TB8100 base station

Release Notes

This technical note contains late-breaking information to accompany the August 2005 release of the TB8100 base station. It also provides additional information about:

■ Service Kit software version 02.07.

■ Reciter and PA firmware versions 02.07 and earlier.

■ PMU firmware versions 02.08 and earlier (refer to , Tait reference 00050162).

1 What's New in This Release

The following features and enhancements are new as compared with earlier versions. For more detail, see the Installation and Operation Manual and the Service Kit online Help.

L-band (900 MHz) Base Stations Now Available

TB8100 base stations are now available for operation in L band. The actual bands and sub-bands are as follows:

|	Frequency Band and Sub-band
Reciter	L1 = 852 MHz to 854 MHz, and 928 MHz to 930 MHz L2 = 896 MHz to 902 MHz (receive only) L2 = 927 MHz to 941 MHz (transmit only)
PA (5 W and 100 W)	L0 = 850 MHz to 960 MHz

Paging

The TB8100 now supports POCSAG paging. The TBA101B paging applications board plugs into the system interface connector at the rear of the reciter, and converts a logic-level data input signal into a POCSAG RF output signal for 512, 1200, and 2400 baud data rates.

The TBA101B board can only be used on frequency bands and at power levels which have the appropriate paging compliance. For more information on current TB8100 paging compliances, consult the TB8100 Product Manager, or your nearest Tait Customer Service Organisation.

For more information on installing and configuring the TBA101B paging applications board, refer to TN-1047.

Export and Import of Service Kit Connections

You can now export connection definitions from a Service Kit and import them into other Service Kits. This is particularly valuable if your system has a significant number of base stations, each of which needs its own remote connection definition.
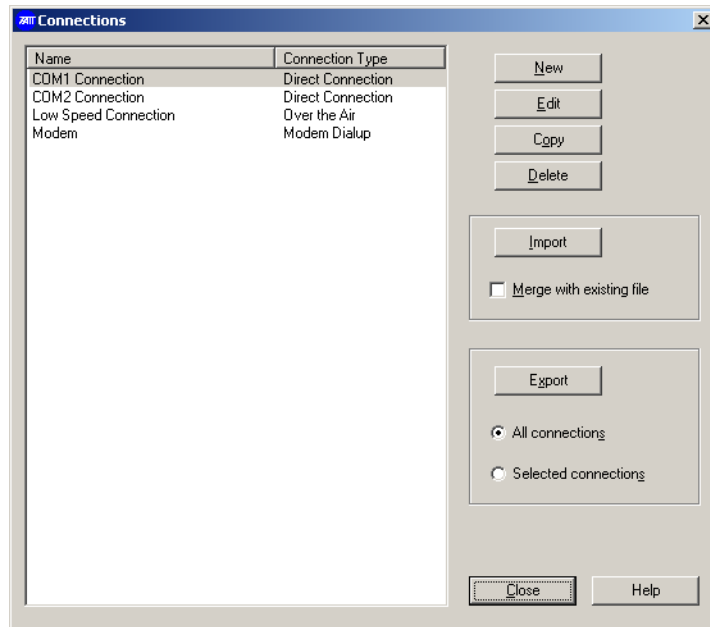
Importing Connections

You can import a file containing connections that have been exported from another Service Kit. You have the option of merging the imported connections with existing connections.

Merging adds the imported connections to the existing connection list. If there is a name clash, the imported connection is renamed. For example, Modem would be renamed to Copy (1) of Modem.

If you don't merge the imported connections, they replace all the existing connections.

To import connections

1.   Copy a TB8100 connections file (★.t8n) from another Service Kit into the main folder of your Service Kit program.

2.   If you don't want to replace the existing connection list, select the Merge with existing file check box.

3.   In the Connections dialog box (Tools > Configure Connections), click **Import**.

4.   If necessary, select the desired connections file.

5.   Click **Open**.

Exporting Connections

You can export Service Kit connections. This results in a TB8100 connections file that you can import into other Service Kits. It also generates a text file that lets you view the details of each connection.

To export connections

1. In the Connections dialog box (Tools > Configure Connections), specify whether you want to export all connections or just a selection.

2. If you chose the selected connections option, select the connections you want to export. You can use the Shift key to select a block of connections or the Control key to select additional individual connections.

3. Click **Export**.

4. If necessary, specify the path and file name for the connections file.

5. Click **Save**.

    The Service Kit saves the file, giving it the extension .t8n. It also saves an equivalent text file with the same name and with the extension .txt. The text file gives you a readable view of the exported connections. Editing this file has no effect on the exported connections.

2 Compatibility

When the Service Kit is used for reading or programming a base station with modules that have earlier firmware versions, rules are applied to convert between new and old data versions, as explained in the Service Kit online Help.

The following table specifies all compatible configurations of the TB8100 base station. A compatible configuration is a combination of module hardware, module firmware, Service Kit software, and Calibration Kit 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 hardware, firmware, Service Kit software, or Calibration Kit 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, Service Kit software, or Calibration Kit software.

■ Any other combination is not compatible and not supported.

Base Station Hardware				Base Station Firmware			Service Kit Software	Calibration Kit Software
Reciter	PMU	PA	Control Panel	Reciter	PMU	PA		
00.04 00.03 00.02 00.01[a+b+c]	00.02 00.01 00.00[d+e]	00.01 00.00[f]	TBA2010 TBA2020[g] TBA2040[h]	02.07	02.08 02.07	02.07	02.07	02.07
00.04 00.03 00.02 00.01[a+b+c]	00.02 00.01 00.00[d+e]	00.01 00.00[f]	TBA2010 TBA2020[g] TBA2040[h]	02.05	02.06 02.05	02.05	02.07 02.05	02.05
00.04 00.03 00.02 00.01[a+b+c]	00.02 00.01 00.00[d+e]	00.01 00.00[f]	TBA2010 TBA2020[g] TBA2040[h]	02.03	02.04[i] 02.03	02.03	02.07 02.05 02.03	02.03
00.04 00.03 00.02 00.01[a+b+c]	00.02 00.01 00.00[d+e]	00.01 00.00[f]	TBA2010 TBA2020[g] TBA2040[h]	02.02	02.03 02.02	02.02	02.07 02.05 02.03 02.02	02.02
00.02 00.01[a+b+c]	00.02 00.01 00.00[d+e]	00.01 00.00[f]	TBA2010 TBA2020[g] TBA2040[h]	02.00	02.01[j] 02.00[k]	02.00	02.07 02.05 02.03 02.02[l] 02.00	02.00
00.02[m] 00.01[c]	00.02 00.01 00.00[d+e]	00.01 00.00	TBA2020 TBA2040[h]	01.01[a+b]	01.01[d]	01.01[n]	02.07 02.05 02.03 02.02[l] 02.00[l] 01.03 01.01	01.01

a. Power saving does not work.

b. External reference changeover to internal reference does not work reliably.

c. Cannot be used with the TaitNet RS-232 system interface board.

d. The Mains Failure diagnostic test does not work.

e. The 12 VDC power supply cannot exceed 16V (6 cells).

f. Power saving does not work reliably: the base station may be unable to wake the PA up out of Deep Sleep mode.

g. Using a TBA2020 control panel in a base station with Power Save increases power consumption by approximately 0.5 W.

h. Hardware-switchable dual base stations must use the control panel TBA2040 together with the subrack interconnect PCB XBAK22C1.

i. Should not be used with a PMU running on a DC supply.

j. 48 VDC PMUs require PMU firmware version 02.01 or later.

k. 24 VDC PMUs require PMU firmware version 02.00 or later.

l. Conversion rules apply. See the online Help for general information.

m. DIP switches in the reciter must be set to positions that disable power saving if you downgrade a new reciter to old firmware (see TN-850 for details).

n. If downgrading the PA firmware to version 01.01, make sure the PMU supplying the PA is running on AC power. Alternatively, use a bench power supply set to 28V to power the PA during download.

Important Power Saving is supported by firmware versions 02.00 and later, and hardware versions 00.02 and later. It is not supported by dual base stations.

B–band (VHF) operation is supported by firmware versions 02.02 and later, and reciter hardware version 00.03.

C–band (Band III) and K–band (800 MHz) operation is supported by firmware versions 02.03 and later, and reciter hardware version 00.03.

L–band (900 MHz) operation is supported by firmware versions 02.07 and later.

3   Upgrading to Service Kit Version 02.07

You must remove the old Service Kit version before installing the new version. Begin the installation in the usual way. In the Welcome screen, select Remove to remove all installed components. Then begin the installation again.

Note If you are upgrading from version 01.01, back up the connection definitions (SKLocal.mdb) before removing all installed components. Once the installation is complete, copy the backed up SKLocal.mdb files back into the directory where the Service Kit is installed.

Note A PC can only have one Service Kit version installed.

4 Upgrading or Downgrading Firmware

To upgrade or downgrade the firmware of any base station module, carry out the procedures described in "Upgrading Base Station Firmware" in the Service Kit online Help or User's Manual. Note that you must use the latest version of the Service Kit software.

Reciter Recalibration

In some situations you must recalibrate the reciter when you upgrade or downgrade the reciter's firmware, as described in the table below.

Upgrade or Downgrade	Procedures Required
upgrading the reciter firmware from version 02.00 or later to any later version	■ no recalibration is required
downgrading the reciter firmware from version 02.03 to version 02.02	■ automatically tune the frequency control loop (FCL)
■ upgrading the reciter firmware from version 01.01 to version 02.00 or later ■ downgrading the reciter firmware from version 02.02 to any earlier version	■ automatically tune the frequency control loop (FCL) ■ calibrate the FCL modulation ■ calibrate the VCO modulation

Refer to the Calibration Kit documentation for more details about tuning and recalibration procedures.

Important Always use the Calibration Kit software version compatible with the reciter firmware version you are upgrading or downgrading to (refer to "Compatibility" on page 4).

5 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
00031612	Alarm Center: Error when clearing Alarm Center alarms
00045570	Alarms: PMU or PA fan fault not detected during start-up test
00045804	Calibration: During transmit power calibration, the Calibration Kit crashes rapidly when using arrow keys
00039786	Calibration: Poor sensitivity on low band edge of K band Reciter
00050162	PMU: DC PMU resets

6 Known Issues or Limitations

Alarm Center: Does not release the line after sending an email

Tait reference: 00027117 After the Alarm Center has used the modem to connect to the internet to send an email, the modem connection is not closed. The Alarm Center will then be unable to go into Auto Answer mode until the connection is manually closed, or it times out (from being idle for longer than the time specified in the connection). This problem only occurs on Windows 95, 98 and NT machines that have a version of Internet Explorer earlier than 5.01. To fix the problem on these machines, install version 5.01 or later of Internet Explorer.

Alarm Center: No answer from Alarm Center when using multiple modem drivers

Tait reference: 00012467 The Alarm Center does not answer modem calls when more than one Modem Driver is installed for a single COM port.

Alarms: Air intake temperature alarm activates before PA fan comes on

Tait reference: 00042198 When the PA fan is not running, as soon as the PA heatsink reaches the maximum PA air intake temperature threshold, the air intake temperature alarm is raised. The default maximum PA air intake temperature threshold is 50°C, which is lower than the default PA fan control threshold temperature of 60°C. To prevent spurious air intake temperature alarms, adjust the maximum PA air intake temperature to be 10°C above the PA fan control threshold temperature, or reduce the PA fan control temperature.

Alarms: False indication of alarm (DC Voltage Low alarm)

Tait reference: 00022383 It has been found that very infrequently some TB8100 alarms are generated when they should not have been. If an alarm is generated where operational and configuration errors have been eliminated, please contact your nearest Tait branch and advise them of this occurrence. This will help to diagnose the extent of the problem.

Alarms: Transmit power alarm at low power

Tait reference: 00018814 The forward and reverse power alarm threshold (Configure > Alarms > Thresholds) can be as low as 1W. However, this is not practical when using a 5W PA, so it is recommended that the VSWR alarm is used instead. VSWR is calculated with better precision, and reliably detects load failure.

Base Station: APS4 No Longer Available

Tait reference: 00044340 Western Telematic Inc. have advised Tait that they have now officially discontinued the APS-4. Please refer to the announcement at http://www.wti.com/aps4eol.htm

Base Station: Using a digital output to drive an antenna relay can damage PA

Tait reference: 00046362. When a transmit relay switches over, the RF output is momentarily unconnected. If the PA is transmitting at that moment, its final stage can be damaged. The coax relay driver has configurable timers to ensure that the PA is not transmitting during the switching. If you use a general purpose digital output instead of the coax relay driver output to control the transmit relay, you must take steps to prevent PA damage. Follow the instructions in TN1036, *Using Antenna Relays with TB8100 and TB9100 Base Stations*.

Calibration: Carrier frequency offset adjustment icon doesn't indicate procedure is complete

Tait reference: 00048932 After finishing the carrier frequency offset adjustment, the light icon next to it does not turn on (change colour) to indicate the procedure is complete.

Calibration: PA Stage Bias error "not at this time" is described as "non-critical"

Tait reference: 00046033 During PA Stage Bias calibration, if the Calibration Kit returns an error saying that "A (valid) command code has been received by the Base Station but it cannot be processed at this time", then the stage bias calibration has not been completed. The Calibration Kit reports this error as non-critical, invites the user to Ignore it, and indicates that the stage bias has been calibrated – which it has not. The user should check the supply voltage, the supply voltage calibration, and the temperature of the PA, and try again.

Communications: Aux. power supply is reported as active in email when it is not

Tait reference: 00026972 When the PMU Auxiliary power supply is deactivated via Task Manager, the status emails are still stating the Aux supply is active, when in fact it is not.

Configuration: "Superimpose" for CTCSS does not work when tone externally generated

Tait reference: 00041444 If externally generated subaudible signalling is to be applied to Tx path B, limiting caused by audio on Tx path A may cause the signalling to be lost. In this case, the Tx path B filtering should be bypassed.

Configuration: Channel selection in Standby mode confusing

Tait reference: 00016859 After re-configuring your base station channels, note that the system may not start operation on the correct channel while still in Standby mode.   As soon as the base station is put into Run mode, it will operate on the correct channel as configured.

Configuration: CTCSS decode time is always 300 ms

Tait reference: 00016753 You can configure CTCSS gating (Configuration > Base Station > Signalling Profiles > Edit > Advanced) to open the receiver gate in response to CTCSS tones either as fast as possible or after a specified number of milliseconds. Currently, the receiver gate opens after 300 ms regardless of the setting you specify.

Configuration: Disabled receiver shouldn't wake up in Power Saving mode when RF detected

Tait reference: 00041429 During Sleep or Deep Sleep modes, if the receiver is disabled by the Task Manager but RF is present, the Base Station will wake up and the idle timer will be reset. The idle timer is also reset when RF is received but the receiver LCB and TTR paths are disabled.

Configuration: Disabling subaudible tone decoding can result in a wrong transmit subaudible tone

Tait reference: 00020927 When subaudible decode is disabled through Task Manager, the Base Station does not need any Receive subtone for the received audio to be valid. The subtone to be transmitted should be the default encode value for Talk Through Repeater. This might be a specific subtone, or it might be None. The Base Station incorrectly transmits the subtone from the first entry in the subtone table (i.e. row 1).

Configuration: External reference may go out of lock when Power Saving enabled

Tait reference: 00026237 The combination of external reference presence and Power Saving operation is not supported in this release. This combination will result in many "External Reference Invalid" alarms.

Configuration: PTT press stops tone on idle on other line out

Tait reference: 00044401 If Tone on Idle is configured for the Unbalanced Line Output, and the Microphone to Balanced Line signal path is enabled, and the user then presses the PTT, the tone will stop on the Unbalanced Line Output, even though the audio from the microphone is only going out the Balanced Line Out.

Configuration: Speaker outputs Rx Path A subaudible-band rumble continuously

Tait reference: 00045278 If the Rx Path A filter is set to Subaudible Band, then this filtered audio is still output to the speaker. The demodulator noise sounds like a low rumbling. This filtered audio is output to the speaker whether the receiver is busy or not.

Diagnostics: Inconsistent subaudible tones display error

Tait reference: 00022370 When testing subaudible scanning using the Diagnose > Reciter > Subaudible Scan function, the Base Station sometimes reports DCS017 and sometimes DCS050i. In reality these are exactly the same. The scanner should only scan through the non–inverted codes and display "DCS017 (050i) received" to indicate that the code received could actually be either of these codes.

Diagnostics: PMU auxiliary output test lasts only 5 seconds

Tait reference: 00043463 Under the Diagnose > Power Management > Control screen, an auxiliary power output test can be initialised in Standby Mode by pressing Start Test and then Toggle. When this is done, the auxiliary output is only toggled on for approximately 5 seconds before going off again.

Diagnostics: RSSI Forced output voltage stays constant

Tait reference: 00017156 The Diagnose > Reciter > Misc I/O > Force RSSI output level does not work properly.

Monitoring: 24 hour Duty Cycle graph reading incorrectly

Tait reference: 00017669 The 24 hour Duty Cycle graph in Monitor > Monitoring > Power Amplifier does not display the correct value when the Base Station has been running for less than 24 hours.

Monitoring: Ambient air temperature sensor is not in fan airflow on 100W PA

Tait reference: 00045162 For a 100W PA, the Monitoring > Power Amplifier screen may show an Air Intake Temperature that is 10°C above the actual ambient temperature. The high Air Intake Temperature alarm may be raised prematurely.

Monitoring: Misleading ambient temperature display on the Service Kit

Tait reference: 00014210 The air intake temperature shown on the Monitor > Power Amplifier screen can be misleading as it actually represents the temperature measured on the heatsink. If the PA has been transmitting without the fan turned on, the displayed temperature is much hotter than the actual air intake temperature.

Monitoring: Spurious reading of Balanced and Unbalanced line inputs during Rx cycling

Tait reference: 00045110 When Normal mode Rx Cycling is enabled, a spurious measurement of the input line levels may be displayed in the Monitoring > Reciter screen. This spurious measurement will remain until Valid Rx occurs, or the Tx Key is activated. The Base Station is unable to measure input line levels during Rx cycling.

Monitoring: Wrong output power displayed when 5W PA transmits at 1W

Tait reference: 00018815 The reciter-to-Service Kit protocol rounds power measurements to 1W increments. This rounding, when operating with a 5W PA, can mean reported values to the Service Kit can only be 0, 1, 2, 3, 4 or 5W. The PA operates internally with a resolution of 0.1dB. This means that the displayed value can be 0 when in fact the PA is operating at 0.99 Watts. Please keep this in mind when using the monitoring / diagnostics screens on 5W PA's.

Service Kit : Some Task Manager settings are not exported

Tait reference: 00048505 Some Task Manager settings are not included in the export file you can create from Task Manager. Custom inputs, actions, counters, timers and flags are not included in the file. The export file is provided to export Task Manager statements only.

Service Kit: Cannot connect to BS with 01.01 firmware using Service Kit @ 1200/9K6 Baud

Tait reference: 00024137 The Service Kit version 2.00 is not able to connect to a Base Station with Reciter firmware version 01.01 at a speed of 9600 Baud or lower.

Service Kit: Do not install a new Service Kit version via Repair Option

Tait reference: 00027076 The "Repair" option when installing new Service Kit software is not reliable. The correct procedure is to remove the Service Kit first by using either the "Remove" option from the Installation screen, or the "Add/Remove programs" from the Control Panel. Then install the new version (rebooting the PC when asked).

Service Kit: Firmware download may fail in France

Tait reference: 00022481 The attempt to download firmware using a Service Kit on an older version of Microsoft Windows with locale set to "French (France)" may fail. The message appears: "Le fichier de compatibilité est invalide. Le tableau est introuvable." Because of government regulation, the operating system does not permit the encryption required for firmware upgrade. Upgrade your operating system with the latest Service Pack. An alternative workaround is to use the Control Panel, Regional Settings tool to change the locale to "French (Canada)."

Service Kit: Firmware download option gives invalid compatibility error

Tait reference: 00026360 If you are running Windows 2000 with Service Pack 3, the compatibility file can not be read by the Service Kit. This is due to an encryption problem in one of the Microsoft components being used. To resolve this problem, please upgrade to Service Pack 4 that is provided on the Product CD.

Service Kit: Print to file results in omitting the first column

Tait reference: 00015663 Printing a configuration file to file results in missing the first letter of each line. It is OK when printing to an actual printer. This is due to an issue with Microsoft Windows 2000 Service Pack 3.0. To resolve this problem please upgrade to Windows 2000 Service Pack 4.0.

Service Kit: Scroll bar on Channel Table moves to centre

Tait reference: 00026193 Sometimes the scroll bar in Configure > Channel Table moves from the right side of the screen to the centre.

Service Kit: Toolbar on Spanish version is cut off after connection

Tait reference: 00036524 In the Spanish version of the Service Kit it may sometimes happen that at startup part of the toolbar is not visible. Please enlarge the size of the window until all buttons reappear.

7 Publication Information

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