1. FGR2 Release Notes

Thank you for purchasing the FreeWave FGR2 radio.

These sections describe the updates and known limitations in each software version for the FGR2. The most recent version is listed first.

The latest software versions and the most recent list of known limitations and workarounds are available on www.freewave.com.

1.1. Version v10.7.04

Release date: December 2016

Additions and Changes

- A hidden Option 4 has been added to the **Hop Table Parameters** menu. This option:
  - provides another mechanism to set channel restrictions.
  - allows users to mask out individual or blocks of frequencies (channels).
    - See the **Channel Select Parameter** description topic in the FGR2 User Manual.

> **Note**: The original implementation is limited to a finite number This functionality is maintained to support backwards compatibility.

- The **Single Channel Mask** process is used instead of the **Zones** method by using two array masks.
  - The first array is the Master Channel Array (MCA) and is created via an order option and is programmed into the unit at FreeWave.
  - The second array is the Customer Channel Array (CCA) and can be created by the customer.
    - The CCA cannot unmask channels that are masked by the MCA but can mask out channels that are not restricted by the MCA.
- Added a new option to legacy FGR2 radios to use a channel select for each channel.
  - When enabled, this overrides the **Zone** mask.

> **Note**: The current selectable frequency tables and the zone filter remain the same to allow for backwards compatibility.

1.1.1. Access to the Single Channel Mask

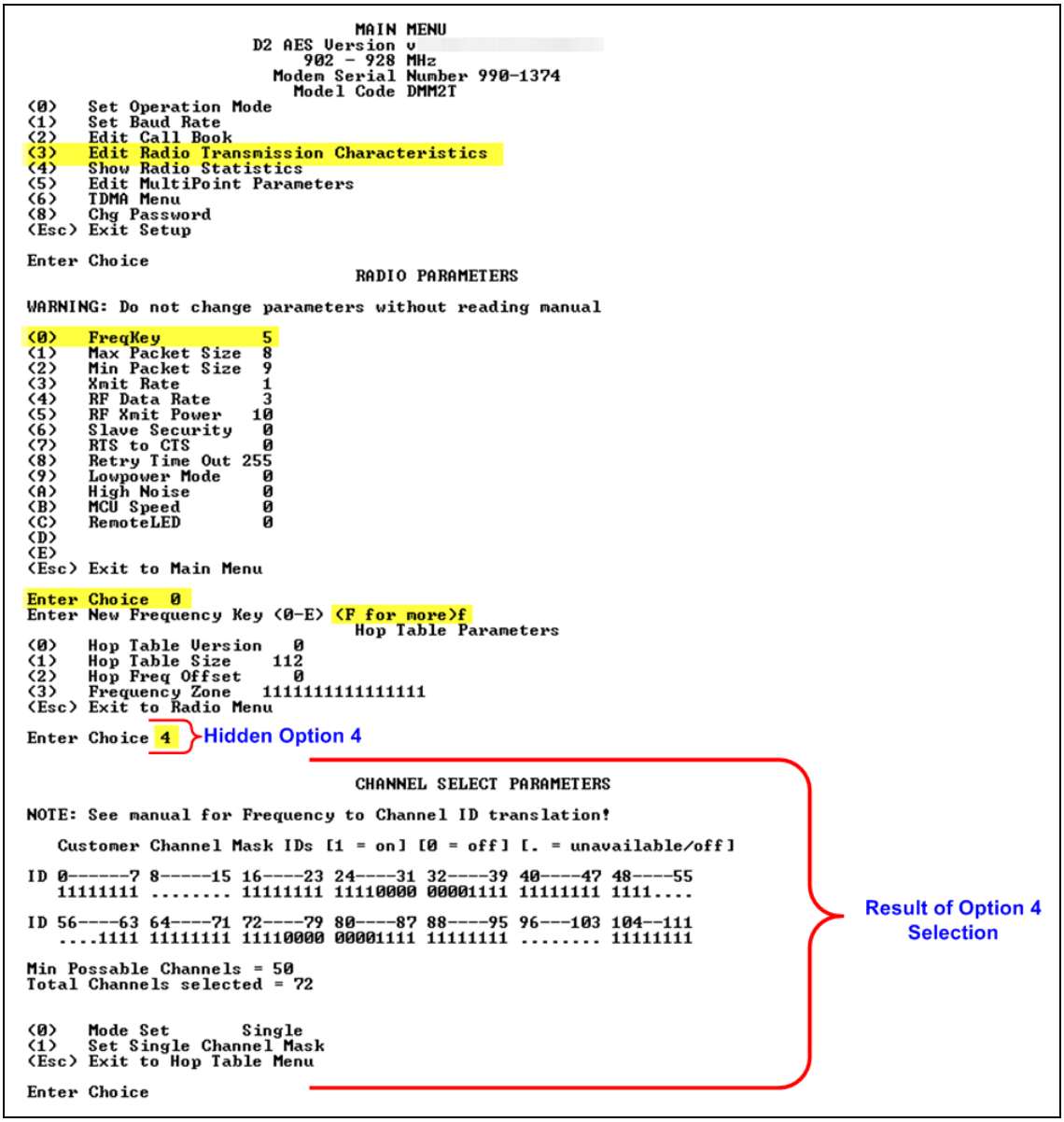

Figure 1: Access to Single Channel Mask

Example of Single Channel Mask

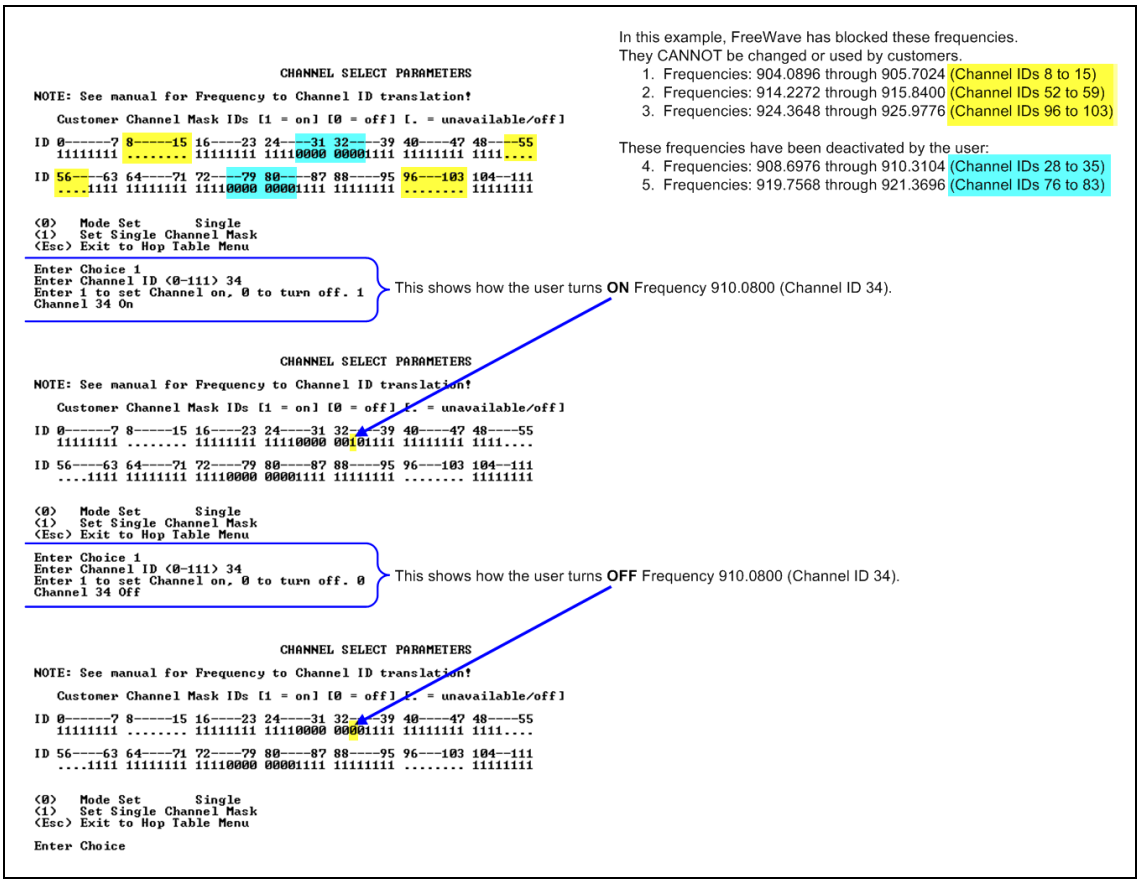

Figure 2: Example of Single Channel Mask

Known Limitations and Workarounds

- None

1.2. Version v10.6.8

Release Date: August 2013

Additions and Changes

- None

Known Limitations and Workarounds

- Fixes to low power mode from v8.78 corrects FGR2's failure to wake out of low power mode and lockup after few hours in service.

1.3. Version v10.6.7

Release Date: July 2013

Note: If upgrading from firmware 8.77 or 8.78 to firmware v10.6.7 and experience issues or inconsistent results, contact FreeWave Technical Support at 303.381.9200 or by email at moreinfo@freewave.com.

Additions and Changes

- Corrected problem with serial radios set to RS485 changing to RS232 operation when no setting change was made.
  - This change only applies to radios that include an RS485 setting for the serial interface.

Known Limitations and Workarounds

- In the **Network Diagnostics** application in Tool Suite, the radios report having the incorrect firmware version installed.
- On the **Operation Mode** tab in Tool Suite (**Modem Mode** menu in the terminal interface), Ethernet parameters appear.
  - These options do not apply to this radio.
- Supply voltage readings in Tool Suite can fluctuate and differ from those readings on an external voltage meter.
- When the **Use Break to Access Setup** setting is set to use the radio's current baud rate (a setting only available through the terminal interface), the Diagnostic port's baud rate does not set to the default or the **Baud Rate** setting, resulting in unreadable output. If you use this **Use Break to Access Setup** setting, use the data port for configuration.

1.4. Version v10.6.6

Release Date: October 2012

Additions and Changes

- Updated firmware version to use the vX.X.X format.
- Added AES 128, 192, and 256 encryption capability. AES functionality is enabled at the factory. To upgrade an existing radio to use the AES functionality, contact FreeWave Technical Support.
  - AES options MUST be set using the terminal interface.
  - Tool Suite versions 2.9.0.0 and earlier do NOT include AES.
- Removed the Ultra Low Power Mode feature.

Part Number: LRN0009AA
Release Notes are subject to change without notice.
Revision: Jul-2017

Known Limitations and Workarounds

- In the **Network Diagnostics** application in Tool Suite, the radios report having the incorrect firmware version installed.
- On the **Operation Mode** tab in Tool Suite (**Modem Mode** menu in the terminal interface), Ethernet parameters appear.
  - These options do not apply to this radio.

1.5. Version 8.78

Release Date: December 2011

Additions and Changes

- **AES zeroization** - AES capability now supports zeroization, attempting to hold to NAVSO P5239, and various locks and checks against zeroized keys. (This update does not apply to FGR2 models).
- **Clear 8th data bit when set to 7 data bits** - In a case where one radio is programmed with 7 data bits, and parity enabled, the parity bit is transferred by the radios as the 8th data bit, and sent out the port
  on the other side. This corrupts the data. Now if the radio is set to 7 data bits, it clears the 8th data bit on serial receive.
- **Repeater un-shifts timing in OTA slot** - Repeaters shift half of their timing to ensure their transmissions lineup exactly in time with the masters (2nd layer deep). During an over the air firmware upgrade, the repeater shifted half of it's timing, but did not unshift the timing. This could build into a timing problem causing drop of link on sufficient missed packets.
- **Ultra Low Power Mode** - **ULPM Enable** and **ULPM Sleep** parameters now available in the Transmission Characteristics settings. For more information about **Ultra Low Power Mode**, see the Parameter Reference chapter in this manual.

1.6. Version 8.77

Release Date: May 2011

Additions and Changes

- Added support for mirror bits and multi-band master sync.
- You can now select Mirrored Bit Master or Mirrored Bit Slave as an operation mode.

1.7. Version 8.73

Release Date: October 2009

Additions and Changes

- RS485 Protocol fixed.
- Use Break Command to Enter Setup function fixed.
- Grand Master mode (for Multi-Master Sync) feature fixed.

1.8. Version 8.71

Release Date: August 2009

Additions and Changes

- Improved efficiency and reliability of writing TDMA settings to memory.
- Improved efficiency and reliability of writing Diagnostics settings to memory.

1.9. Version 8.70

Release Date: March 2009

Additions and Changes

- Mirror back-end changes.

1.10. Version 8.69

Release Date: October 2008

Additions and Changes

- Link acquisition issue corrected.

1.11. Version 8.68 (Initial Release)

Release Date: June 2008

Learn More

For additional product information, visit www.freewave.com.

For additional assistance, contact a local reseller, or contact FreeWave Technologies, Inc. at 303.381.9200 or 1.866.923.6168, or by e-mail at moreinfo@freewave.com.

The FGR2 complies with FCC Part 15 rules. Operation is subject to the following two conditions: 1) This device may not cause harmful interference and 2) this device must accept any interference received, including interference that may cause undesired operation.

FGR2 must be professionally installed using only the included equipment and is only approved for use when installed in devices produced by FreeWave or third party OEMs with the express written approval of FreeWave Technologies, Inc. Changes or modifications should not be made to the device.

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