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APN Content Level	BASIC	✔	INTERMEDIATE		ADVANCED		Confidentiality	Public	✔	Private	✔

Hardware Compatibility	Product Line	Cat1+, Legacy 2G/3G	Series	WP7504, WP7603, WP761x, WP8548, HL7588, HL7588V, HL7688, HL7648, HL852x

Software Compatibility	All firmware releases		Document Type	Application Note	✔	Technical Note	

1 Version

This document may be updated over its lifetime. To ensure you design with the correct version, please check The Source for the latest version.

2 Introduction

This document is provided to Sierra Wireless distributors and clients to communicate the plan of Sierra Wireless, and methods to act against the impact of upcoming 3G network sunset.

To request a new application/technical note, contact your regional Sierra Wireless Product Marketing Manager.

3 Overview

Some 3G cellular networks in North America will be shut down in the coming months. Under these circumstances 3G modules, or 3G on any 4G LTE Cat4, Cat3, or Cat1 embedded modules, will no longer operate in those 3G cellular networks. Neither CS voice-capable (except VoLTE) nor CS-data-capable modules will work after this 3G sunset. The firmware configuration change will be made on impacted 4G LTE embedded modules, in order to avoid a No Service condition, which can continually operate in the post 3G sunset.

4 Impacted Sierra Wireless Modules & Suggested Plan of Actions

The following list of embedded modules will be impacted by the scheduled network configuration changes. These changes will be implemented by network operators in North American markets.

4G LTE embedded modules are currently configured as Voice Centric in the "Mode of Operation for EPS (CE Mode)". After the 3G network sunset, these 4G LTE embedded modules will be configured to Data Centric, if they are used in the data-only application. The only exception are modules supporting IMS-configured VoLTE (Voice over LTE) with an accompanying VoLTE subscription from the network operator. All other relevant configurations, such as Voice Domain Preference Setting and Current RAT Setting, remain unchanged in their respective Carrier PRI configurations such as AT&T and Generic.

*Note: 3G-embedded modules from Sierra Wireless will no longer operate in some networks. This could lead to a **No Service** condition in the post 3G network sunset. It is recommended to migrate data from all the existing designs to Sierra Wireless RC7611/-1 or WP7611/-1.*

4.1 Recommended Plan of Action

1. Review and identify the impacted modules (listed in Table 1) deployed in the field.

2. Identify new modules received but not yet deployed in the field.

3. Select which applies below and take action as recommended:

    a. For VoLTE capable modules: You must subscribe to the IMS plan from the network operator for your device signaling Voice-Centric. Otherwise, you have to change the UE Usage Setting of your device to "Data Centric, CS+PS" to avoid the No Service condition.

    b. For Non-VoLTE capable modules: Change the UE Usage Setting to "Data Centric, CS+PS".

    c. For 2G or 3G+2G modules: Proceed to replace with the recommended module shown in Table 1.

4. Run the process until the new modules (Date of Manufacture to be published) are received with the preconfigured UE setting "Data Centric, CS+PS".

5. Update all affected modules by February 2022.

Table 1: List of Impacted Modules

Module Name	Technology	Current Setting & FW Configuration (Before 3G Sunset)		New Setting & FW Configuration (After 3G Sunset)		Recommended Plan of Action
		UE Usage Setting	VoLTE enabled ?	UE Usage Setting	VoLTE enabled ?	
HL7588	LTE (Cat4), 3G	Voice Centric, CS+PS	No	Data Centric, CS+PS	No	Configure the module to Data-Centric
HL7688	LTE (Cat1), 3G					
WP7504	LTE (Cat3), 3G	Voice Centric, CS+PS	No	Data Centric, CS+PS	No	Configure the module to Data-Centric
WP7504-1	LTE (Cat1), 3G					Configure the module to Data-Centric
HL7588V	LTE (Cat4), 3G	Voice Centric, CS+PS	Yes	Voice Centric, CS+PS, or Data Centric, CS+PS	Yes	Must have an IMS subscription for the module to stay configured as Voice-Centric, otherwise the module must be configured to Data-Centric to avoid a No Signal condition
HL7648	LTE (Cat4)	Data Centric, CS+PS	Yes	Data Centric, CS+PS	Yes	No action is required
WP7603	LTE (Cat4), 3G	Voice Centric, CS+PS	No	Data Centric, CS+PS	No	Configure the module to Data-Centric
WP7610						
WP7611						
WP7603-1	LTE (Cat1), 3G					
WP7611-1						
HL8528	3G	Voice Centric	No	N/A	No	Replace the module with either RC7611 or RC7611-1
HL8529	3G	Voice Centric	No	N/A	No	
WP8548	3G, 2G	Voice Centric	No	N/A	No	Replace the module with either WP7611 or WP7611-1

5 Reconfigure the WP76xx/WP75xx/HL75xx/HL76xx to Data Centric

To configure a WP76xx/WP75xx/HL75xx/HL76xx to Data Centric:

1. Insert the cellular SIM card

2. Load the Generic or AT&T firmware.

3. Use at+cemode? // to check if the cemode is Voice Centric, CS+PS (+cemode=1).

4. Use at+cemode=2 // to set to Data Centric, CS+PS.

5. Use at!reset // to reset the embedded module.

6. Use (Recommended) at+cemode? // to query, by a host processor, if the cemode was set to Data Centric as part of the initialization process.

Note: It is recommended to implement the mechanism to verify the cemode setting as soon as the module is completely running. In some events, the module firmware may be recovered or updated using a factory default, or customer PRI configuration, if there is an unplanned incident or planned event of firmware upgrade.

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6 SKU Update Plan in Factory

Sierra Wireless will publish a DOM (Date of Manufacture) that corresponds to when the rolling SKU configuration changes will be implemented, in the factory and on all active SKUs impacted. A TAC range or other idenfication may be required and the respective ranges may apply to those impacted embedded modules from Sierra Wireless' factory. This will enable traceability to all changes to be made.

7 Certification

Network operators planning to shut down their respective 3G networks are not asking Sierra Wireless to recertify the module because it will be the same approved firmware. As such, all OEMs must check with their points-of-contact (from these network operators) to verify if they will need recertification.

8 Support

For direct clients/distributors: contact your Sierra Wireless FAE.

For distributor clients: contact your distributor FAE.

9 Document History

Level	Date	History
1	March 26, 2021	Creation
1.2	April 14, 2021	Updated table, minor changes added
1.3	April 30, 2021	Updated table, additional changes made
1.4	May 4, 2021	Updated Section 5
1.5	May 5, 2021	Remove AirPrime from the title

10 Legal Notice

Important Notice

Due to the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors) or be totally lost. Although significant delays or losses of data are rare when wireless devices such as the Sierra Wireless modem are used in a normal manner with a well-constructed network, the Sierra Wireless modem should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Sierra Wireless accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using the Sierra Wireless modem, or for failure of the Sierra Wireless modem to transmit or receive such data.

Safety and Hazards

Do not operate the Sierra Wireless modem in areas where cellular modems are not advised without proper device certifications. These areas include environments where cellular radio can interfere such as explosive atmospheres, medical equipment, or any other equipment which may be susceptible to any form of radio interference. The Sierra Wireless modem can transmit signals that could interfere with this equipment. Do not operate the Sierra Wireless modem in any aircraft, whether the aircraft is on the ground or in flight. In aircraft, the Sierra Wireless modem MUST BE POWERED OFF. When operating, the Sierra Wireless modem can transmit signals that could interfere with various onboard systems.

Note: Some airlines may permit the use of cellular phones while the aircraft is on the ground and the door is open. Sierra Wireless modems may be used at this time.

The driver or operator of any vehicle should not operate the Sierra Wireless modem while in control of a vehicle. Doing so will detract from the driver or operator's control and operation of that vehicle. In some states and provinces, operating such communications devices while in control of a vehicle is an offence.

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