TB8100 base station

Release Notes

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

■ Service Kit software version 02.03

■ reciter and PA firmware versions 02.03 and earlier

■ PMU firmware versions 02.04 and earlier (refer to "Issues Fixed" on page 5, Tait Reference 00040675).

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.

K band (800 MHz) Base Stations Now Available

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

	Frequency Band and Sub-band
Reciter	K4 = 762 MHz to 869 MHz[a]
PA	K2 = 760 MHz to 870 MHz[b]

a. The actual frequency coverage in this band is:
Transmit: 762 MHz to 776 MHz, and 851 MHz to 869 MHz
Receive: 792 MHz to 824 MHz

b. The actual frequency coverage in this band when used with a K band TB8100 reciter is 762 MHz to 776 MHz, and 851 MHz to 869 MHz.

Computer Controlled Interface

The Computer Controlled Interface (CCI) protocol allows external computer equipment to remotely monitor and control a TB8100 base station. CCI provides the same general command structure and formatting as CCDI, however it does not provide the data capability.

Refer to TN-947 for full details of the CCI protocol.

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, and Service 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 hardware, firmware, or Service Kit software version number 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 hardware, firmware, or Service Kit software version.

■ Any other combination is **not** compatible and not supported.

Base Station Hardware				Base Station Firmware			Service Kit Software
Reciter	**PMU**	**PA**	**Control Panel**	**Reciter**	**PMU**	**PA**	
00.03 00.02 00.01[a + b + c]	00.01 00.00[d + e]	00.01 00.00[f]	TBA2010 TBA2020[g] TBA2040[h]	02.03	02.04 02.03	02.03	02.03
00.03 00.02 00.01[a + b + c]	00.01 00.00[d + e]	00.01 00.00[f]	TBA2010 TBA2020[g] TBA2040[h]	02.02	02.03 02.02	02.02	02.03 02.02
00.02 00.01[a + b + c]	00.01 00.00[d + e]	00.01 00.00[f]	TBA2010 TBA2020[g] TBA2040[h]	02.00	02.01[i] 02.00[j]	02.00	02.03 02.02[k] 02.00
00.02[l] 00.01[c]	00.01 00.00[d + e]	00.01 00.00	TBA2020 TBA2040[h]	01.01[a + b]	01.01[d]	01.01	02.03 02.02[k] 02.00[k] 01.03 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. 48VDC PMUs require PMU firmware version 02.01 or later.

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

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

l. 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).

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.

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

3   Upgrading to Service Kit Version 02.03

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

No recalibration is required when you upgrade reciter firmware from version 02.00 or later to any later version.

If you downgrade the reciter firmware from version 02.03 to version 02.02, you only need to automatically tune the frequency control loop (FCL).

However, you must recalibrate the reciter under the following conditions:

■ If you upgrade the reciter firmware from version 01.01 to version 02.00 or later.

■ If you downgrade the reciter firmware from version 02.02 to any earlier version.

The recalibration procedure is as follows:
1. Automatically tune the frequency control loop (FCL).
2. Calibrate the FCL modulation.
3. Calibrate the VCO modulation.

Refer to the Calibration Kit documentation for more details.

5   Issues Fixed

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

Tait Reference	Headline
00036089	Alarms: Voltage Low alarm does not work when base station is in Deep Sleep
00036463	Configuration: Idle timer sometimes resets on CWID or Alarm Tone when in Sleep & Deep Sleep
00040675	PMU: Unreliable auxiliary DC output
00018039	Service Kit: Problems logging on to a base station if Base Station configured to dial out to Alarm Centre
00035984	Service Kit: Quasi Sync bit no longer required

6 Known Issues and 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: Error when clearing Alarm Center alarms

Tait reference: 00031612 If you click on 'Clear List' in the Alarm Center, then the application displays an error number 53 . However if you click 'Ignore' it will clear the list.

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.

Alarm Center: Reports the same alarm with different times on each connection

Tait reference: 00033053 If there is only one alarm on the reciter, each time the base station dials the Alarm Center, it will show as a new alarm with a different time.

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: Reverse high power alarm range won't allow it to clear at low levels

Tait reference: 00019369 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 alarm hysteresis values do not always clear alarms, as the pass/fail values do not change enough. If this occurs, one solution is to configure larger alarm hysteresis values by making the alarm occur at a higher threshold.   A much better solution is to disable the reverse power alarm, and rather use the High VSWR alarm, which is more accurate.

Alarms: RSSI High alarm is logged on startup

Tait reference: 00022617 When the base station starts up, an "RSSI high" alarm is logged and appears in the Reported Alarms form.

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.

Calibration: Poor sensitivity on low band edge of K band Reciter

Tait reference: 00039786 For the receiver front end tuning of K band (800 MHz) reciters, it is recommended that only coarse mode is used. Fine mode should be avoided as it causes the response to appear skewed to the LF side, and trying to correct this effect will result in sub-optimal tuning.

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: 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: 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.

Diagnostics: Errors in Diagnose > Power Management > Control Tests screen

Tait reference: 00025277 When running Power Save software there are some errors in the Diagnose > Power Management > Control Tests screen.   1) The Low Power mode LED is always ON in Deep Sleep and Normal modes.   2) The state of the arrows between the DC–DC converter and the Output Switch is incorrect.   3) The arrow for the Auxiliary output is always black (even when it is OFF).

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: RSSI Forced output voltage stays constant

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

Diagnostics: Synthesizer lock range test always indicates "locked" during test

Tait reference: 00033117 When running Exciter and Receiver synthesizer lock range tests in Diagnose > Reciter > Synthesizer, the screen synthesizer LEDs stay green throughout the test, and "locked" is always displayed.

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: Mains supply failed alarm does not go grey when DC-only PMU used

Tait reference: 00023829 If a Base Station is fitted with a DC-only PMU, then the Mains Supply failed alarm LED on the Monitor > Alarms > Current Status screen shows green when it should turn grey.

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: SK 2.03.00: The status of the DC converter is not updated according to the DC input

Tait reference: 00040381 On the Diagnose > Power Management > Control Tests screen, the DC converter does not show the correct voltage when the state of the AC converter and/or the DC converter is changed. This also applies to the Monitor > Monitoring > Power Management screen.

Monitoring: Status of DC-DC converter shown incorrectly

Tait reference: 00026356 When the Base Station is operating in Deep Sleep mode, the PMU DC-DC converter is actually OFF, but is shown as being ON in the Monitor >Monitoring > Power Management screen of the Service Kit.

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: 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: PA firmware does not load properly when using DC power supply

Tait reference: 00027030 If you try to downgrade the PA firmware from version 02.00 to 01.01 when an AC/DC PMU is fitted and running from DC power, the downgrade process may fail. Please make sure you are running from AC power when you attempt to downgrade the PA software under these conditions.   If an AC PMU is not available, the PA can be connected to an external bench supply set to 28V FOR THE PURPOSES OF THE DOWNLOAD ONLY (at this time the PA draws no more than 100mA of current). Unscrew the PA power leads from their connector, and use a "chocolate block" style connector for this purpose. Note the polarity of the connection before disassembly, and reconnect the leads with the correct polarity when finished.

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 Issuing Authority

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8 Publication History

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