FX30 and FX30S CatM 11.0.0 Release Notes

Compatibility

Release 11 is compatible with Sierra Wireless FX30 and FX30S Cat M1/Cat NB1 Programmable IoT Gateway products (SKUs 1104736, 1104737, 1104738, 1104739).

Note: Release 9.1 SKUs 1104086, 1104087, 1104228, 1104229, 1104534, 1104542, 1104544, and 1104546 can be upgraded to R11.0.0.

Note: AVMS Bundle Updates (FOTA) do not work over the LTE-NB1 network.

Build Contents

Bootloader Version	SWI9X06Y_02.16.06.00
MCU	002.011
FX30 Version	R11.0.0
Linux Version	3.18.44 #2 PREEMPT Thu Jun 18 02:45:08 UTC 2020
Legato Version	18.09.4

Supported Images

To obtain carrier-specific FX30 firmware images, please go to the FX30 Firmware page on the Sierra Wireless Source and follow the link to the CatM firmware packages. Firmware is available for the carriers listed below.

Note: These are full firmware images, which include all components (Linux, radio module firmware, and Legato).

Carrier	Radio Module Firmware Version	Carrier PRI Version
Generic	SWI9X06Y_02.16.06.00	GENERIC-001.028_004
Generic GCF	SWI9X06Y_02.22.12.00	GENERIC-001.051_000
AT&T	SWI9X06Y_02.16.06.00	ATT-001.026_001
Verizon	SWI9X06Y_02.22.12.00	VERIZON-001.042_000
Sierra	SWI9X06Y_02.22.12.0	SIERRA-001.021_000

Source Code

To obtain the source code, use the Leaf Workspace Manager with the identifier **swi-fx30-catm_2.0.0**.

Note: The Legato source code included in the FX30 source code package includes modifications that do not appear in the corresponding Legato source code available from legato.io or other Leaf packages. For details, refer to item descriptions in the New Features and Bug Fixes sections, below.

The Source code build generates the full FX30 image (CWE binary) at the location: *build_bin/images/public/FX30_WP77xx_full_<FX30 VERSION>-<CARRIER>-<RMFW VERSION>.cwe* (e.g. FX30_WP77xx_full_R11.0.0.007-generic-SWI9X06Y_02.16.06.00.cwe)

New Features

Radio Module FW
Integrated WP77 Release 11 to the FX30 CatM.

AT Commands
Added custom AT command to retrieve Legato application version: AT!FWD?GETAPPVERSION,<application name>

General
Removed patch files that fixed LE-12462 and (LE-12978 LE-13086). Fixes are now included in Legato 18.09.4.
Added FX30 Legato applications to root file system for Leaf Yocto builds.
Updated FX30 version generated by Leaf yocto build to include FX30 Legato hash instead of "_modified".
Added ability to pull Legato from external gerrit-legato for Leaf Yocto builds. Added generating full FX30 images under: build_bin/images/public.
Updated Legato version to 18.09.4. Includes the additional fixes on top of 18.09.2 (stock WP7702 R11):   • LE-12952   • LE-12462 (LE-14933) and LE-12978 (LE-14932)
Added custom 8 digit FX30 hash to Legato version string.
Disabled pppd in FX30 kernel configuration due to security concerns.
Removed pppd from baseline FX30 image.
Created a new yocto layer, meta-columbia-catm-R11, to override "linux-quic_git.bb" in meta-swi resolving kernel patching (LXSWIREF-1241 not included in R11).
Backported fix for modemDaemon crash (LE-12243).
Added startup script to install columbiaAtService and factoryRecoveryService if missing (providing AT!FWD commands and FX30 factory reset) and Customer Legato applications stored in /etc/legato/apps/bin.

Fixed kernel panic caused by BAM DMux Disconnect timeout (QTI9X06-294, QTI9X06-289).

Added startup script to restores the Ethernet and USB MAC address after FX30 factory reset.

Resolved issue with SOTA Job status not updated on AVMS (Backported LE-13810).

Removed debug package (iperf and tcpdump).
Debug tools must be added by the customer if required.

Patched Legato framework to include LWM2M credential storage improvements. This fix ensure credentials cannot become corrupted leaving the FX30 unable to communicate with AirVantage.
Enhancements to the LWM2M credential storage available in Legato 19.09 (LE-12952) have been backported to Legato 18.09.4.

Patched Legato framework to support FX30 UART modes for 14 (RS485) and 15 (RS232 with hardware flow control) (Legato 18.09.4).

Fixed low pulse on GPIO output when calling Legato API: le_gpioPin*_Activate.

Updated meta-columbia-x yocto layer priorities.

Updated Capabilities package to include Carrier name to improve readability on AirVantage.

Bug Fixes

General

Resolved issue with FX30 Legato applications not installed properly after firmware update.

Resolved race condition issue during Legato recipe build.

Improved AirVantage firmware update stability with partial backport of LE-13111.

Resolved issue in which QMI messages become unresponsive when the DB9 serial port is in use.

Note: To resolve this issue for field units, execute the command: AT!RIOWNER=1

Resolved race condition at build time generating the full CWE image.

Resolved issue with AT!FWD commands intermittently returning empty response with OK.

Resolved issue with ULPM wakeup from GPIO.

Fixed IMSI retrieval for AVMS sync and cm tool (Legato 18.09.4 contains the fixes for LE-12462, LE-12978, LE-13086).

Resolved issue with IMSI not read from Verizon SIMs. Backported Legato tickets: LE-12462, LE-12978, LE-13086.

Resolved issue with AV polling and FOTA Bundle install.
AV polling resolved by backporting LE-13139.
FOTA Bundle install resolved by hard coding AV polling to 120 minutes.

Known Issues

AirVantage
Note: AVMS Bundle Updates (FOTA) do not work over the LTE-NB1 network.
AirVantage Bundle install (FOTA) will fail if the data connection is interrupted during download.
AirVantage Bundle Install (FOTA) is unable to resume if power upon power cycle.
Some Verizon devices configured with IPv6 only may be unable to communicate with AirVantage.

General
The WP7702 module could crash multiple times a day when using the radio module firmware version SWI9X06Y_02.16.06.00 (Generic or AT&T) on the CatM network. (ECHO-700).
Some FX30 devices may go into low power mode if booted with low signal strength or without an antenna. If this occurs, disable PSM by executing the AT command: AT+CPSMS=0.

Upgrade Procedures

Local Upgrade

SSH on USB:

1. Copy **FX30_WP77xx_full_<FX30 VERSION>-<CARRIER>-<RMFW VERSION>.cwe** to the FX30 file system using scp.
2. Open an SSH session.
3. Execute **fwupdate download FX30_WP77xx_full_<FX30 VERSION>-<CARRIER>-<RMFW VERSION>.cwe**.

*Note: Legacy firmware images will still have the filename format **mcu-rmfw-boot-yocto-legato_wp77.cwe**. The contents of the old filename format and the new filename format are identical.*

Remote Upgrade

Using AirVantage. See AirVantage FOTA Edition Getting Started and How to upgrade Firmware on my AirPrime module or AirLink programmable modem?