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**TECHNICAL NOTE TN-1234-AN**  
**TM8000, TM9100 and TP9100 Firmware  
Upgrade Process**

7<sup>th</sup> March 2007

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**Applicability**

This Technical Note details how to upgrade Firmware in the TM8000 mobile, TM9000 mobile and the TP9000 portable range of radios.

## 1. Introduction

It is possible to upgrade the firmware in the TM8000 and TM/P9000 range of terminals adding features (some features may require a Software Feature Enable (SFE) key) and/or resolving issues found in previous versions. This technical note describes the process of upgrading the firmware in these products.

**Note:** The upgrade instructions for the TM8200 apply equally to the TM/P9100 as well. The Download Application is the same for both products, only the Programming Applications are different.

## 2. Upgrading firmware

**Saving the Calibration file STEP 1**

- Open the TM8000 or TM/P9100 Calibration Application from the Start Menu of Windows. **Start > Programs > Tait Applications**
- In this application select the com port required in **Tools > Options**.
- Read the radio's Calibration information using **Radio > Read** or clicking the Yellow arrow read-from-radio icon on the toolbar.



- Once completed save this file to the PC by selecting **File > Save As**.

**Saving the personality file STEP 2**

- Open the TM8100, TM8200 or TM/P9100 Programming Application from the Start Menu of Windows. **Start > Programs > Tait Applications**.
- In this application select the com port required in **Tools > Options**.
- Read the radio's personality datafile using **Radio > Read** or clicking the Yellow arrow read-from-radio icon on the toolbar.
- Once completed save this file to the PC by selecting **File > Save As**.

**Upgrading TM8100****STEP 3a**

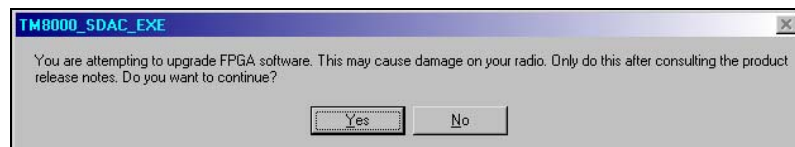
- Select the Download application in the TM8100 Programming Application. This is located in **Tools > Download**
  - A new window will open.
- On this window you can view the currently loaded firmware version(s) by clicking **Report Configuration**.
- To change the firmware version click the **Download** button.
- A 'browse' window will open to search for the saved location of the new firmware.

Firmware is labelled either QMA1Fstd\_xx\_xx\_xx.s2 or TM8100\_FW\_vxx\_xx\_xx.s2.

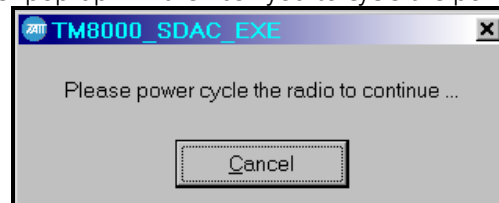
- Once the firmware file is located click 'Open'.

The Downloading will start automatically.

- The following windows may appear:



- Click Yes.
- Another pop-up will then ask you to cycle the power to the Radio.

**STEP 3b**

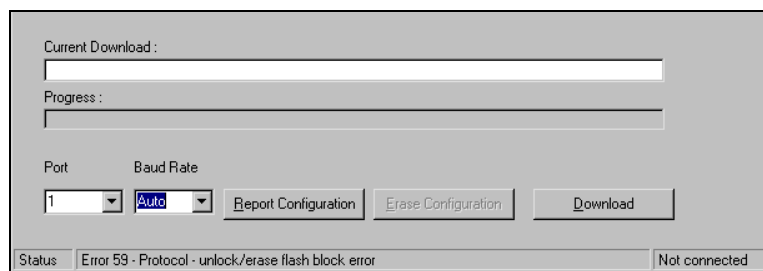
- Do this by **removing** the DC supply to the radio.
  - Wait 5 seconds.
  - Re-apply the DC.
- **NOTE:** Some radios that do not have Link-1 fitted will require the front panel button to be pressed now.
- The TM8115 radio will then display 'UP' during the upgrade process.
- Once the upgrade process is complete the Radio's display may change to 'Pr' or return to channel display.

This means that the download process has now completed.  
Proceed to STEP 5.

## Getting Error 59 ?

If, during the upgrade procedure, you see:

"Error 59 – Protocol – unlock/erase flash block error" in the Status display the radio has not been reset correctly as defined in Step 3b above. Ensure the DC supply is removed from the radio as this correctly resets the FPGA device.



## Upgrading TM8200 or TM/P9100 STEP 4a

Other than using the TM8200 or TM/P9100 Programming Application instead of the TM8100 PC App, the process for upgrading a TM8200 and TM/P9100 radio is exactly the same as the TM8100 defined previously.

### NOTE:

**Complete STEP 1  
And STEP 2 first.**

The only differences to note are that, in the case of the mobiles, there is firmware in the Control Head and different firmware version codes for the body and the head. These are identified below:

### TM8200:

QMA2A\_std\_x\_xx\_xx\_xxxx.Srec – Mobile (Body DSP) Firmware.  
QMA2F\_std\_x\_xx\_xx\_xxxx.Srec – Mobile (Body) Firmware.  
QCA2F\_std\_x\_xx\_xx\_xxxx.Srec – Control Head Firmware.

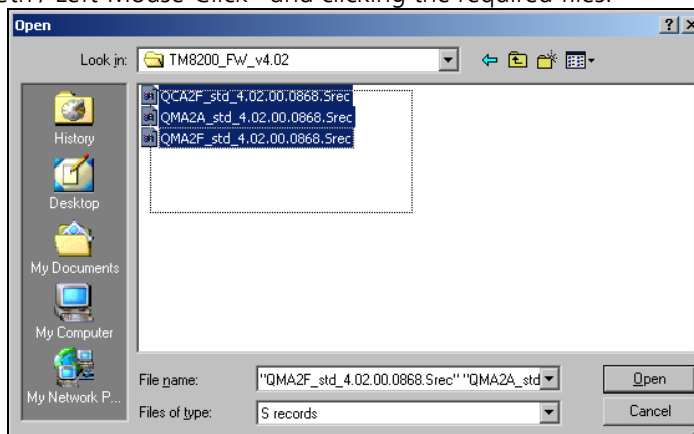
### TM9100:

QMA3A\_A00\_x\_xx\_xx\_xxxx.Srec – Mobile (Body DSP) Firmware.  
QMA3F\_A00\_x\_xx\_xx\_xxxx.Srec – Mobile (Body) Firmware.  
QCA2F\_A00\_x\_xx\_xx\_xxxx.Srec – Control Head Firmware.

### TP9100

QPA1A\_A00\_x\_xx\_xx\_xxxx.Srec – Portable (DSP) Firmware.  
QPA1F\_A00\_x\_xx\_xx\_xxxx.Srec – Portable Firmware.

- In the 'browse' window you can select all required files by pressing "Ctrl / Left-Mouse-Click" and clicking the required files.



- Click Open and the process will continue. The files will write to the radio body and control head in sequence.

On completion, the Download Application will refresh the display with the installed versions.

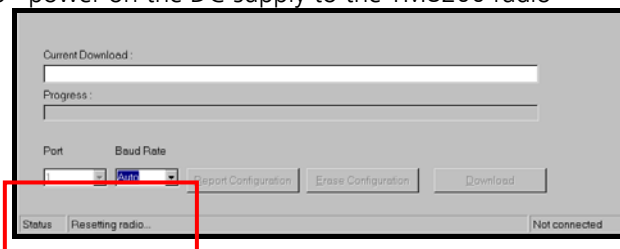
Proceed to STEP 5.

### Upgrading TM8235 or TM825x / TM8260 Body only

**NOTE:**  
Complete STEP 1  
And STEP 2 first.

**STEP 4b** If the requirement arises to upgrade a TM8235 radio or the body only of a TM825x / TM8260, follow these steps:

- Switch off DC supply to the assembled TM8200 radio
- Select the Download application in the TM8200 Programming Application. This is located in **Tools > Download**
  - A new window will open.
- Click **Report Configuration**.
- When the 'Status' in the bottom left of the Application says "Resetting Radio" power on the DC supply to the TM8200 radio



- When the read is complete switch off the DC supply again
- To update the body's firmware and DSP versions (QMA2Fstd\_xx.. and QMA2Astd\_xx..) to the same as the head click the **Download** button.  
A 'browse' window will open to search for the saved location of the body firmware.
- Once the two files are located and selected click 'Open'
- When the 'Status' in the bottom left of the Application says "Resetting Radio" switch on the DC supply to the TM8200 radio
- On completion of these the radio should reset and power-up to normal operation.

Proceed to STEP 5.

**Tip:** If the TM8200 control head is not available and you have a spare TM8100 control head this can be used instead to upgrade the body alone. The upgrade process is identical to that detailed for body above, the only difference is the download application will only display the body's versions at Report Configuration. On completion, proceed to STEP 5.

### Upgrading TM8200 or TM9100 Control Head only

**STEP 4c** If the situation arises where the TM8200 or TM9100 control head only requires upgrading, follow these steps:

- Switch off DC supply to the assembled radio
- Select the Download application in the Programming Application. This is located in **Tools > Download**
  - A new window will open
- Click **Report Configuration**.
- When the 'Status' in the bottom left of the Application says "Resetting Radio" switch on the DC supply to the radio  
(See screenshot above)
- When the read is complete switch off the DC supply again
- To update the control head's firmware version (QCA2F\_XXX\_XX..) to the same as the body click the **Download** button.
  - A 'browse' window will open to search for the saved location of the control head firmware.
- Once the firmware file is located and selected click 'Open'
- When the 'Status' in the bottom left of the Application says

“Resetting Radio” switch on the DC supply to the radio

- On completion of this the radio should reset and power-up to normal operation.

Proceed to STEP 5.

**NOTE:** This is not a required step for the TM8235 as the 3-digit TMAC60-0T control head contains no Firmware.

### STEP 5 Programming back the databases

- Close the Download Application window.
- In the relevant Programming Application load in the previously saved customer's datafile. Click **File > Open**.
- Write the database to the radio using either **Radio > Program** or clicking the Red arrow write-to-radio icon on the toolbar.

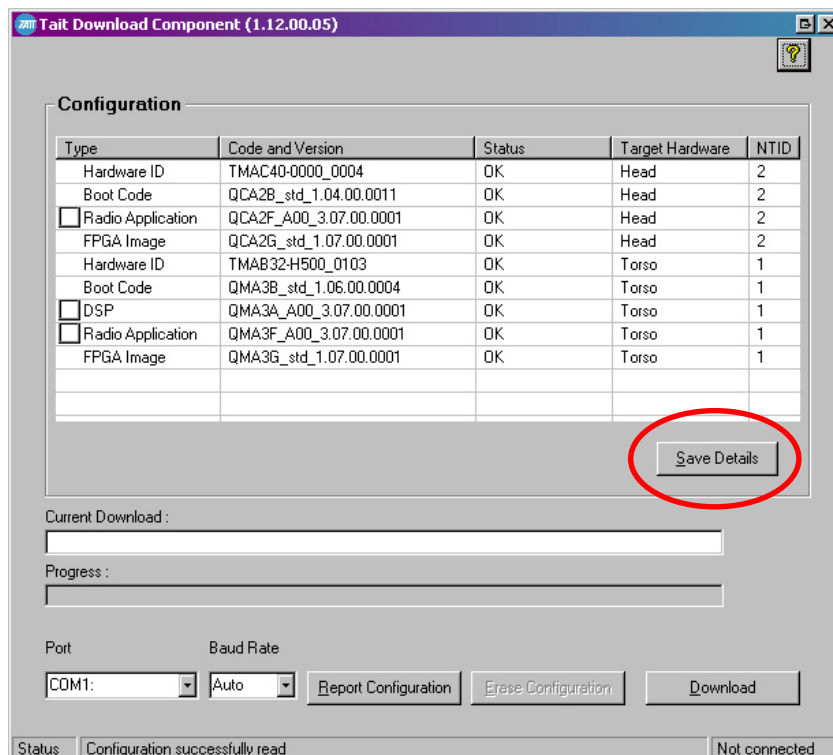


- Once completed close the Programming Application.
- Click (or open) the TM8000 or TM/P9100 Calibration Application.
- Load the previously saved customer's calibration datafile. Click **File > Open**.
- Write this file into the radio by selecting **Radio > Program** or clicking the Red arrow write-to-radio icon on the toolbar.
- Close the Calibration Application.

Upgrade process complete.

## 3. Saving the Radio Configuration Details

There may be situations where the user will be asked to send the details of their configuration to Tait. This can be achieved by clicking on the “Save Details” button on the Download Application. The user will be asked to name the file and select a location where it will be saved as a “.csv” file.



The saved “.csv” file can be opened in Microsoft Excel®.

	A	B	C	D	E	F
1	Type	Code and Version	Status	Target Hardware	NTID	
2	Hardware ID	TMAC40-0000_0004	OK	Head	2	
3	Boot Code	QCA2B_std_1.04.00.0011	OK	Head	2	
4	Radio Application	QCA2F_A00_3.07.00.0001	OK	Head	2	
5	FPGA Image	QCA2G_std_1.07.00.0001	OK	Head	2	
6	Hardware ID	TMAB32-H500_0103	OK	Torso	1	
7	Boot Code	QMA3B_std_1.06.00.0004	OK	Torso	1	
8	DSP	QMA3A_A00_3.07.00.0001	OK	Torso	1	
9	Radio Application	QMA3F_A00_3.07.00.0001	OK	Torso	1	
10	FPGA Image	QMA3G_std_1.07.00.0001	OK	Torso	1	
11						
12						
13						

#### Related Documents

TN-969d (Obsolete)

#### Compliance Issues

None.

#### CSO Instruction

Inform all sales and technical staff and dealers of the upgrade process instructions.

## 4. Issuing Authority

#### Name and Position of Issuing Officer

Paul Anderson  
Technical Support Engineer

Graham Brenchley  
Technical Support Engineer

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#### Distribution Level

Associate.

#### Document History

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