FX30 and FX30S 15.1 Release Notes

Compatibility

Release 15.1 is compatible with Sierra Wireless FX30 and FX30S Cat M1/Cat NB1 Programmable IoT Gateway products.

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

Build Contents

Modem Version	SWI9X06Y_02.36.08.09 c094f4 jenkins 2022/06/24 03:14:28
MCU	002.015
FX30 Version	R15.1
Linux Version	SWI9X06Y_03.00.13.00
Linux Kernel Version	Linux version 4.14.253 (oe-user@oe-host) (gcc version 9.3.0 (GCC), GNU ld (GNU Binutils) 2.34.0.20200220) #1 PREEMPT Wed Dec 28 07:40:21 UTC 2022
Legato Version	21.05.0

Supported Images

To obtain carrier-specific FX30 firmware images, please go to the FX30 CatM Firmware page on the Sierra Wireless Source. 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_02.36.08.09	GENERIC-001.079_000
AT&T	SWI9X06Y_02.36.06.00	ATT-001.067_005
Verizon	SWI9X06Y_02.22.12.00	VERIZON-001.042_004
Telstra	SWI9X06Y_02.36.08.02	TELSTRA-001.061_001
Sierra	SWI9X06Y_02.36.08.09	SIERRA-001.049_000

Source Code

To obtain the source code, use the Leaf Workspace Manager with the identifier **swi-fx30-catm_4.1.0**.

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. build_bin/images/public/ FX30_WP77xx_full_R15.1.0.004-sierra-SWI9X06Y_02.36.08.09.cwe)

To pull the full yocto environment, use the following command sequence:

1. Create a new folder:
   ```
   mkdir my_workspace
   cd my_workspace
   ```
2. Initialize the Leaf workspace:
   ```
   leaf init
   ```
3. Set up the workspace:
   ```
   leaf setup fx30-catm-new -p swi-fx30-catm_4.1.0
   ```
4. Pull the source code:
   ```
   leaf getsrc swi-linux
   ```
5. Build:
   ```
   make PROD=fx30
   ```

Notes

- **`leaf getsrc swi-linux`** pulls the entire FX30 yocto environment, allowing the full image to be built. Some additional Legato framework patches (customizations) are added to the legato-af recipe.
- **`leaf getsrc legato`** results in pre-patched Legato framework source code with FX30 customizations corresponding to the legato-af yocto recipe.

Important: *Do not execute **repo sync** in swi-linux or legato workspaces. This can result in a corrupted workspace.*

New Features

Radio Module FW
Integrated WP77 R15.1 release into baseline

General
Added IMA feature
Enabled Yocto/Legato DM verity

Bug Fixes

General		Impacted Domain
MOLFX30-75 (QTI9X06-591)	When IMA is enabled, `/etc` becomes read-only.	Linux
LXSWIREF-2069	Due to concerns regarding backward compatibility, default firewall input policy was set to ACCEPT. While individual firewall rules protect static interfaces, such as eth0 and rmnet_data0, any interface created at run time would have all ports open hence and prone to attacks	Linux
QTI9X06-556	ADC0 and ADC1 values read by `AT!madc?` are incorrect	Linux
QTI9X06-639	TAU may be rejected by the network if the PSM T3412 timer is set to 80 minutes	PSM
QTI9X06-514	Query GPIO_43 will return an error	Legato
QTI9X06-515	FOTA package download process stops, manual resynchronization needed	Legato
MOLFX30-53 (QTI9X06-554)	Redirect security and authentication logs to flash	Linux
QTI9X06-529	IMA_Enable version cannot set logread	Linux
MOLFX30-30 (QTI9X06-534)	Factory recovery enables unauthorized SSH root access to FX30 Octave and customer application	Linux
QTI9X06-568	ERROR is returned when executing the `AT!FWD?FTIOTADC` command	Linux
QTI9X06-697	[FX30] Update modem CatM radio module binaries for ATT carrier	Modem

Known Issues

Changing the AirVantage Lifetime value (also known as heartbeat or AV poller) using a template may report success. However, AirVantage disables the heartbeat instead.

This will cause the FX30 to no longer check-in with AirVantage.

The FX30 has a built-in mechanism checking once daily to re-enable the AV poller to 60 minutes, if found to be disabled.

AVC can fail to establish network connection for up to 6 hours due to Legato Wi-Fi services. As a workaround, disable or uninstall all related Wi-Fi services.

When `UIMAUTOSWITCH` is enabled by `AT!CUSTOM="UIMAUTOSWITCH",02`, the module SIM slot will be changed from External (UIM1) to eSIM (UIM2).

RS-485 terminator resistor can be enabled in RS232 mode.

General

Some devices are unable to access GPIO8 from sysfs

These devices require configuration using the AT command: AT+WIOCFG=8,16,1,0

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configTree entries related to system settings that are modified could be lost after a firmware update.

Please ensure to back up any system setting changes and then re-apply after the firmware updates to R15.1

An issue in the Legato framework during migration of secure storage contents occurs after multiple upgrades and downgrades, causing secure storage keys to no longer be accessible.

Customers must avoid downgrading from R15.1, or newer to R11 or older.

An issue exists where GNSS fix is inaccurate. This issue will be faced by customers in marginal GNSS signal areas.

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 /<PATH>/FX30_WP77xx_full_<FX30 VERSION>-<CARRIER>-<RMFW VERSION>.cwe**.

Note: Ensure that you specify the full path to the file. For example:
fwupdate download /tmp/FX30_WP77xx_full_<FX30 VERSION>-<CARRIER>-<RMFW VERSION>.cwe

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*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?