



TB8100

SPECIFICATIONS



TB8100 BASE STATION/REPEATER

The TB8100 is a highly flexible base station/repeater, ideal for any application from a simple conventional repeater or POCSAG paging transmitter to advanced TaitNet Quasi-Sync and MPT 1327 trunked systems.

Flexible communications

- 255 channels with up to 16 CTCSS and DCS sub-audible tones per channel, making it suitable for use as a community repeater without requiring additional equipment*
- Covers key frequency bands from 136MHz to 941MHz
- Tone on idle and CWID
- Several system interface options including Isolated Audio, Isolated Audio E8M, TaitNet MPT Trunked, TaitNet RS232 and TaitNet Ethernet
- An Ethernet system interface option enables IP management of user's communications system

High specification base station design

- Fast key-up time of 2ms
- Monitor 43 alarm parameters remotely
- Computer Controlled Interface (CCI) protocol allows external computer equipment to remotely monitor and control a TB8100 base station
- Power Save option ideal for solar sites with receive power as low as 60mA
- A built-in spectrum analyzer measures received signal levels across the selected band

*Advanced Profiles option required

Complete remote operation

With its many remote monitoring options the TB8100 is ideal for isolated sites. Users can manage more than 150 parameters remotely with TB8100 Service Kit software.

Advanced diagnostics

Monitor your entire network from a central location with the TB8100 alarm reporting option. This means you do not need to manually connect to each base station to check it, minimizing maintenance time and costs.

Tough design

Specified to operate continuously at full power, at up to 15,000ft (4,572m) and as high as 140°F (60°C) in temperature. Large heatsinks mean that no spacing is required between base stations.

Excellent RF specifications

Outstanding specifications for selectivity, sensitivity and adjacent channel interference make the TB8100 ideal for use in high-noise environments.

Flexible software

The Advanced Profiles option gives you precise control over your channel configuration and access to the most advanced base station features.

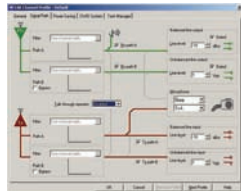
Transition to P25 digital

A common hardware platform makes it a smooth transition to the P25 digital TB9100 series.

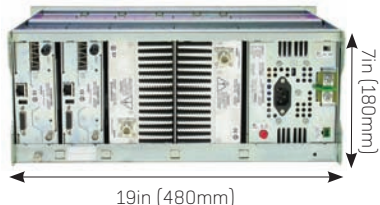
TB8100 Specifications

General

	Operational Frequency	PA			
VHF	136–156MHz	136–174MHz			
	148–174MHz				
	174–193MHz	174–225MHz			
	193–225MHz				
UHF	380–420MHz	380–520MHz			
	400–440MHz				
	440–480MHz				
	470–520MHz				
700/800MHz	762–776/850–870MHz (Tx)	760–870MHz			
900MHz	792–824MHz (Rx)				
	896–912MHz (Rx)	850–960MHz			
	927–941MHz (Tx)				
Electronic Switching Range	≤2% of centre frequency (eg: 10MHz @ 500MHz)				
Channel/Network Capacity	255				
Channel Spacing	12.5/20/25kHz				
Channel Increment	0.125kHz				
Dimensions (WxDxH)	19 x 15 x 7in (480 x 390 x 180mm) 4U Rack Space				
Weight	Single 5/50W: 45lb (21kg)				
	Single 100W: 47lb (22kg)				
	Dual 5/50W: 61lb (28kg)				
	-22° to 140°F (-30° to 60°C)				
Operational Temperature	-22° to 140°F (-30° to 60°C)				
Description	Modular base station/repeater/receiver				
System Types	Conventional FM, MPT 1327 Trunked, QS ² Simulcast and others				
Frequency Stability	±0.5ppm				
External Reference	10MHz or 12.8MHz				
Power Consumption*	12VDC	24VDC	48VDC	240VAC	
	Standby (20ms Receiver Cycling)	720mA	360mA	170mA	
	Sleep (200ms Receiver Cycling)	400mA	200mA	98mA	
	Deep Sleep (1s Receiver Cycling)	109mA	61mA	31mA	
	Tx @ 5W**	2.6A	1.3A	0.61A	0.49A
	Tx @ 50W**	10A	5.4A	2.6A	0.74A
	Tx @ 100W**	19.2A	10.3A	4.9A	1.1A
Supply Requirements	85 to 264V (PFC, power factor correction)				
Mains	12V, 24V, 48V (Nominal +ve or -ve earth)				
DC					
Options	Optional coax relay kit				



Comprehensive and intuitive software can be used to change configuration quickly and easily.



Clean back panel design with industry-standard interfaces enables easy connectivity to the rest of the system and third party vendors. Pictured: dual 50W system with AC/DC Power Management Unit.

Front-loading modules slip into the 4U subrack, making building the system, replacing a module or accessing a system interface board fast and simple. TB8100 modules include:

- Reciter - contains the receiver and exciter.
- Power Amplifier - available as 5W, 50W and 100W modules.
- Power Management Unit - provides AC and/or DC power, and includes an auxiliary power supply.
- System Interface - provides access to multiple interfaces.
- Subrack, Front panel and Control panel.

Audio

Audio Input Types	Input	Output
	600Ω Balanced	600Ω Balanced
	Unbalanced	Unbalanced
	Microphone	Monitor Speaker
Audio Interface Level (for nominal 60% deviation)	Balanced -20 to +10dBm	Balanced -20 to +10dBm
Audio Response Bandwidth	Unbalanced 0.3Vpp to 3Vpp	Unbalanced 0.3Vpp to 3Vpp
Audio Response	300kHz to 3.4kHz	
Audio Distortion	Flat or de-emphasized	
Audio Filtering Characteristics	≤2% at -70dBm	
	Flat or de-emphasized	
	Full band or speech band	
	Subaudible band only	
	Filters can be applied independently to each of the input sources	

Transmitter

Modulation Limiting	±2.5KHz (NB), ±5KHz (WB)	
Transmit Rise Time	2ms	
Transmit Power Rating	100W Continuous	(programmable from 10W to 100W)
	50W Continuous	(programmable from 5W to 50W)
	5W Continuous	(programmable from 1W to 5W)
	VHF/UHF	800MHz
FM Hum and Noise	-50dB (NB), 55dB (WB)	-50dB (NB), 55dB (WB)
Conducted/Radiated Emissions	-36dBm to 1GHz	-20dBm to 9GHz

Receiver

Sensitivity	0.25µV (-119dBm)	
Spurious Responses	≤100dB	
	VHF/UHF	800MHz
Intermodulation	80dB (NB), 85dB (WB)	80dB (NB), 85dB (WB)
Selectivity	85dB (NB), 90dB (WB)	79dB (NB), 84dB (WB)
Ultimate Signal to Noise	45dB (NB), 55dB (WB)	43dB (NB), 47dB (WB)

FCC and IC ID

Frequency Range	FCC Acceptance Number	FCC Part Number CRF47	IC Type Acceptance Number
136-174MHz	CASTBA7B1/8B1/9B1	15, 22, 74, 90	737A-TBAB1
193-225MHz	CASTBA7C0/8C0/9C0	80, 90T	
380-520MHz	CASTBA7H0/8H0/9H0	15, 22, 74, 90, 95A***	737A-TBAH0
792-824MHz	CASTBA7K2/8K2/9K2	15, 22, 90	737A-TBAK2
896-902MHz	CASTBAL0	22, 90	

*Power consumption is dependent on the status of the licensed power save software features and the selected settings for Tx key time, Rx cycling.

**Transmit tests without fans operating.

***9H0 does not have 95A

All parameters are measured in accordance with TIA/EIA 603 procedures unless otherwise specified.



Tait is your complete supplier of radio communications equipment offering mobile, portable and infrastructure solutions. Tait is renowned for its flexibility, responsiveness and commitment to producing innovative world-class mobile radio communications products.

Specifications are subject to change without notice and shall not form part of any contract. They are issued for guidance purposes only. Please note that not all frequency bands and power outputs are available in all markets.

The word Tait and the Tait logo are trademarks of Tait Electronics Ltd. Tait is an ISO9001: 2000 and ISO 14001: 2004 certified supplier.

AUTHORIZED DEALER