Q-Series Transceivers

Q-508X006
Q-508X008
Q-518X006

User Manual Addendum

Part Number: LAD0007AC
Revision: B
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Date	Revisions
11/08/2011	Added Known Issues for firmware 2.68. Removed references to obsoleted part numbers. Updated Output Power section. Updated to new FreeWave template.

About this Document

This document covers features on the 228-235 MHz Q-Series radio transceivers.

These features include “RemoteLED” Settings of ‘2’, “SubNet ID” functionality on Master radios and Hop Frequency operation.

Q-Series Features

1) RemoteLED Setting 2 (Menu 3, Option C):

RemoteLED Setting 2 is a new feature which disables the LEDs on the radio. This function is useful as a power saving option. If the RemoteLED option on the radio is set to 2, when the radio is in Setup mode, the LEDs turn on as normal.

2) SubNetID Functionality:

If the SubNetID function is used in a Point-to-MultiPoint system, then the Xmit SubNetID on the Master radio ***must*** be specified (should be different from ‘F’, which is a default setting).

This feature allows separation of Point-to-MultiPoint networks using the same Network ID while enabling roaming (Slave radios can easily connect and disconnect to different networks without changing their Network ID).

In most cases, the SubNetID on the Point-to-MultiPoint Master should be set to Xmit = 0 and Rcv = 0.

3) Hop Frequency operation:

The following points are required regarding Hop Frequency operation:

a) The Hop Frequency Offset parameter on the radio ***must*** be set at 12.

b) All frequency channels that the radio can be tuned to are separated by 250 kHz.

c) The total number of frequency channels, therefore, 29.

d) The overall frequency band of operation of the transceiver is divided into 16 Frequency Zones. Each Frequency Zone includes two frequency channels. For example, Frequency Zone contains channels with the center frequencies 228.000 MHz and 228.250 MHz. Frequency Zone 2 for the same transceiver contains channels at 228.500 MHz and 228.750 MHz.

   Enabling specific Frequency Zones allows the transceiver to operate at the frequency channels defined by that Frequency Zone. For example, disabling Frequency Zones 2 and 3 keeps the 228-235 MHz transceiver from operating in the frequency band of 228.500 to 229.250 MHz.

Even though the total number of Frequency Zones available is 16, only the first 14 Zones can be activated. The last two Zones ***must*** be disabled (set to 0).

To access the Hop Frequency setup page, navigate through HyperTerminal by selecting (3) Edit Radio Transmission Characteristics, from the Main Menu. See Figure 1.

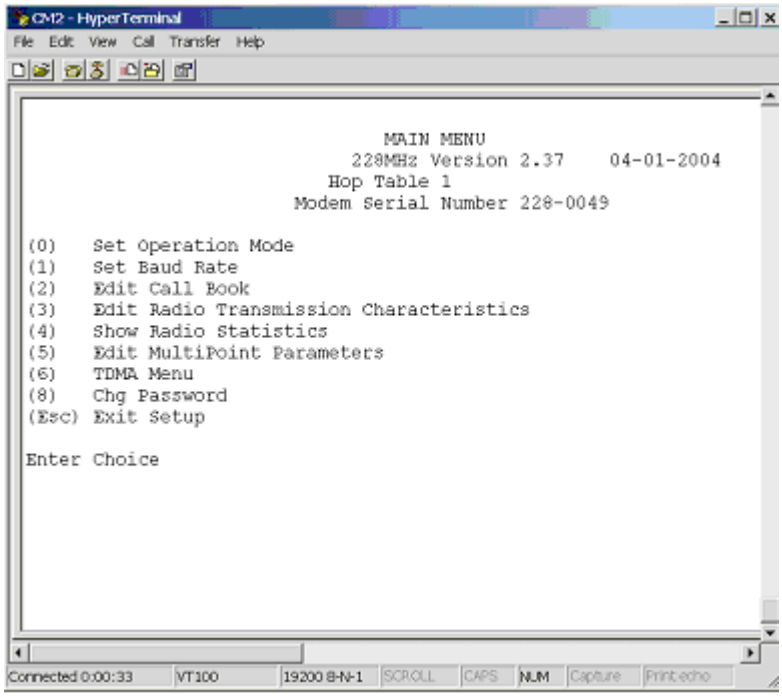

Figure 1

Then select (0) FreqKey. See Figure 2.

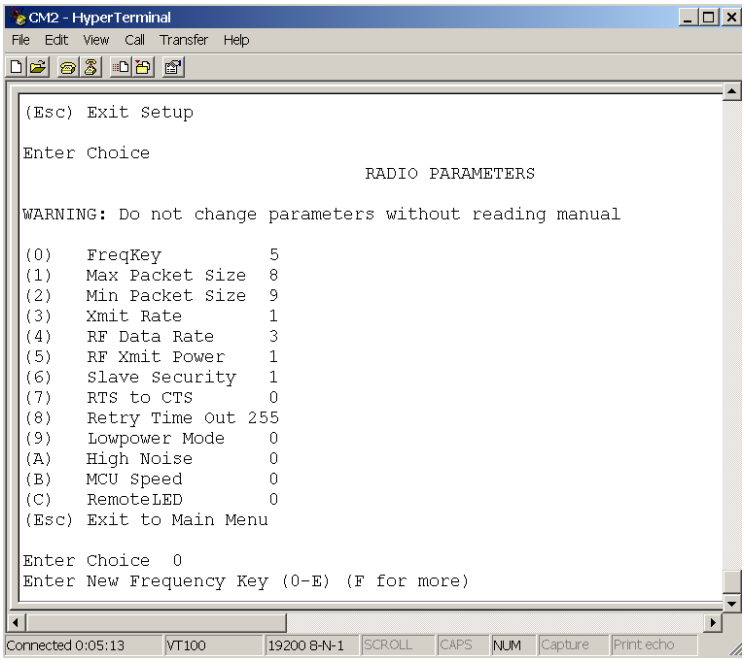

Figure 2

Then select F (F for more). See Figure 3.

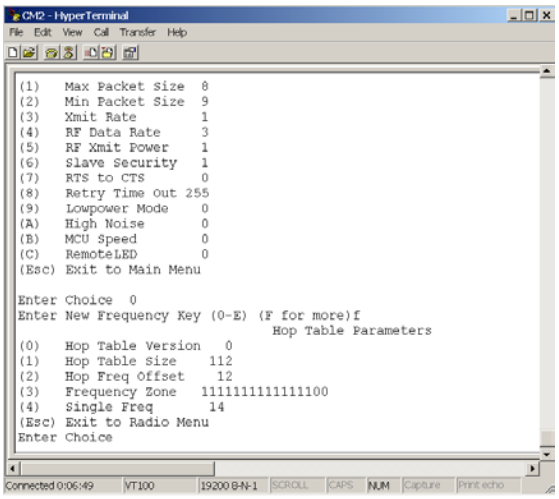

Figure 3

(0) Hop Table Version

The Q-Series radio transceivers need to use Hop Table Version 0. See Figure 4 See Table 1.

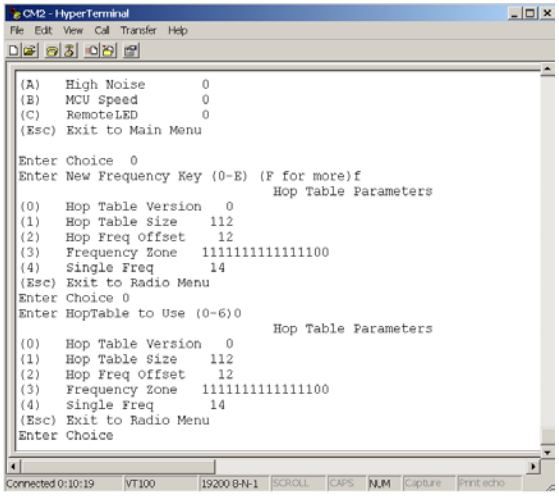

Figure 4

Selection	Name	Band
0	Standard	228-235 MHz. The FreqZone parameter determines the deactivated sections of the band
1…6	TBD	

(1) Hop Table Size

Within a specified band you can select the number of frequencies to use, ranging from 32 to 112. See Figure 5.

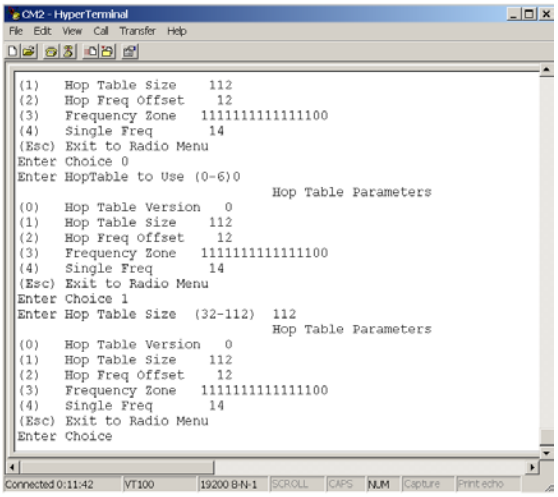

Figure 5

(2) Hop Table Offset

This parameter is restricted to 12.

(3) Frequency Zone

Frequency Zones are selectable by enabling each one individually. Select 3 then type 1 after each Frequency Zone needing to be enabled. See Figure 6.

Note: For Q-Series radios, Frequency Zones 15 and 16 ***must*** be 0.

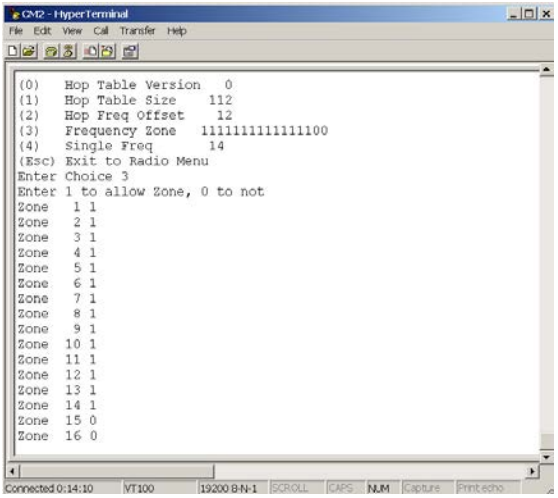

Figure 6

(4) Single Frequency

The Q-Series radio transceivers can be used in a single frequency mode. See Figure 7.

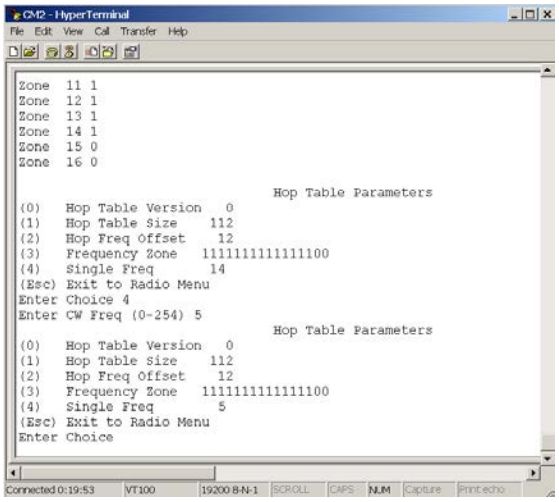

Figure 7

To enter Single Frequency Mode, the FreqKey parameter ***must*** be set to 15 in the Radio Parameters menu.

Note: On the Q-Series transceiver the Single Frequency selection is restricted to settings of **0** through **28**.

See the following table for Single Frequency Channel and Zone listings.

	Hop Frequency Offset = 12	Freq Zone
Channel	**Center Frequency**	
0	228.000 MHz	1
1	228.250 MHz	
2	228.500 MHz	2
3	228.750 MHz	
4	229.000 MHz	3
5	229.250 MHz	
6	229.500 MHz	4
7	229.750 MHz	
8	230.000 MHz	5
9	230.250 MHz	
10	230.500 MHz	6
11	230.750 MHz	
12	231.000 MHz	7
13	231.250 MHz	
14	231.500 MHz	8

	Hop Frequency Offset = 12	Freq Zone
Channel	Center Frequency	
15	231.750 MHz	
16	232.000 MHz	9
17	232.250 MHz	
18	232.500 MHz	10
19	232.750 MHz	
20	233.000 MHz	11
21	233.250 MHz	
22	233.500 MHz	12
23	233.750 MHz	
24	234.000 MHz	13
25	234.250 MHz	
26	234.500 MHz	14
27	234.750 MHz	
28	235.000 MHz	15
29	235.250 MHz	
30	235.500 MHz	16
31	235.750 MHz	

Table 2

Note: Zones 15 and 16 or Channels 28, 29, 30, and 31 are disabled for operation in Q-Series transceivers. These zones ***must*** be set to 0 in the Frequency Zone parameter.

Power Setting vs. Output Power

All Q-series transceivers are calibrated in the factory at an Output Power setting of 10, for an Output Power of 33 dBm (2 W). The power settings 9 to 0 are scaled down, incrementally. An Output Power setting of 0 results in an output of approximately -4 dBm (400 uW).

Known Limitations

As of Firmware version 2.68, the Minimum Packet Size of **0** is not currently supported in the Q-series radios.