TB8100 base station

Release Notes

Technical Note TN-924-SR
1 October 2004

This technical note contains late-breaking information to accompany the October 2004 release of the TB8100 base station. It also provides additional information about the Tait TB8100 Service Kit software version 02.02, and reciter, PA and PMU firmware versions 02.02 and earlier.

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.

Compatibility with Asynchronous Port Switches

You can now connect to a TB8100 base station via an asynchronous port switch (APS). This new feature allows connection via direct serial link, and via PSTN lines using modems. On remote sites, this will allow multiple base stations to be remotely configured and monitored without the need for a dedicated PSTN line for each base station installed on the site. Using an APS allows a single phone line to service up to 31 base stations, depending on the APS chosen. Refer to TN-906 for more details on using an APS with TB8100 base stations.

TaitNet RS-232 System Interface Board

This system interface board is designed for use with MPT trunking systems, and also for use with multiple base station systems. The rear-mounted RS-232 serial port facilitates the connection of multiple base stations to a Service Kit or Alarm Center using an APS and modem or radio modem. It is fitted with the following connectors:

- a 15-way female D-range connector (TaitNet)
- a 9-way female D-range connector (RS-232 serial port)
- a 2-way auxiliary DC input connector.

This system interface board is fitted to reciters bearing the product code TBA4xxx-0L0x. If purchased separately, it has the product code TBA10L0. For details of pin allocations, refer to the Installation and Operation Manual. Refer to TN-906 for more details on using an APS with TB8100 base stations.

VHF Base Stations Now Available

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

	Frequency Band and Sub-band
Reciter	B2 = 136MHz to 156MHz B3 = 148MHz to 174MHz
PA	B1 = 136MHz to 174MHz

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**	
00.01[a + b] 00.02 00.03	00.00[c + d] 00.01	00.00[e] 00.01	TBA2010 TBA2020[f] TBA2040[g]	02.02	02.02	02.02	02.02
00.01[a + b] 00.02	00.00[c + d] 00.01	00.00[e] 00.01	TBA2010 TBA2020[f] TBA2040[g]	02.00	02.00[h] 02.01[i]	02.00	02.00 02.02[j]
00.01 00.02[k]	00.00[c + d] 00.01	00.00 00.01	TBA2020 TBA2040[g]	01.01[a + b]	01.01[c]	01.01	01.01 01.03 02.00[j] 02.02[j]

a. Power saving does not work.

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

c. The Mains Failure diagnostic test does not work.

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

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

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

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

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

i. 48VDC PMUs require PMU firmware version 02.01.

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

k. 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.

VHF operation is supported by firmware versions 02.02 and later, and reciter hardware version 00.03.

3 Upgrading to Service Kit Version 02.02

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.

Recalibration No recalibration is required when you upgrade firmware from version 02.00 to version 02.02.

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.

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
00027826	Alarms: Base station does not send alarm pip tones when in deep sleep
00018839	Alarms: Fan faults not detected during power up
00023681	Alarms: Notification and power save
00020913	Base Station: Channel change may result in incorrect transmit subtone
00026690	Base Station: Digital out 1 & 2, Rx Gate and Coax Relay are active during startup. (Applies only to the TaitNet RS-232 system interface board.)
00027112	Base Station: PA fan no longer comes on at startup
00026693	Calibration Kit: Error when connecting to a base station
00019778	Configuration: Operation outside approved frequency limits
00025191	Configuration: 20kHz channels do not work on Quasi sync systems
00027236	Configuration: Base station may not go into Deep Sleep after 1, 2 or 6 hrs
00016753	Configuration: CTCSS decode time is always 300 ms
00021251	Configuration: Emulated T800 UHF RSSI output curve does not match T800 specs
00019572	Configuration: Rapid channel change using Task Manager causes resets
00024263	Configuration: Receiver reverse Tone Burst misleading
00018649	Configuration: Reverse tone burst detection can't be disabled
00019237	Diagnostics: Auxiliary output test currently not working
00024383	Diagnostics: Output audio calibration readings are displayed incorrectly using Service Kit
00020525	Diagnostics: Signal Levels out of lock
00015759	Diagnostics: Subaudible scan cannot detect CTCSS tones
00022536	Modem Connection: International link may be unreliable
00027314	Performance: Limiting deviation needs to be increased
00022494	Performance: Quasi Sync not reactivated after external reference disconnected and reconnected

Tait Reference	Headline
00019502	Service Kit: Watchdog Resets counter can't be returned to zero
00024149	Service Kit: CCDI2 connection in Service Kit doesn't work
00027482	Service Kit: No information shown for PA in download screen
00027281	Service Kit: Procedure for recovery after serial link broken during firmware download
00023288	Service Kit: System Data not implemented

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.

Alarms: Voltage Low alarm does not work when base station is in Deep Sleep

Tait reference: 00036089 The Voltage Low alarm does not work when the base station is in Deep Sleep mode. However, the alarm functions normally in normal and Sleep modes.

Calibration Kit: Calibration date is updated even though calibration wizard is cancelled

Tait reference: 00035751 When you exit a calibration procedure from the Calibration Kit, the calibration date is updated. This is not correct, it should only update the calibration date after a successful calibration

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.

Configuration: Idle timer sometimes resets on CWID or Alarm Tone when in Sleep & Deep Sleep

Tait reference: 00036463 If you have CWID or PIP tones configured in combination with power saving, sometimes the idle timer resets after transmitting CWID or an Alarm PIP tone. This causes the base station to come out of Sleep mode.

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: 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: SINAD displayed on Service Kit needs care with interpretation

Tait reference: 00025630 The Service Kit SINAD indication assumes that the user has selected a flat audio response for the receive audio paths. The measurement point is the same as that used for the SINAD gate determination. If a de-emphasised response is used for either audio output path, the SINAD will be better than indicated for that path.

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: Added modem not detected in Edit Connection

Tait reference: 00022402 If the PC is started without a modem connected and a modem is later added via the Control Panel, then the Service Kit still thinks it doesn't have a modem, even though it is present in the "Edit Connection" page. A workaround is to go to the "Edit Connection" page, click and unclick some parameter (e.g. "use area code"), then click OK. This has to be done for every single connection.

Service Kit: Can't lose then regain focus during base station program/read

Tait reference: 00026088 During programming a configuration into the Base Station and when another application is on the foreground of the screen (has focus), it is possible that the Service Kit is not able to regain focus when this is requested by the user.

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: Problems logging on to a base station if Base Station configured to dial out to Alarm Centre

Tait reference: 00018039 If you experience difficulty logging on to the Base Station, this could be because it is currently trying to dial out to the Alarm Center. You can reduce the number of dial-out retries that the base station is configured for (Configure > Communications > Alarm Center).

Service Kit: Quasi Sync bit no longer required

Tait reference: 00035984 After an improvement in the frequency control mechanism, it is no longer necessary to set the Quasi Sync bit via the Service Kit when implementing QS systems. This box must ALWAYS be left unchecked. It will be removed in future versions of the Service Kit

7 Issuing Authority

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8 Publication History

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