



Technical Support

TECHNICAL NOTE

Technical Note TN-902-SR

TM8100 Mobile Radio Firmware v2.02 Upgrade Instructions

22 September 2004

Applicability

This Technical Note details the changes in the latest Firmware, PC Application and Calibration Applications and instructions on upgrading existing TM8100 radio Firmware to v02.02.00.07.

1. Information

Changes

The following changes have been made in Firmware v2.02 and PC Application version 2.68. The latest Calibration Application is version 2.70.

NOTE:

In order to make it easier to follow, the TM8100 Software versions are now only referred to by the Major and Minor numbers.

E.g.: The latest Firmware released, v02.02.00.07 is referred to simply as v2.02.

The first number is the Major version, the second number is the Minor version (this will increase each commercial release) the third number is the customer specific version (if a special patch needs to be provided) and the fourth number is the build.

The TM8115 2-digit control head can display the radio's Firmware version¹.

The LCD will display the Major, Minor and customer specific version numbers in sequence. This action has been slowed down from earlier Firmware versions to better decipher similar values.

E.g.: This Firmware will be displayed as '02.02.00.'

¹ From an off state, depress PTT, power-up the radio and release PTT.

First Production Serial Numbers

From radio serial number **19021739** all radios built have Firmware v2.02.

Upgrading radios to v2.02

Do NOT upgrade Demo / Field Trial (DMABxx) radios with serial numbers prior to **19001450** to later Firmware, this will render the radio inoperable.

To upgrade existing TM8100 Firmware to v2.02:

- Upgrade the Calibration and PC Application versions to the latest versions. These are:
 - PC Application v2.68
 - Calibration Application v2.70

- Read and save the radio's personality (.m8p)
- Read and save the radio's calibration (.m8c)

In the PC application:

- Click on Tools > Download... > **Download**
- The radio will display "UP" and the Download Application will look for the saved location of the Firmware QMA1Fstd_02_02_00_07.S2

NOTE: Firmware versions since v2.00 have also included the FPGA version, and this will be downloaded automatically during this upgrade process.

- The following pop-up dialog box will appear:



When the pop-up (above) appears during a Firmware upgrade the following procedure will apply:

- **Remove** the DC supply to the radio
- Wait 5 seconds
- Re-apply the DC supply
- Power-up the radio with the control head on/off button (if it has not already powered-up)
- The pop-up box will then disappear and the upgrade process continues.

Once the Firmware and FPGA download is complete the radio will return to "PR" mode

- Reprogram the saved personality back to the radio
- Reprogram the saved calibration back to the radio

The radio will now reset to normal operation.

2. Firmware Changes

Resolved Issues

- In v2.00 (R3) Firmware the TM8100 would start-up with a normal double beep and then indicate a low beep. This was indicating the Encryption feature was disabled, however this beep is unnecessary and was removed. Raised as Focus 17437.
- Two issues resolved with Voice Inversion (Encryption): If Encryption was active at power-down it would be active again at power-up, however the assigned Function button LED would not reactivate.
- The Encryption feature's voice inversion audio is now flat. Previously v2.00 (R3) Firmware pre/de-emphasized that audio. Raised as Focus 17005.
- An issue that arose when reading v1.01 (R2) or older Firmware radios with v2.68 (R3) PC Application was that unused Selcall Control Status Values would be misread and appear as 'Undefined'. Now these old files or radios, when read, modify all the Control Status Values to zeros, then when programmed, a final validation will advise the user to change the Control Status Values to unique numbers. Raised as Focus 16637.
- Resolved the fault where a TM8100 had an Auto Quiet Timer of 1 Second that the Selcall Auto Acknowledge CCDI Progress Message would not appear. Raised as Focus 16586.
- When downgrading a THSD enabled radio from v2.00 (R3) to v1.01 (R2), THSD would appear disabled because the persistent data address was incorrect. Focus 16333.
- The transmit timer alert beep is now no longer active when the TM8100 is operated in THSD or FFSK transparent mode. Raised as Focus 16823.
- Resolved a number of related issues around the radio entering a Transmit lock state, particularly in a THSD operation. Raised as Focus 16181.
- The receive signal on the auxiliary AUD_TAP_OUT would disappear if the radio was PTT keyed on a receive only channel. Only a reset would correct this. Raised as Focus 17331.

**Resolved
Issues
(continued)**

- Microphone audio is now muted during PTT release and Reverse Tone Burst durations. This had been noted as a noticeable 'click' on receiving radios. Raised as Focus 16810.
- At the request of a large data system user the RSSI analogue output was updated from 100ms polling interval to 25ms.
- Remote Monitor Reset, Third Tone Reset and C-Tone Reset functions will all now cancel an active Squelch Override as well as an active Monitor when received.
- The Programmable I/O line Busy Status was not updating if the current channel was changed while receive was active busy. The output would continue to indicate busy for all subsequent channels, until the radio was reset.

3. PC Application Changes

**PC Application
v2.68
Changes**

- Corrected the layout of the Tap-in and Tap-out columns found in *Programmable I/O > Audio* tab. In PC Application v2.66 (R3) the columns were transposed and did not match written publications. Raised as Focus 17259.
- There are new values added to the drop-down list for the *Programmable I/O* line input debounce times. These now include 0, 2, 5, 10, 25, 60, 100, 150 and 200ms. Raised as Focus 15328.
- Resolved an issue where clicking the channel drop-down would allow a duplicate channel 1 identity against the newly added channel.
- The channel page Summary list will now no longer 're-sort' the channel form with every change to an entry as before. The resort will now occur only when you leave the form, similar to the T2000 PC Application.
- The following fields on the *UI Preferences > Audio Setup* page have had these name changes: Dynamic Mic Support becomes Enable Options Board Preamp and in Emergency Mic: Standard becomes Control Head and Aux becomes Auxiliary.
- The free format burst sequence preset boxes on the *Free Format Bursts* page can now display all 60 characters of a string as required.

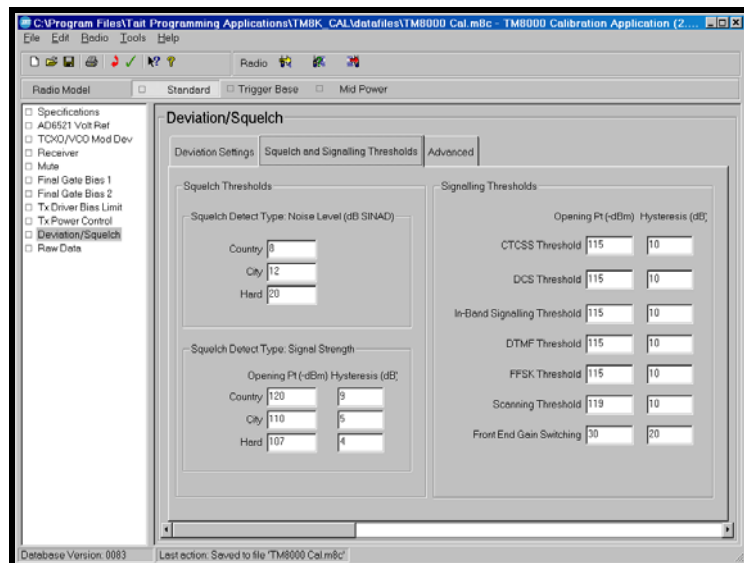
PC App Changes (continued)

- Group Stand-by Timer has been removed from the *Scan Groups > ID/Membership* page. This field had previously been present but not actually implemented due to a change in requirements.
- If CTS was assigned to a GPIOx line from the *Data* page it would set the Signal State to 'Momentary'. This was not the correct requirement and has been corrected keep the state as 'None'.

4. Calibration Changes

Calibration Application v2.70 Changes

- The default sub-audible deviation value has been lowered from 15% previously, to 12%. This is in response to comments the CTCSS deviation was higher than expected. Raised as Focus 14126.
- There has been an update to the VCXO and VCO sanity checks values. As the size of the produced samples has increased a more concise average can be collated.
- There have been changes to the *Deviation/Squelch > Squelch and Signalling Thresholds* tab layout to better display which parameters are related to each Squelch type. See screenshot below.



Compliance None.

CSO Instruction Please inform all technical staff and dealers of the updates to the PC Application, Calibration Application and radio Firmware available for the TM8100 mobile radio.

5. Issuing Authority

Name and Position of Issuing Officer Graham Brenchley
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