23-May, 2014

AirLink GX440/ES440 Radio Module File System Corruption

Introduction

The AirLink GX440 and ES440 for Verizon employ the MC7750 radio module which is susceptible to a file system corruption issue referred to as EFS corruption. This issue is remedied in the MC7750 3.05.10.13 module firmware release. This document describes the issue and provides a timeline for the deployment of the 3.05.10.13 firmware for the GX440 and ES440 platforms.

Issue Description

When module file system corruption occurs in a GX440 or ES440, the resulting symptoms can vary depending on the ALEOS firmware version running on the device and the severity of the corruption. In most cases the unit is rendered unusable as a gateway.

Observed symptoms include:

- The device is unresponsive except for the Power LED which is lit green
- The device enters a continuous cycle of reboots
- The device fails to connect to the cellular network
- The device connects to the LTE network but cannot connect to the EV-DO network

Products Affected

All GX440 and ES440 Verizon SKUs are affected. The complete list of SKUs is shown below:

Part Number	Description
1101413	GX440,VERIZON,ALEOS,AC
1101414	GX440,VERIZON,ALEOS,DC
1101530	GX440,VERIZON,ALEOS,AC;WIFI
1101531	GX440,VERIZON,ALEOS,DC;WIFI
1101729	GX440,VERIZON,ALEOS,DC;I/0
1101816	GX440,VERIZON,ALEOS,AC;I/0
1101728	GX440,VERIZON,ALEOS,AC,ETHERNET
1102024	GX440,VERIZON,ALEOS,DC,ETHERNET
1101996	ES440,VERIZON,ALEOS,AC

Technical Solution

An Emergency Maintenance Release (EMR) of the MC7750 firmware (version 3.05.10.013) has been approved by Verizon Wireless. This firmware contains the following critical resolutions:

1. Enhances the file system corruption recovery mechanism to address all corruption cases
2. Provides a backup of the complete file system ensuring that EV-DO connectivity is restored in the event of a file system corruption
3. Addresses a function in the module GPS system which aggravates the corruption

Devices Upgraded with MC7750 3.05.10.09

Devices which have been upgraded to MC7750 v3.05.10.09 from previous versions may experience a partial recovery from file corruption whereby CDMA parameters are not restored. In this case, the device may continue to operate when connected to LTE, but cannot connect to EV-DO.

Recommended Actions

Customers with GX440 and ES440 Verizon devices are very strongly recommended to upgrade their deployments as follows:

1. Upgrade the device firmware to ALEOS 4.3.5.010B
2. Upgrade the radio module firmware to 3.05.10.13

Any device that has experienced EFS corruption and has any of the symptoms listed in the "Issue Description" section above, will require an RMA for a MC7750 module replacement.

Schedule of Availability

1. MC7750 v3.05.10.13 will be available to customers via website and AVMS as part of ALEOS 4.3.5.010B on 23-May, 2014.
2. AirLink GX440 and ES440 with ALEOS 4.3.5.010B and MC7750 v3.05.10.13 will begin shipping from the factory 5-June, 2014.

Progression of MC7750 Module Firmware

Over its lifetime, the GX440 has shipped with several versions of MC7750 firmware. This table shows the progression and changes between each release and highlights the issues found on each release.

MC7750 Firmware	1.00.09.03	3.05.10.06	3.05.10.09	3.05.10.13
Models	GX440	GX440	GX440 and ES440	GX440 and ES440
Factory Release Date	8-Feb, 2012	1-Mar, 2013	19-Aug, 2013	30-May, 2014 (Plan)
Description of Release	Initial release. No file system corruption recovery mechanism	Updated Qualcomm stack and fixed 3G to 4G handoff issues. No file system corruption recovery mechanism	Partially addressed file system corruption and introduced recovery mechanism	Fully addresses file system corruption