

## Technical Note TN-1510-SR

# TP8100 Firmware Upgrades and Programming Utilities v2.09

31 January 2011

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This Technical Note applies to the final commercial release of the TP8100 portable radio platform.

The latest **Conventional Firmware** for the TP8110, TP8115 and TP8120 is **v1.10**.  
The previous commercial release was Firmware v1.07.

The latest **MPT1327 Trunked Firmware** for the TP8135 and TP8140 is **v2.11**.  
The previous commercial release was Firmware v2.05.

The TP8100 Programming Utilities Installation Package **v2.09.00** contains:

- TP8100 Conventional Programming Application **v2.08**
- TP8100 Trunked Programming Application **v2.08**
- TP8100 Calibration Application **v2.09**

The previous Programming Utilities was TP8100 TPU v2.05.00.  
The previous commercial release Firmware and applications are detailed in TN-1459-SR.

## 1. Firmware Changes

### Conventional v1.10

#### Selcall Always Transmitted With Pre-emphasis

Previous versions of firmware had the 'in band signalling' pre-emphasised whether the NETWORKS > BASIC SETTINGS > SIGNALLING PRE-EMPHASIS checkbox was selected or not. The checkbox now operates correctly.

#### Variable L0 value

The 'L0' level has been made selectable from this release.  
Please refer to 'Calibration Application Changes' for more information.

#### 'Group Scan/Vote' Deactivates Monitor

On previous versions of Firmware the 'Monitor' or 'Squelch Override' functions were not disabled when scanning/voting was activated. This meant the radio captured channels which did not contain correct signalling (e.g. CTCSS). TP8100 portables with Firmware v1.10 operates as TM8000 mobiles do.

#### Emergency Callout on Vote Groups

The operation of emergency callout while scanning has been modified. On previous Firmware versions, emergency calls were made on the home channel (the first entry in the group list) when the vote 'Group Hold Time' had expired. From Firmware v1.10, when the vote 'Group Hold Timer' has expired emergency calls are made on the last voted channel. If no channel has been captured, emergency calls are made on the home channel.

#### TVS-2 Encryption 'Whistle While Gating'

On previous versions of Firmware, the TP8100 speaker was opening for 35ms prior to the TVS-2 encryption board receiving the COR signal. This created a 'crunching sound' at the beginning of an over. This has been resolved by muting the radio for 50ms when the TVS-2 board is fitted.

## MPT1327 Trunked v2.11

### Delay Prior to Sending Caller ID

In previous versions Caller ID pressel messages were sometimes lost when used with sub-audible signalling. This is due to the base stations requiring valid CTCSS *prior* to passing the Caller ID through the audio path. While transmitting, a small delay has been introduced prior to the TP8100 generating the Caller ID pressel message, providing time for the base station to validate sub-audible signalling.

### “Flag2” No Longer Set During SOS Calls

Historically the MPT1327 parameter ‘Flag2’ was set during SOS emergency calls on TP8100 Firmware. This is no longer active with this call type.

### Clear Call FFSK Amplitude in ‘French’

Some MPT1327 networks use NETWORK IDENTITY > PRE-EMPHASIS > FRENCH FFSK. While in this configuration, the call clear message generated by the radio was occasionally of low amplitude. This has been increased to the same amplitude as ‘OTHER’ FFSK signalling.

### TVS-2 Encryption ‘Whistle While Gating’

This is the same solution described in Conventional Firmware on page 1.

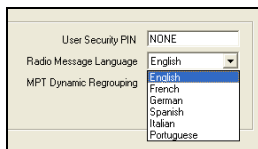
### Changes to Audio De-Emphasis On Traffic Channels

A correction made to the DSP filters now sets the de-emphasised audio correctly when TP8100's are on MPT1327 traffic channels.

### Receiver Sub-audible Filter Disabled on Transmit

Occasionally a 2kHz tone was generated by a transmitting TP8100 if the Trunked Channel Block has CTCSS enabled. This was caused by a DSP receive filter running while the TP8100 was transmitting. Raised as Focus 34886 and 41220.

## 2. Programming Utilities v2.09 Changes



### Conventional Programming Application v2.08

#### New Radio User Interface languages

Added German, Italian and Portuguese translations for the radio UI messages for both Conventional and MPT1327 models. The dropdown box for these is found in SPECIFICATIONS > RADIO MESSAGE LANGUAGE of the CPA and TPA.

#### Selcall Custom Tone Set error

Previous versions of TP8100 CPA did not save any modifications made on the SELCALL AND STATUS > CUSTOM TONE SET form correctly when the user exited the page.

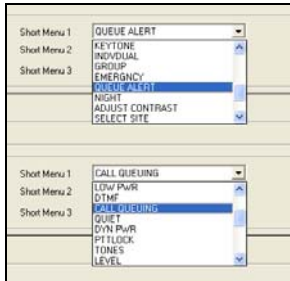
#### Error message when frequency outside band limit is entered

A correction has been made to error handling when an in-band, but incorrect frequency (not divisible by 5 or 6.25 kHz) is entered using factory mode.

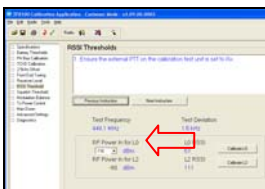
#### Datafile import validation changed

Previously, importing an Orca5000 G-Band (336-400 MHz) datafile into the TP8100 CPA would produce a warning pop-up if some of those frequencies were outside of the TP8100 G2's band (**350**-400 MHz) coverage. The pop-up will no longer appear, but any frequencies between 336 and 350 MHz will now automatically reset to ‘0’.

## Trunked Programming Application v2.08



## Calibration Application v2.09



### Copy and Paste 'Preset Calls' and 'Status Labels'

This release allows Preset Calls and Status Labels to be added, copied and pasted as per the TM8000 PC Applications. This capability also automatically changes any lower-case characters to upper-case.

### TPA validation for 'SOS Call'

A validation was added to ensure 'SOS Call' – when configured for a Function key – has an identity entered before leaving the SOS OPTIONS page.

### Duplicate display of 'Queue' in Short Menu Key

There were two default entries with the word 'Queue' listed in the Short Menu Key drop-down list, so the following changes were made:

- 'QUEUE' which relates to USER DEFINED MENU > ALERT SETTINGS becomes 'QUEUE ALERT' see screenshot (top left)
- 'QUEUE' which relates to USER DEFINED MENU > USER SETTINGS becomes 'CALL QUEUING' see screenshot (bottom left)

### Changing the 'L0' Value

A radios 'L0' setting determines the minimum signal strength required to acquire a trunked control channel. Currently all TP8100 (and Orca5000) radios have this value fixed at -116dBm.

As portables have a lower transmit power relative to mobiles there may be situations in fringe coverage areas where the portable can receive signalling from a base station, but may not have the RF power to communicate back. This can cause apparent "Call setup failures" where user's thought there was enough (Rx) signal to setup a call.

To overcome this some network operators prefer to calibrate radios to higher L0 values – typically -106dBm – to ensure usable coverage matches the capability of the portable's transmitter power.

From Calibration Application v2.09 onwards, the 'L0' level can be selected and calibrated using the RSSI THRESHOLDS form. See screenshot (left).

**NOTE:** If TP8100 radios with Firmware prior to v2.11 are read using the v2.09 Calibration Application, the 'L0' dropdown field will remain 'greyed-out' containing the default value of -116dBm.

To change the L0 level on these radios, radio Firmware will need to be upgraded.

Changing this value will also affect conventional scan mute levels and the RSSI indicator.



### Perform All Calibration Tests

If the 'Perform All Calibration Tests' toolbar icon (left) is clicked, the sequence of tests now runs down the list correctly.

### TP8100 Board Replacement – 'PA Bias' Form Now Available

PCB spares kits are now available for TP8100 radios.

As part of the board replacement process, it is necessary to recalibrate the radio (please refer to TN-1491-AN). The PA BIAS calibration form can now be viewed in Customer Mode to allow full calibration of the radio.

### TP8100 Board Replacement – Changing a TP8100's band with no HASP

When replacing a TP8100 control board, the radio's frequency band must be set (See TN-1491-AN). This can now be done using the Calibration Application in Customer Mode, without requiring a HASP/Dongle.

### 3. Known Issues or Limitations

#### Calibration App

The Calibration Application needs to be run in English language as there are some calculations done where only the dot [.] is recognised as the numerical separator and not the comma [,] used in some languages.

#### Conventional App

If a Custom Selcall tone set is defined in CUSTOM TONE SET > TONE SET TO RE-DEFINE > USER DEFINED attempting to use the tone '1830Hz' the application will advise this is unavailable as it conflicts with other tones. This occurs incorrectly due to a table error.

### 4. Publication Information

#### First Serial Numbers

The first production TP8100 radios with these Firmware versions are:  
Conventional v1.10 – Serial Number **TBA**.  
MPT1327 Trunked v2.11 – Serial Number **TBA**.

#### Related Documentation

TN-1491-AN for Board Replacement.  
TN-1298 TP8100 Firmware Upgrade Procedure

#### Compliance Issues

None.

#### Compatibility Issues

None.

#### CSO Instruction

Inform all service staff and dealers of the released information.

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Associate.

#### Document History

Issue	Date	Description	Author
–	31 January 2011	First release	N Intemann