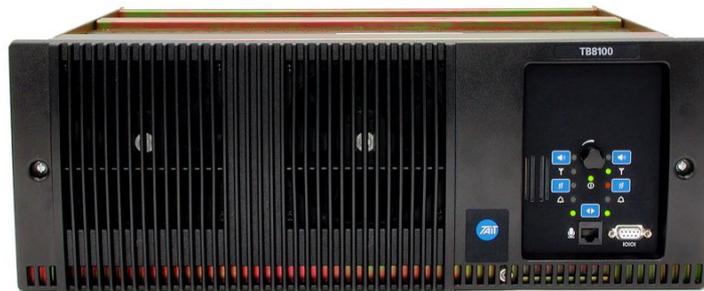


TB8100

Base Station/Repeaters



All TB8100 systems offer continuous duty cycle operation at full performance specifications within the complete temperature and altitude range.

With flexible, modular design, practical features and value for money that Tait is renowned for, the TB8100 raises the bar for analog base stations/repeaters. It offers 28V technology for superior performance and reliability.

What's more, it's even easier to use. Flexible software with an intuitive user interface is at the heart of the TB8100, making it very integrator friendly and expandable.

Its practical easy-to-use features coupled with impressive RF performance help make the TB8100 the next generation analog base station.

The TB8100 offers you the following benefits:

- 255 Channels with up to 16 CTCSS or 16 DCS tones per channel
- Programmable Power Output in 1W steps, per channel
- External Frequency Reference for QS Simulcast applications
- Full Remote Control and Diagnostics
- Choice of external interface configurations
- Programmable Operation
- Software Enabled Feature upgrade options
- Choice of single 100W or dual 5 or 50W configurations.
- Seamless backup battery operation and charging with AC/DC supply

Intelligent • Flexible • High Performance**Digital Controller Design**

Designed from the ground up, the TB8100 features a state-of-the-art RISC processor and Digital Signal Processor (DSP), providing very fast, reliable data processing through the latest in digital technology.

28V Technology

More powerful than most base stations in its class. Tait tests the TB8100 to transmit continuously at full power with ambient air temperatures as high as 140°F (+60°C) at 15,000 feet (4572m).

Advanced Programming Capabilities

The TB8100's intuitive yet comprehensive programming software with Graphical User Interface (GUI) lets you manage and program over 150 critical parameters, including all monitoring, configuration management and power management features.

Convenient Modular Design

Designed for ease of hook-up and adaptation in the field, the TB8100 is configured with front-loading modules that can be mixed and matched to meet your system needs. Whether expanding from 50 to 100 Watts, moving from single to dual channel operation, or replacing the PA or system interface board, the TB8100 gives you the flexibility to make changes in the field. A clean back-panel design hides the usual rear unit wiring clutter displaying only the connections required to link to your external radio system.

User Specific Applications

Additional customised programming is made easy with the TB8100 Task Manager - there's no need for intrusive hardware add-ons. The TB8100 can readily accommodate your specific signaling, notification or alert needs. Program the unit to automatically switch to a backup base station if the self-monitor determines a problem, and choose from the wide range of alarm notification options to suit your specific solution needs.

Self-Monitor Capability

The TB8100 manages self-monitoring parameters in its non-volatile memory, requiring no external costly monitor units, saving money, time and hassles. The advanced monitoring system will read the base status, determine the appropriate required action, and perform that action while alerting central control.

Power Management System

The comprehensive power management system provides the ability to automatically switch between AC and DC power, to move to battery operation in the case of power failure, and to provide auxiliary battery charging and management.

Complete Remote Accessibility

The advanced intuitive interface of the TB8100 Service Kit Software makes remote management of your system simple. The self-monitoring application has dial-out capability so you are immediately notified of potential issues. Over 150 parameters on the system can be managed remotely with the TB8100 Service Kit Software.

Robust Specifications

Built to exceed standard specifications, the TB8100 is designed to withstand extreme temperature conditions. Engineered for maximum reliability, the TB8100 has large heat sinks, advanced cooling, and the intelligence to maintain the highest possible levels of service in adverse environments.

Peak RF Performance

With outstanding specifications for selectivity, adjacent channel interference and fast key-up times, the TB8100 base station was designed using the best RF practices. You can depend on the RF performance of this base station even in the most extreme temperature conditions.

TB8100 Base Station System Prices



The TB8100 Base Station System is shipped with the following modules included:

- Subrack Front Panel with dual fans
- Control Panel
- Power Management Module options as selected
- Power Amplifier
- Reciter (Receiver/Exciter) with system interface
- Service Kit (programming S/W, cable, CD)
- Installation Guide

System	VHF/UHF	800MHz
Single 1-5w	See price list	See price list
Single 5-50w	See price list	See price list
Single 10-100w	See price list	See price list
Dual 1-5w	See price list	See price list
Dual 5-50w	See price list	See price list
Dual 1-5 + 5-50w	See price list	See price list

Notes: These prices are for 12VDC systems only.

For Optional Additions	Add
AC Power Management Unit	See price list
IEC Power Cord	See price list
12V DC, 24VDC or 48VDC Power Management Unit	See price list
Power Save (For Single Reciter Systems Only)	See price list
Alarm Reporting (Per Reciter)	See price list
Advanced Profiles and Task Manager (per Reciter)	See price list
Microphone	See price list

These prices do not include RF equipment such as coax relays, combiners, splitters, couplers, antenna etc.

For exact order details and order codes, please contact your Tait Customer Service Representative.

Power Amplifiers

1-5W Power Amplifier

Broadband. Built-in Alarm monitoring, and diagnostics.
 Remotely configurable and programmable.
 100% duty cycle @ 60°C (140°F).
 2 millisecond keyup time.
 Programmable output power from 1 to 5W in 1W steps.
 Up to two 5W or 50W power amplifiers can be fitted into a TB8100 subrack.



5-50W Power Amplifier

Broadband. Built-in Alarm monitoring, and diagnostics.
 Remotely configurable and programmable.
 100% duty cycle @ 60°C (140°F).
 2 millisecond keyup time.
 Programmable output power from 5 to 50W in 1W steps.
 Up to two 5W or 50W power amplifiers can be fitted into a TB8100 subrack.



10-100W Power Amplifier

Broadband. Built-in Alarm monitoring, and diagnostics.
 Remotely configurable and programmable.
 100% duty cycle @ 60°C (140°F).
 2 millisecond keyup time.
 Programmable output power from 10 to 100W in 1W steps.
 A limit of one 100W power amplifier can be fitted into a TB8100 subrack



Product Code	Description	Price
TBA70B1-0000	136-174MHz, 1-5 watt PA	See price list
TBA70H0-0000	400-520MHz, 1-5 watt PA	See price list
TBA70K2-0000	760-870MHz, 1-5 watt PA	See price list
TBA80B1-0000	136-174MHz, 5-50 watt PA	See price list
TBA80H0-0000	400-520MHz, 5-50 watt PA	See price list
TBA80K2-0000	760-870MHz, 5-50 watt PA	See price list
TBA90B1-0000	136-174MHz, 10-100 watt PA	See price list
TBA90H0-0000	400-520MHz, 10-100 watt PA	See price list
TBA90K2-0000	760-870MHz, 10-100 watt PA	See price list

Power Management Modules

Description:

Single AC Power Supply

Mains operated power supply. 88 to 264V input with power factor correction. Sufficient output power is provided to drive 1 x 100W transmitter or 2 x 50W transmitters. The unit has built in alarms and diagnostics and is remotely controllable and programmable.



Single DC Power Supply

A very high efficiency supply designed to run from a nominal 12, 24 or 48 VDC supply. This unit has the same output capability as the AC Power Supply. The input supply can be negatively or positively earthed. The unit has built in alarms and diagnostics and is remotely controllable and programmable.

Dual (AC + DC) Power Supply

A dual power supply combining both of the above supplies. Switching from AC to DC is seamless and automatic. This option is required if the TB8100 is mains operated but is required to be powered by a backup DC supply. The DC input supply can be negatively or positively earthed. The unit has built in alarms and diagnostics and is remotely controllable and programmable.

Standby Power Supply, (10W)

The standby supply is highly recommended for low current consumption operation. The standby supply is used to run the Reciter alone so that the main 500 W DC supply can be switched off altogether for extended quiet periods. This unit can only be fitted to DC Supply or the Dual Supply. The low power option can only be enabled for single channel operation. It is used in conjunction with the software-licensed power save feature: TBAS030.

Auxiliary Power Supply / Battery Float Charger (40W output)

The base station itself does not use the output of the Auxiliary Power Supply. The output is floating so it may be negatively or positively earthed.

It can be configured to be on all of the time (to supply external equipment) or to be on only while mains is available (e.g. as a float charger for the battery). This module is therefore highly recommended for the Dual Supply and is required when the base station is to be used with TaitNet MPT1327 controllers.

Single Power Supplies – see price list

Product Code	Input Options				Output Supply Options			
	AC 88-264V	10-16V DC	20-33V DC	40-60V DC	12V Aux 40W	24V Aux 40W	48V Aux 40W	Standby 10W
TBA3001-1100		•			•			•
TBA3001-1200		•				•		•
TBA3001-1400		•			•		•	•
TBA3002-2100			•		•			•
TBA3002-2200			•			•		•
TBA3002-2400			•				•	•
TBA3004-4100				•	•			•
TBA3004-4200				•		•		•
TBA3004-4400				•			•	•
TBA30A0-0100	•				•			
TBA30A0-0200	•					•		
TBA30A0-0400	•						•	

Dual Power Supplies – see price list

Product Code	Input Options				Output Supply Options			
	AC 88-264V	10-16V DC	20-33V DC	40-60V DC	12V Aux 40W	24V Aux 40W	48V Aux 40W	Standby 10W
TBA30A1-1100	•	•			•			•
TBA30A1-1200	•	•				•		•
TBA30A1-1400	•	•					•	•
TBA30A2-2100	•		•		•			•
TBA30A2-2200	•		•			•		•
TBA30A2-2400	•		•				•	•
TBA30A4-4100	•			•	•			•
TBA30A4-4200	•			•		•		•
TBA30A4-4400	•			•			•	•

Reciters (Receiver/Exciter)



Reciters are available in the following bands: 136 to 156MHz, 148 to 174MHz, 174 to 193MHz, 194 to 224MHz, 400 to 440MHz, 440 to 480MHz, 470 to 520MHz and 760 to 870MHz¹. Their tuning range covers a 2% subband, i.e. 10MHz at 500MHz.

A Reciter includes a Receiver, Exciter, DSP, RF, and audio stages to give stable performance for the life of the product. A RISC processor controls the Task Manager, alarms system, fault monitoring, diagnostics, remote connectivity, and channel behavior.

The unit has provision for an internally fitted system interface module (SIF), allowing reconfiguring of the I/O system to suit the user's requirements. There are five SIFs available.

The unit is shipped with the default radio software license already installed. Other software licenses may be installed including:

Alarm Reporting Software
Advanced Profiles and Task Manager Software
Power Saving Modes

The basic configuration includes one Reciter. An additional unit is required for any dual channel systems.

Product Code	Description	VHF/UHF Price	800MHz Price
TBA40XX-YYYY	Reciter with SIF included	See price list	See price list

Where XX is:

B1=136-156MHz
 B2=148-174MHz
 B3=174-225MHz
 H1=400-440MHz
 H2=440-480MHz
 H3=480-520MHz
 K4=760-870MHz

Where YYYY is the Reciter with the following SIF:

0A00 = Non-isolated
 0B00 = Isolated Audio
 0C00 = Isolated Audio E/M
 0T10 = TaitNet, MPT Trunked
 0L00 = TaitNet, MPT + RS232

¹ Note 800 MHz band covers 754-776 & 850-870 TX, 794-829 RX.

System Interface Cards



The Reciters have a position inside for a System Interface (SIF) card. The SIF is responsible for all the non-RF inputs and outputs for the reciter. The SIF is interchangeable depending on the application requirements.

One of the following SIFs may be selected per reciter.

<p>Non Isolated Audio D25 Connector with:</p> <ul style="list-style-type: none"> → Balanced and unbalanced input and output audio lines, → 6 digital inputs, → 2 digital outputs, → 4 digital input/outputs → 1 coax relay drive output, → Tx Key & Rx Gate. 	
<p>Isolated Audio D25 connector with:</p> <ul style="list-style-type: none"> → Transformer isolated balanced input and output audio lines, → Non isolated unbalanced input and output audio lines, → 6 digital inputs, → 2 digital outputs, → 4 digital input/outputs → 1 coax relay drive output, → Tx Key & Rx Gate. 	
<p>Isolated Audio E&M D25 connector with:</p> <ul style="list-style-type: none"> → Transformer isolated balanced input and output audio lines, → Non isolated unbalanced input and output audio lines, → 2 digital inputs, → 2 digital outputs, → 4 digital input/outputs → 1 coax relay drive output, → Tx Key & Rx Gate, → Optically isolated E & M (Tx Key and Rx Gate). 	
<p>TaitNet, RS232 D15 connector to interface directly with TaitNet system, with:</p> <ul style="list-style-type: none"> → Balanced and unbalanced input and output audio lines, → 1 digital input, → 3 digital outputs, → Tx Key & Rx Gate → D9 RS232 connector. 	
<p>TaitNet, MPT Trunked D15 connector to interface directly with TaitNet system, with:</p> <ul style="list-style-type: none"> → Balanced and unbalanced input and output audio lines, → 1 digital input, → 3 digital outputs, → Tx Key & Rx Gate. 	

Subracks



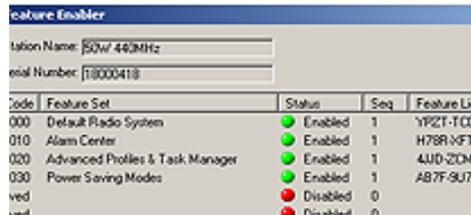
In order to house the modules, you need to select one of the following subracks:

Description	5/50W	100W
Single Reciter Systems	See price list	See price list
Dual Reciter Systems	See price list	Not Available
Power Save Systems	See price list	See price list

NOTE:

PowerSave is only available in Single Reciter Systems.

Software Enabled Features



Code	Feature Set	Status	Seq	Feature Lic
000	Default Radio System	Enabled	1	YP2T-TCD
010	Alarm Center	Enabled	1	H78R-VFT
020	Advanced Profiles & Task Manager	Enabled	1	4UD-2DM
030	Power Saving Modes	Enabled	1	AB7F-9U77
ved		Disabled	0	
ved		Disabled	0	

The TB8100 Software feature enabler is a software licensing system that is used to enable advanced features of the base station.

Licenses are applied on a per-feature and per-reciter basis.

Alarm Reporting Software

The TB8100 Base Station supports some key alarm systems that will form the backbone of any well-configured radio system.

The key features are:

- Task Manager initiation of Status and Alarm calls
- Alarm Centre package (standalone PC application)
 - Alarm collection
 - Email forwarding
- External alarm inputs to base station

This license must be purchased on a per reciter basis



Thresholds	
Minimum PA power output:	50 W
Maximum PA reverse power output:	10 W
Maximum PA VSWR:	3.0 : 1
Maximum PA final temperature:	105 F
Maximum PA driver temperature:	175 F
PA air intake temperature:	140 F
Minimum:	4 F

Advanced Profiles and Task Manager Software

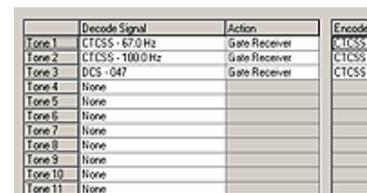
Signalling:

Up to 16 sub-audible receive tones (CTCSS or DCS).

No limits to the combinations for CTCSS and DCS.

Tx tone selectable per input tone for repeater operation.

Tx tone selectable for Line Controlled base operation

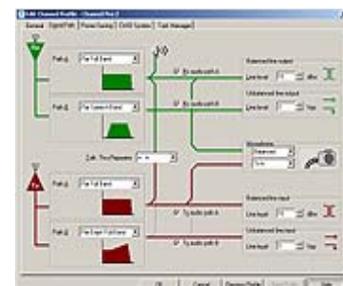


Decoding Signal	Action	Encode
Tone 1: CTCSS - 67.0 Hz	Gate Receiver	CTCSS
Tone 2: CTCSS - 100.0 Hz	Gate Receiver	CTCSS
Tone 3: DCS - 047	Gate Receiver	CTCSS
Tone 4: None		
Tone 5: None		
Tone 6: None		
Tone 7: None		
Tone 8: None		
Tone 9: None		
Tone 10: None		
Tone 11: None		

Signal Path:

Dual audio paths on both transmit and receive.

Audio filtering characteristic independently selectable for both receive paths and both transmit paths.



Tx Power:

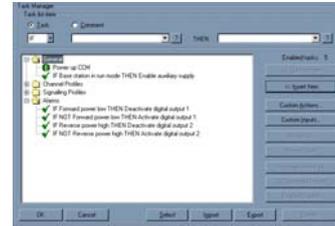
Power adjustable independently for mains and battery operation

Channel Spacing:

Cross-system repeating possible with independently selectable receiver and transmitter bandwidth (25kHz, 20kHz or 12.5kHz)

Task Manager

Up to 200 enabled tasks.
Far greater scope for better system control and fault & alarm management.



Advanced Profiles

Up to 16 customised channel profiles and signalling profiles are available.
Base station behaviour changes on a per-profile basis.

Power Saving Modes

In power saving mode the receiver cycling time can be as slow as one second. If the PMU has a standby supply fitted, the reciter will also switch off the main circuitry of the PMU when not needed. Power savings are therefore dramatic. If there is line or signal activity, the power supply is completely re-booted to wake the system. The standby supply has been carefully optimised to power just a single reciter, and is not suitable if the subrack has more than one reciter.



This license must be purchased on a per reciter basis.

Product Code	Description	Price
TBAS010	Alarm Reporting Remote Control & Diagnostics Dial-up reporting and e-mail	See price list
TBAS020	Advanced Profiles and Task Manager Default profiles, 16 CTCSS or DCS tones, Dual audio paths Full task manager (200 tasks)	See price list
TBAS030	Power Saving Mode Programmable low current drain features. Requires DC Power Management Unit and standby supply.	See price list

Standard Accessories

TMAA02-01 Microphone

Required for test transmissions. Plugs into the User Interface. The microphone can be configured to transmit over the air or as line audio.



See price list

Power Cordsets

Product Code	Description	Price
TBA0001-AU	IEC Cordset (Aust/NZ/China)	See price list
TBA0001-US	IEC Cordset (USA/Canada/Middle East)	
T952-320	IEC Cordset (Singapore/UK/Hong Kong)	
T952-330	IEC Cordset (Mainland Europe)	

Service Accessories

TBA0ST1 Calibration Test Unit

The TB8100 Calibration Test Unit is required when using the Service Kit to access the reciter when it is not in the subrack.

It is required for system re-tuning and extremely useful for system test and run-up, especially when commissioning new configurations, and running radio diagnostics.



See price list

TBA0ST2 Tool Kit

Comprising of:

- Control Panel Board Remover
- Torx-Driver T8
- Torx-Driver T10
- Torx-Driver T20
- Screwdriver PZD-2
- Screwdriver Medium Flat Blade
- Tuning Tool Cer 2.2mm
- Tuning Tool 5CCE
- Socket Head M3 nuts
- Tool bag



See price list