

TB7100 base station

Release Notes



This technical note contains late-breaking information to accompany the December 2005 release of the TB7100 base station. This release comprises the following software versions:

- TB7100 Tx and Rx sub-assembly firmware version 02.08.00.00.
- Programming software version 1.06.00.0000.
- Calibration software version 1.03.0003.

1 What's in This Release

This release of the TB7100 platform provides a new internal AC power supply design.



Note For D1 band-specific information refer to TN-1135-SR.

The same 1U high TB7100 now supports both an internal AC power supply and internal duplexer, at the same time. This has been made possible by using 'Planar' transformer technology.

The internal PSU supports all RF output power and frequency band product variants at full duty cycle and temperature ranges. 110 or 230 volt operation is provided via an internal voltage selector switch. The TB7100 can now be obtained as either a DC only or AC/DC product, an AC only product will not be offered.



Note While the PSU supports 110 and 230 volt operation, the correct switch selection must be made via the internal voltage selector switch on the PSU PCB. Failure to observe the correct switch setting may result in unit damage.

The internal chassis design for the new AC PSU differs from the pre-AC release 'DC only' chassis. The most noticeable change is a rotation of the internal duplexer mounting location. Likewise pre-AC release 'DC only' chassis are not compatible with AC release and later 'DC only' chassis.

On the Product CD you will also find extensive product documentation, including:

- Installation and Operation Manual (MBB-00001-02).
- Specifications Manual (MBB-00002-02).
- Installation Guide (MBB-00003-02).

2 Compatibility

It is important that you read and understand the following general principles of compatibility:

- You should always use the same firmware in both TB7100 radio sub-assemblies.
- Although the TB7100 is based on the TM8100, you should **never** install TB7100 firmware into a TM8100, or install TM8100 firmware into a TB7100.
- The TB7100 PC applications will not allow you to read or program a TM8100 radio, and the TM8100 PC applications will not read a TB7100 radio.
- You should never use TM8100 radio assemblies in a TB7100 channel. Physical interferences with the TB7100 metalwork and various component sub-populations and value differences will inhibit features and performance. Component differences for some countries will also invalidate compliance approvals.

As this release of the TB7100 is based extensively on the TM8100 radio platform release 02.06.00.00, the majority of the feature set, operation and Known Issues and Limitations (KIOLs) of the TM8100 also apply to the TB7100 platform.

The following table specifies all compatible configurations of the TB7100 base station. A compatible configuration is a combination of radio sub-assembly hardware, radio sub-assembly firmware, programming software, and calibration software, where each part of the whole is compatible with all the other parts.

- Each row in the table identifies a compatible base station configuration.
- Each cell within a row contains the version number of the radio sub-assembly hardware, radio sub-assembly firmware, programming software, and calibration software that is compatible with the other versions in the row. If a cell contains more than one version number, more than one version is compatible.
- Table footnotes indicate any restrictions imposed on a particular combination by the version of hardware, firmware, programming software, or calibration software.
- Any other combination is not compatible and not supported.

Radio Sub-assembly Hardware	Radio Sub-assembly Firmware	Programming Software	Calibration Software
01.02	02.08.00.00	1.06.00.0000 1.04.00.0001	1.03.0003

3 Issues Fixed

The following is the full list of known issues or limitations from previous versions that have been fixed in this release.

Tait Reference	Headline
00048785	Tap Type "Combine 0dB" No Longer Working

4 Known Issues or Limitations

Firmware upgrade failure recovery method

Tait reference: 00043708 It is possible that a firmware upgrade could fail; for example, if power is accidentally removed during the upgrade. When a firmware upgrade fails and you cannot re-establish communications with the RF module, changing the programming application's baud rate setting to 19k2 may allow you to complete the upgrade.

Calibration Application: Instruction sequencing could be improved

Tait reference: 00045505 When you are performing a re-calibration on the TB7100, it is important that after each step you advance both the 'instruction' prompt and the 'calibration controls' prompt. If both are not individually advanced by the end user, they can get out of sequence, resulting in instructions and tasks not relating to each other.

No fan Operation with PTT and THSD transmissions.

Tait reference: 00046596 When "On_Tx" has been selected as the fan control method, the TB7100 will not turn on its fans under the following two situations: 1) When a user transmits using the front panel microphone. 2) Whenever a THSD transmission occurs. We recommend you use the fan turn-on "temperature" configuration setting in these instances to ensure that, if an over-temperature condition does occur, the fans will still operate.

When "Pr" is displayed after a firmware upgrade

Tait reference: 00046722 It is good practice to save the electronic configuration and calibration data of any product you use before you start a firmware upgrade. Tait also recommends you save this data prior to a firmware upgrade. After you upgrade a TB7100 module, it is possible that you will be requested to re-load the configuration file. This will depend on the firmware updates implemented. A "Pr" on the TB7100 LCD display indicates the configuration file must be re-loaded. For this reason, always read and save the Tx / Rx configuration file to your computer's hard disk before a firmware upgrade.

Software flow control

Tait reference: 00046998 The TB7100 does not support flow control, even though both RF assemblies can be configured to use it. The architecture of the TB7100 requires that the SI microprocessor be fitted to support Software Flow control correctly. There are currently no plans to fit the SI microprocessor.

Out-of-lock is not displayed for invalid channel

Tait reference: 00047040 The TB7100 modules will generate an out-of-lock "OL" indication on the front panel only if both the Tx & Rx frequencies are invalid. In the case of the receiver module, it is therefore possible that, if an invalid Rx and valid Tx frequency is programmed, the out-of-lock display will not be generated. To guarantee an "OL" display is generated, we recommend that, in the case of the receiver module, users program invalid frequencies for the unused Tx sub-system, and vice versa for the transmitter module.

Possible power-up failure after firmware download

Tait reference: 00047129 If the front panel Tx/Rx switch is changed or power is removed from the TB7100 during a critical phase of a firmware download, you may have trouble connecting to the associated TB7100 module again. This is due to the download of the bootloader getting corrupted. To resolve this, repeat the firmware upgrade on the associated Tx/Rx module using a TM8100 control head plugged directly onto the Tx/Rx module. After this has been completed, replace the TM8100 control head with the normal TB7100 front panel and wiring solution.

Digital I/O LNK information messages

Tait reference: 00047955 If the configuration of AUX_GPI2 (Emergency Mode) and AUX_GPI3 (Power Sense) is changed, the information messages referring to LNK settings can be ignored. The TB7100 module assemblies already have the associated LNK removed as standard. However, if the functionality associated with the LNK is indeed required, the LNK will need to be re-installed.

Loss of more than 10% of characters in THSD

Tait reference: 00047978 The following configuration can result in the loss of up to 10% of user data:

- the THSD setting of the radio terminal rate is 9600
- the channel bandwidth is wide band
- the THSD wide band modem is used without FEC.

This fault is unique to this configuration.

This can be resolved by taking any one of the following actions:

- a) Change the terminal baud rate.
- b) Turn off the wide band modem.
- c) Use FEC.
- d) Use narrow band.

TB7100 PC applications that do not install or un-install

Tait reference: 00048227 It is possible that the TB7100 Programming and Calibration applications will not install on a computer, with error messages indicating other Tait applications must be removed first. Tait has been updating its software platforms over the past year to allow multiple applications to exist together. If this message occurs, it indicates you have an old version of software on your machine that does not support multiple Tait applications on the one machine. You will need to un-install the old software version causing the problem, obtain a newer version, and re-install it if required. Once this is completed, you will be able to install the TB7100 application.

In general, Tait applications may not run, or could create problems when installing and un-installing other Tait applications, if they have version numbers lower than those listed below:

TB7100 Programming Application 1.04.00
TB7100 Calibration Application 1.03.00
TM8100 Programming Application 2.72.00.0002
TM8200 Programming Application 1.01.00
TM8000 Calibration Application 2.70.00.0019
TM9100 & TP9100 Programming Application 1.0.0.0
TM9100 & TP9100 Calibration Application 1.0.0.1

This is not just a TB7100 issue. This problem could be encountered for any new Tait software installation on a PC that has old Tait software already installed.

TB7100 AC system

Tait reference: 53079 If the base station is transmitting when there is an AC mains failure, there can be a glitch in the power supplied to the transmitter causing it to go off the air. Re-keying the transmitter will bring it on again. To ensure seamless changeover from AC mains to an external DC supply, a resistive load should be plugged into the TB7100's AC mains supply. The load could be simply a 25W incandescent light bulb. This will ensure seamless changeover even when the basestation is transmitting.

If the base station is not transmitting, AC/DC change over will be seamless without a resistive load on the mains circuit.

For AC mains to external DC changeover to occur, the AC supply must fail completely. Low mains voltage (Brown out) may not be sufficient to enable a change to external DC input.

CWID will only transmit once if transmission of string is longer than interval

Tait reference: 51100 If a CWID string is programmed into a TB7100 that will take longer than the interval time selected to transmit, the TB7100 will only send the CWID message once. For successful repeating CWID transmissions the interval period must always be set to a value that is greater than the time to transmit the CWID message.

Calibration Application: Power control form sliders not saving values

Tait reference: 52649 When adjusting the Power control sliders in the calibration application the new values may not save correctly. If you check the value on the 'Raw Data' form they can be completely different. This fault is intermittent and a work around is to only adjust one slider at a time, then check the value on the Raw data page. Go back to the slider page and adjust the next slider once the previous slider value changes are correctly reflected on the 'Raw Data' page. Repeat this process until all sliders reflect the changes you require.

5 Issuing Authority

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6 Publication History

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