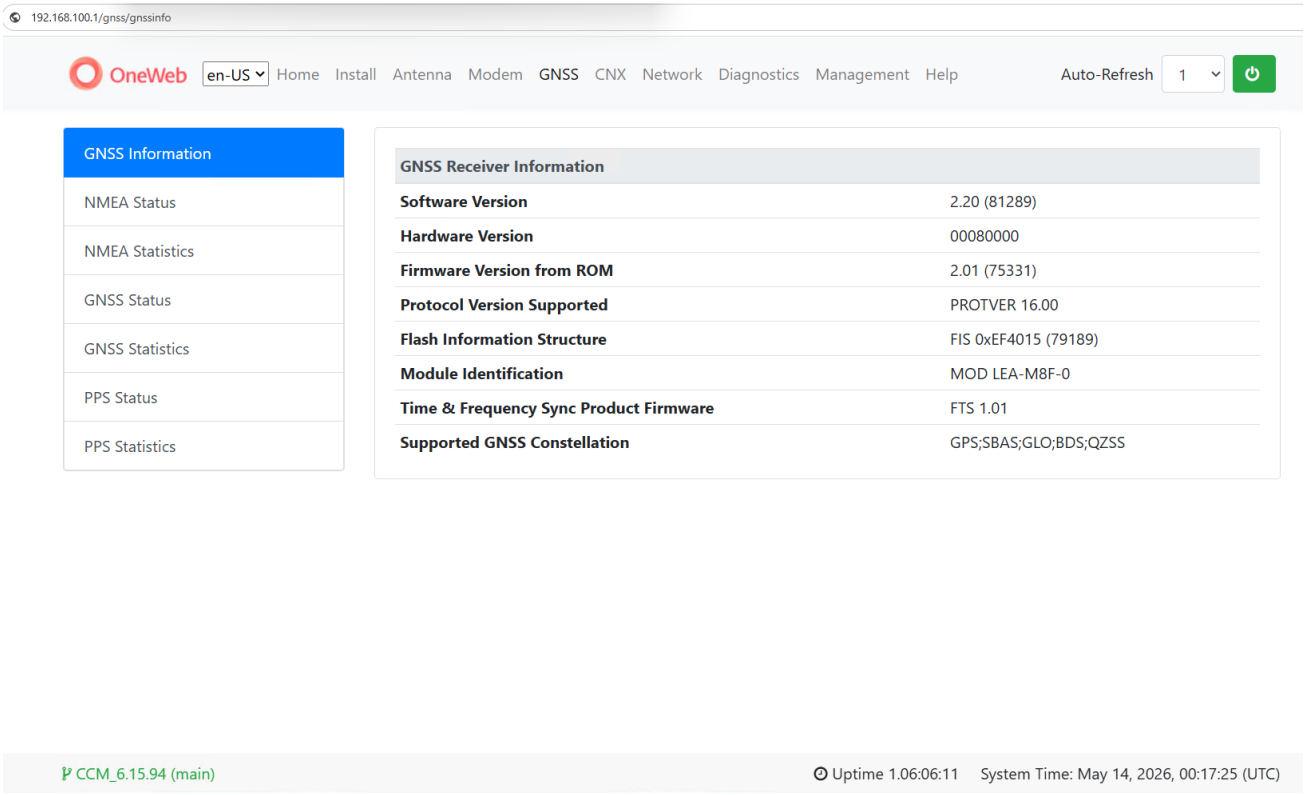


Figure 4. HL1120-ODU OGR Information

Navigate to the *CNX → CNX Information* link to determine IDU information:

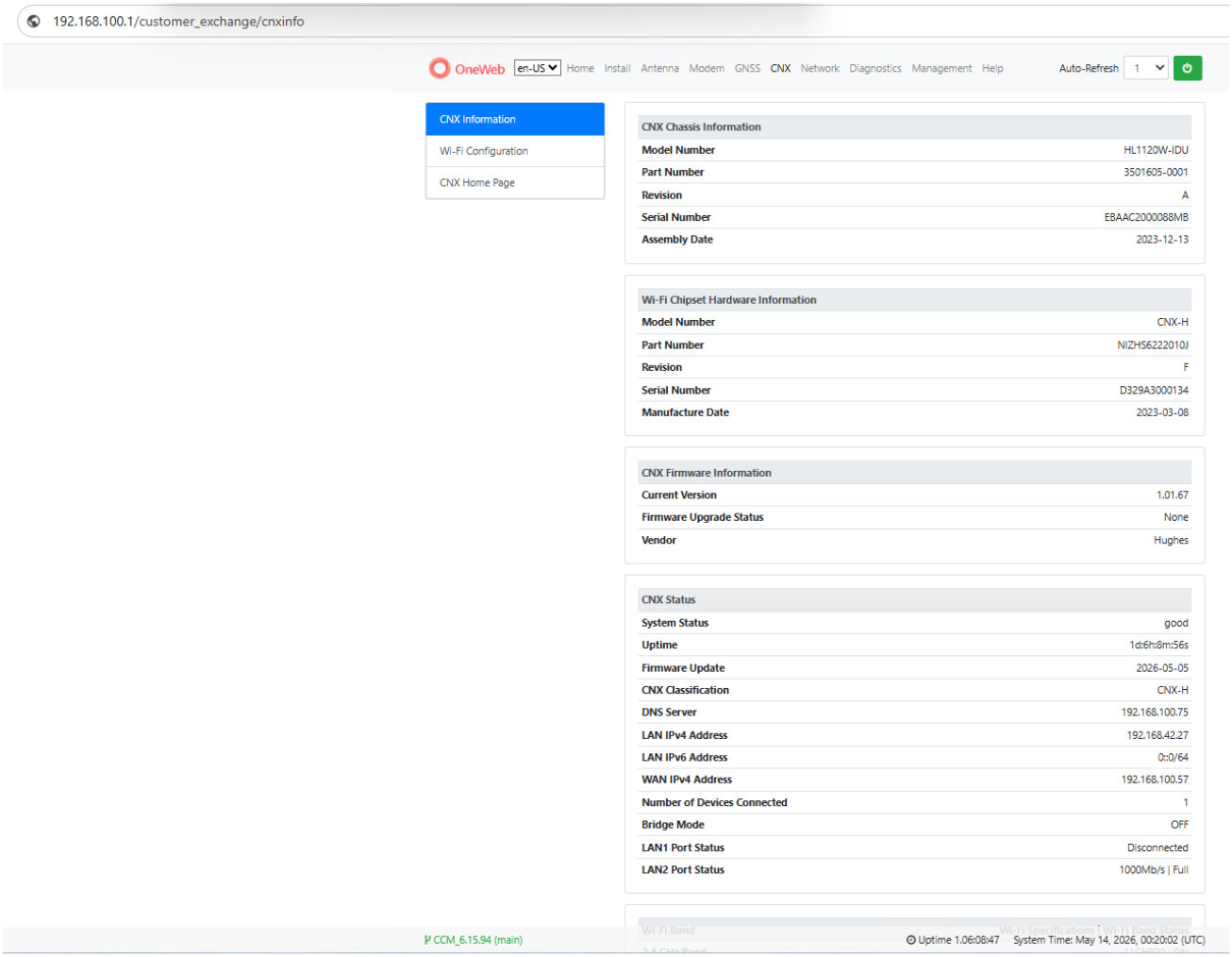
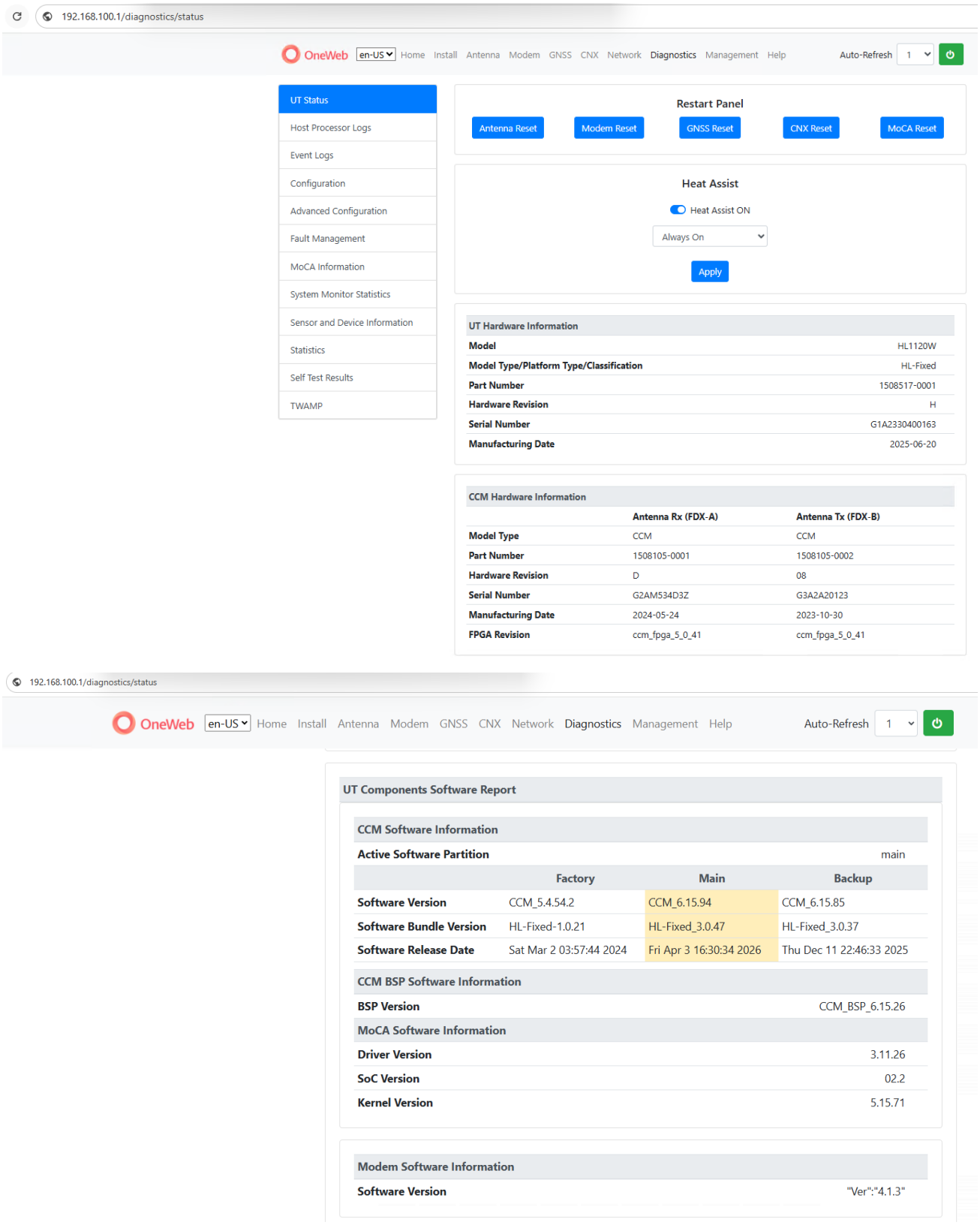


Figure 5. HL1120W-IDU (CNX-H) Information

8.2.2 Determining Current Software Versions of the UT

Log in to the CCM LUI at http://192.168.100.1 and navigate to the *Diagnostics → UT Status* link to view the current software versions on the CCM */factory*, */main* and */backup* partitions, Modem, OGR, and IDU (CNX-H):


192.168.100.1/diagnostics/status
OneWeb
en-US
Home
Install
Antenna
Modem
GNSS
CNX
Network
Diagnostics
Management
Help
Auto-Refresh
1
UT Status
Host Processor Logs
Event Logs
Configuration
Advanced Configuration
Fault Management
MoCA Information
System Monitor Statistics
Sensor and Device Information
Statistics
Self Test Results
TWAMP
Restart Panel
Antenna Reset
Modem Reset
GNSS Reset
CNX Reset
MoCA Reset
Heat Assist
Heat Assist ON
Always On
Apply
UT Hardware Information
Model HL1120W
Model Type/Platform Type/Classification HL-Fixed
Part Number 1508517-0001
Hardware Revision H
Serial Number G1A2330400163
Manufacturing Date 2025-06-20
CCM Hardware Information
Antenna Rx (FDX-A)
Antenna Tx (FDX-B)
Model Type CCM CCM
Part Number 1508105-0001 1508105-0002
Hardware Revision D 08
Serial Number G2AM534D3Z G3A2A20123
Manufacturing Date 2024-05-24 2023-10-30
FPGA Revision ccm_fpga_5_0_41 ccm_fpga_5_0_41
192.168.100.1/diagnostics/status
OneWeb
en-US
Home
Install
Antenna
Modem
GNSS
CNX
Network
Diagnostics
Management
Help
Auto-Refresh
1
UT Components Software Report
CCM Software Information
Active Software Partition main
Factory
Main
Backup
Software Version CCM_5.4.54.2 CCM_6.15.94 CCM_6.15.85
Software Bundle Version HL-Fixed-1.0.21 HL-Fixed_3.0.47 HL-Fixed_3.0.37
Software Release Date Sat Mar 2 03:57:44 2024 Fri Apr 3 16:30:34 2026 Thu Dec 11 22:46:33 2025
CCM BSP Software Information
BSP Version CCM_BSP_6.15.26
MoCA Software Information
Driver Version 3.11.26
SoC Version 02.2
Kernel Version 5.15.71
Modem Software Information
Software Version "Ver":"4.1.3"

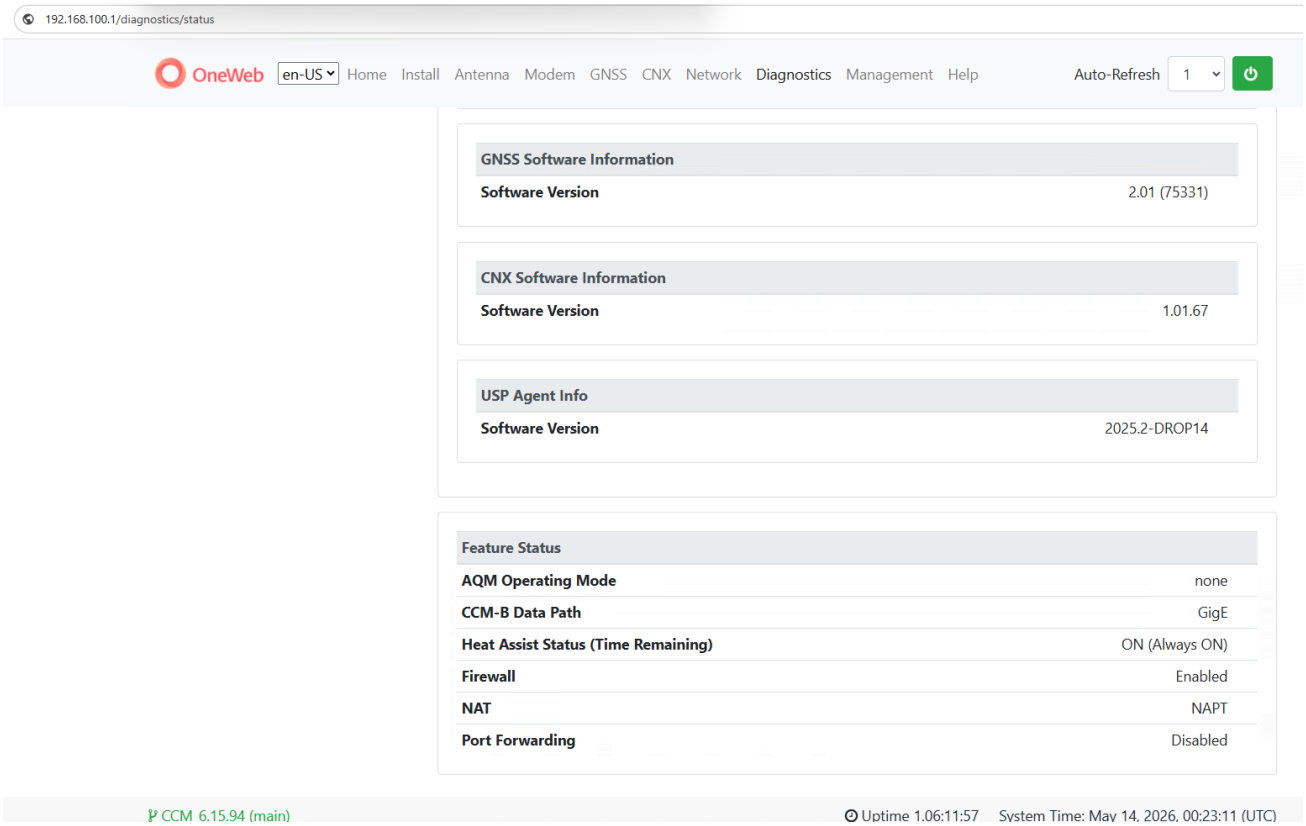


Figure 6. HL1120-ODU, HL1120W-IDU Software Information

8.2.3 Determining Current firmware versions

To access the ODU Hardware Information, navigate to: Antenna → Hardware Product Information

Under Beam Forming Array Information, the BFA CPLD firmware revision is displayed.

Under CCM Information, the FPGA firmware version is shown.

In the snapshot below:

- The green box under Beam Forming Array Information highlights the BFA CPLD firmware version.
- The red box under CCM Information highlights the FPGA firmware version.

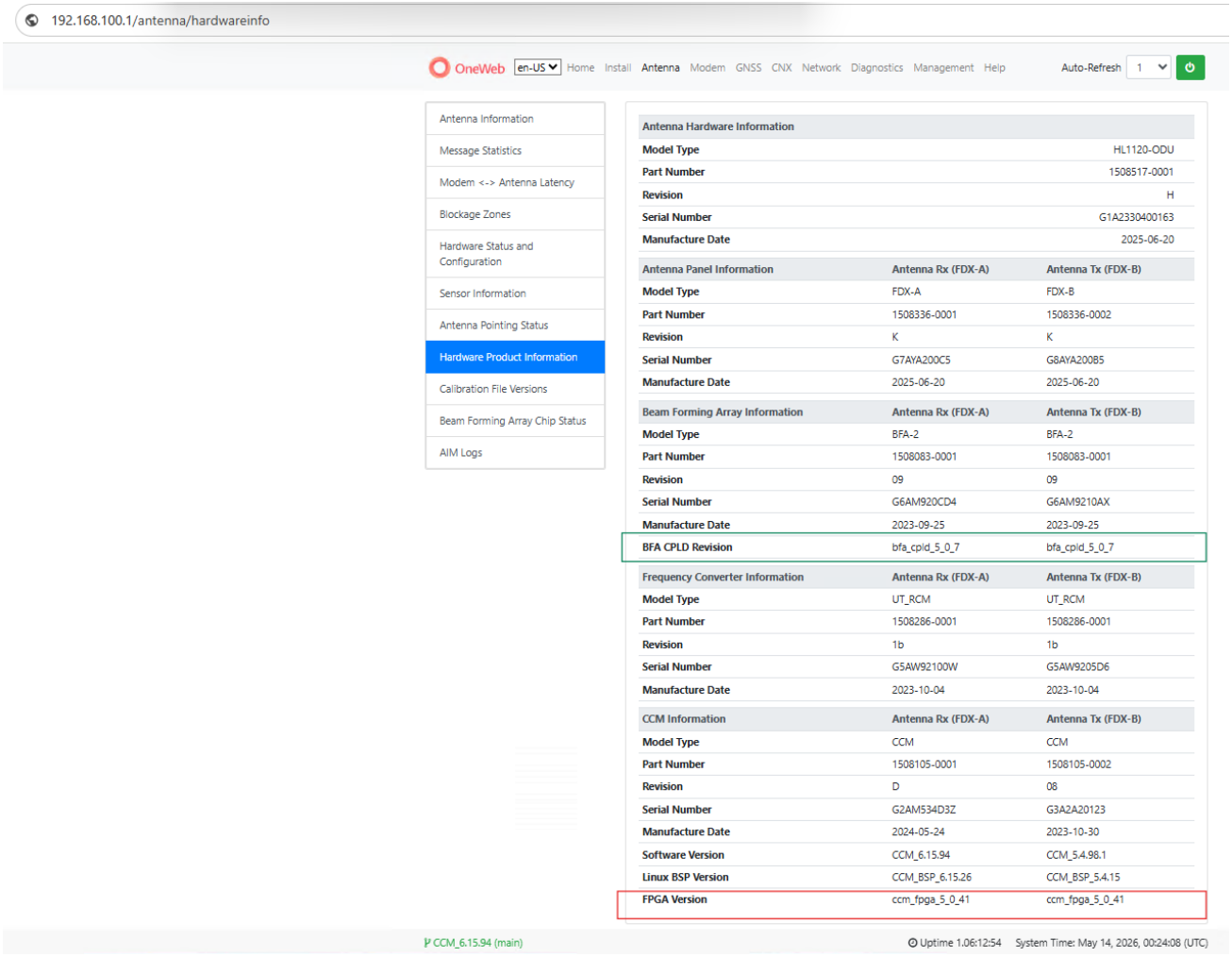


Figure 7. HL1120-ODU Firmware Information

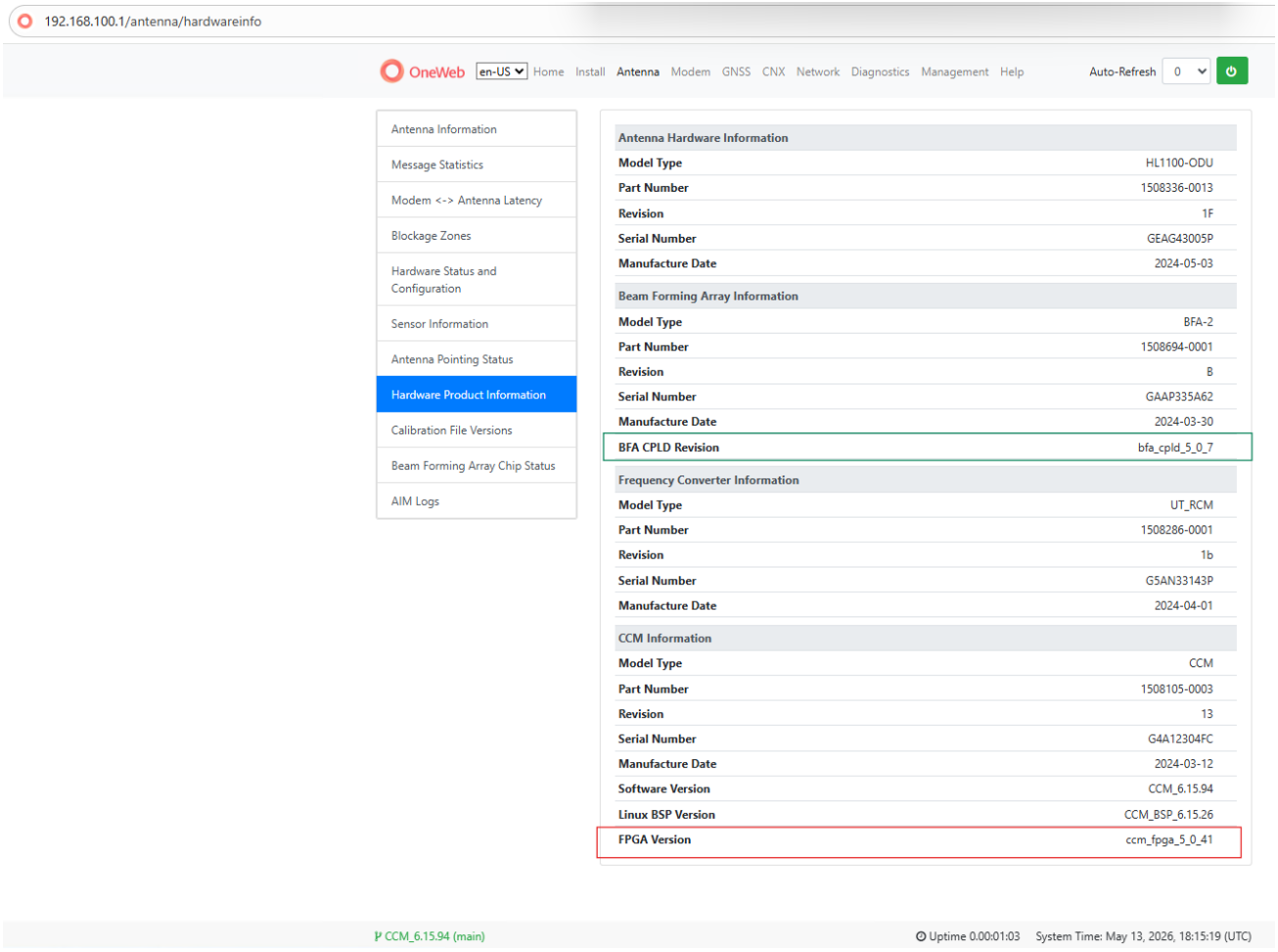


Figure 8. HL1100 ODU Information