Version 3.2 November 2018

# **TB8100 Base Station – Analog**

- Base Stations
- Options & Accessories





#### **PREFACE**

#### Please read before using this product catalog.

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#### Scope:

This product catalog outlines the Tait product range.

Custom product and non-standard equipment is not listed. Please contact your Tait representative if you require information on any product not listed within this book.

#### **Product Status:**

Every care has been taken to assure that the products meet the respective regulatory requirements. However, Tait does not warrant that all products meet specific country requirements.

If you have any questions regarding product suitability please contact your Tait representative.

#### Terms and Conditions of Sale:

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#### **Update and Changes:**

The information within the product catalog is subject to change without notice and shall not form part of any contract. This information is issued for guidance purposes only. Please note that not all frequency bands and power outputs are available in all markets.

### Intelligent • Flexible • High Performance

Building on the industry-wide success of the Tait T800 Base Stations, the new generation TB8100 base station sets the standard for high-

performing analog radio communications technology. This software-flexible product is built on a foundation of flexibility for system integration, modularity and robustness.

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

With flexible, modular design and practical features, the TB8100 raises the bar for analog base stations/repeaters.

Its practical features coupled with impressive RF performance to really make a difference in high interference/RF sites makes the TB8100 the next generation analog base station.

#### The TB8100 offers you the following features:

- ▶ 255 Channels with up to 16 CTCSS or 16 DCS tones per channel
- ▶ Exceeds T800 RF performance
- ▶ Full remote control, diagnostics & self-monitoring capability
- ▶ Low standby current configuration (<120mA for typical power saving configuration)
- ▶ Compact 4U rack profile
- ▶ Choice of single 100W or dual 5 or 50W configurations per subrack
- ▶ Choice of external interface (system interface) configurations
- ▶ Intuitive PC-based programming
- ▶ Programmable power input in 1W steps, per channel
- ▶ Seamless backup battery operation and charging with ACDC supply
- ▶ Computer controlled interface via RS232 serial interface
- Programmable bandwidth per channel
- ▶ External frequency reference for QS² Simulcast applications

#### All TB8100 packages include:

- Complete subrack including front panel with dual fans
- Control panel, modules & software features as described
- Power cord for AC & ACDC systems
- Installation guide
- Programmable cable
- Programming CD (service kit software, calibration software, alarm centre software & manual)

#### Note:

## Intelligent • Flexible • High Performance

Frequency	5W	50W	100W	5W Dual	5W + 50W Dual	50W Dual
136–156	-•	<b>-</b> •	-	• •	-•	- •
148–174	• •	- •	•	• •	-•	- •
174-193	• •	- •	•	• •	-•	- •
193-225	• •	- •	•	• •	-•	- •
380-420	• •	•	•	- •	••	- •
400-440	• •	- •	•	• •	-•	- •
440-480	• •	-•	•	- •	-•	- •
470-520	• •	- •	•	• •	-•	- •
794-824 & 762-870 <sup>1</sup>	• •	- •	•	• •	-•	- •
852-854 & 928-930 <sup>1</sup>	• •	- •	•	• •	-•	- •
896-902 & 927-941 1	• •		•	- •		

<sup>= 12/24/48</sup>V PMU solution

### <sup>1</sup> – NON-ETSI Approved

- ▶ DC power options are 12/24/48VDC with AUX output.
- AC power options are 110/240VAC + AUX output.
- ▶ ACDC power options are AC + 12/24/48VDC + AUX output.
- Auxiliary (AUX) power output voltage options are 12VDC, 24VDC or 48VDC AUX.
- ▶ Other options are available including Receive Only.
- With Receive Only you can have up to five receivers/reciters with a PMU or up to seven receivers/reciters without a PMU can be fitted in a rack.

<sup>= 12</sup>VDC PA Only solution

## **Analog Base Station Configurations**

Use the options below to complete the TB8100 Base Station item codes shown on pages 6 to 8. For more configuration options, please refer to the TB8100 Base Station configuration table on page 5

#### For Example:

Replace characters in the item code to reflect the chosen options.

Single Base Station		TB8115-FFHX-0000-YZ00-10
ſ	Dual Base Station	TB8115-FFDX-FFDX-YZ00-10

#### Where:

#### Frequency Options (FF):

B2 = 136-156MHz

B3 = 148-174MHz

C1 = 174-193MHz

C2 = 193-225MHz

H1 = 400-440MHz

H2 = 440-480MHz

H3 = 470-520MHzH4 = 380-420MHz

 $K4 = 792-824 & 762-870 MHz^{1}$ 

 $L1 = 852-854 & 928-930 MHz^{1}$ 

 $L2 = 896-902 & 927-941 \text{MHz}^1$ 

<sup>1</sup> – NON-ETSI Approved

#### To order:

- replace FF with the required frequency code
- dual reciter systems require a code for each reciter
- for a dual system with 1x5W and 1x50W reciter:
  - the first FF code is for the 5W reciter
  - the second FF code is for the 50W reciter

#### Note:

- ▶ K4 frequency coverage is
  - Transmit: 762-776MHz & 850-870MHz
  - Receive: 794-824MHz
- ▶ L1 frequency coverage is
  - Transmit: 928-930MHz
  - Receive: 852-854MHz
- L2 frequency coverage is
  - Transmit: 927-941MHzReceive: 896-902MHz

#### Where:

#### System Interface (SIF) (X):

B = SIF Isolated 600 ohm audio

C = SIF Isolated 600 ohm E&M

J = SIF Isolated 600 ohm audio & ethernet (High density)

K = SIF TaitNet ethernet

L = SIF TaitNet RS232

M = SIF Isolated 600 ohm audio & RS232 (High density)

T = SIF TaitNet MPT trunked

#### To order:

▶ replace X with the required option

#### Note:

Additional cost applies for Ethernet SIF (option J & K)

#### Where:

#### PMU Options (Y):

Y = AC, DC or ACDC PMU

#### To order:

 replace Y with the required option. Please choose the PMU from the TB8100 Base Station configuration table on page 5

#### Where:

#### Power cord Options (Z):

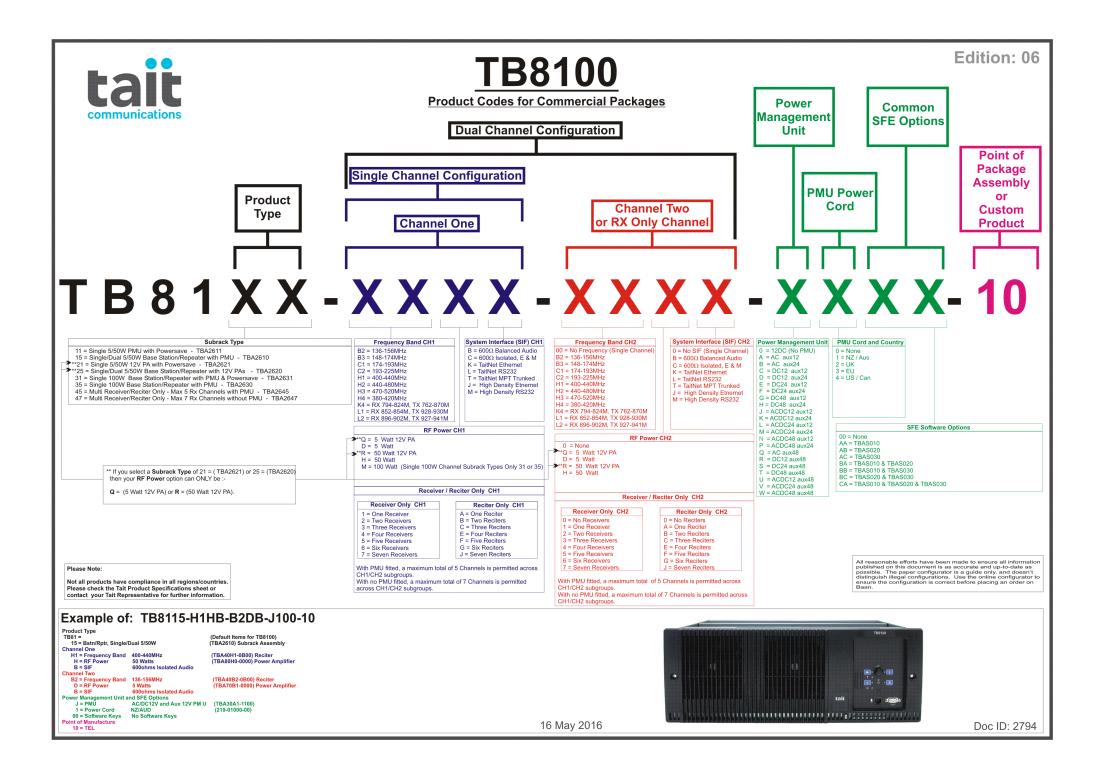
Z = AC or ACDC PMU, power cord is required

= DC PMU, a power cord is not required

#### To order:

 replace Z with the required option. Please choose the power cord from the TB8100 Base Station configuration table on page 5

#### Note:



## **Base Station - Single**

#### **Standard Package Includes:**

- Subrack including front panel with dual fans
- Control panel
- Power Management Unit (PMU) options as selected
- ▶ Power Amplifier (PA)
- ▶ Reciter (receiver/exciter) with system interface
- Service kit
- Installation guide

#### **Options:**

- ▶ Frequency: Choose the frequency ("FF" value) from the TB8100 Base Station configuration table on page 5
- ▶ System Interface (SIF): Choose the SIF ("X" value) from the TB8100 Base Station configuration table on page 5
- ▶ PMU:
  - AC = Input of 110/240VAC with AUX output
  - DC = Input of 12/24/48VDC with AUX output
  - ACDC = Inputs of 110/240VAC + 12/24/48VDC with AUX output
  - Auxiliary (AUX) power output voltage options are 12VDC, 24VDC or 48VDC AUX.
  - Other PMU options are also available, please refer to pages 15 to 18
  - Choose the PMU ("Y" value) from the TB8100 Base Station configuration table on page 5
- Power Cord: Choose the Power Cord ("Z" value) from the TB8100 Base Station configuration table on page 5. Please note that for the DC PMU option, a power cord is not required.
- ▶ Multi-reciter configurations are also available. Up to five receivers/reciters with PMU can be fitted in a rack or up to seven receivers/reciters without PMU can be fitted in a rack.
- Software feature enhancement options such as power save, alarm reporting and advanced profiles/tasks management are available on page 27

- Not all products have compliance in all regions/countries. Please check the Tait Product Specification sheet or contact your Tait Representative for further information.
- Additional configuration costs may apply
- For more configuration options, please refer to the TB8100 Base Station configuration table on page 5

ITEM CODE	DESCRIPTION
TB8115-FFDX-0000-YZ00-10	Base Station Repeater 5W AC
TB8115-FFDX-0000-Y000-10	Base Station Repeater 5W DC
TB8115-FFDX-0000-YZ00-10	Base Station Repeater 5W ACDC
TB8115-FFHX-0000-YZ00-10	Base Station Repeater 50W AC
TB8115-FFHX-0000-Y000-10	Base Station Repeater 50W DC
TB8115-FFHX-0000-YZ00-10	Base Station Repeater 50W ACDC
TB8135-FFMX-0000-YZ00-10	Base Station Repeater 100W AC
TB8135-FFMX-0000-Y000-10	Base Station Repeater 100W DC
TB8135-FFMX-0000-YZ00-10	Base Station Repeater 100W ACDC



### Base Station - Dual

#### **Standard Package Includes:**

- Subrack including front panel with dual fans
- Control panel
- ▶ Power Management Unit (PMU) options as selected
- Power Amplifier (PA)
- ▶ Reciter (receiver/exciter) with system interface
- Service kit
- Installation guide

#### Options:

- ▶ Frequency: Choose the frequency ("FF" value) from the TB8100 Base Station configuration table on page 5
- ▶ System Interface (SIF): Choose the SIF ("X" value) from the TB8100 Base Station configuration table on page 5
- ▶ PMU:
  - AC = Input of 110/240VAC with AUX output
  - DC = Input of 12/24/48VDC with AUX output
  - ACDC = Inputs of 110/240VAC + 12/24/48VDC with AUX output
  - Auxiliary (AUX) power output voltage options are 12VDC, 24VDC or 48VDC AUX.
  - Other PMU options are also available, please refer to page 15 to 18
  - Choose the PMU ("Y" value) from the TB8100 Base Station configuration table on page 5
- Power Cord: Choose the Power Cord ("Z" value) from the TB8100 Base Station configuration table on page 5. Please note that for the DC PMU option, a power cord is not required.
- Multi-reciter configurations are also available. Up to five receivers/reciters with PMU can be fitted in a rack or up to seven receivers/reciters without PMU can be fitted in a rack.
- Software feature enhancement options such as power save, alarm reporting and advanced profiles/tasks management are available on page 27

- Not all products have compliance in all regions/countries. Please check the Tait Product Specification sheet or contact your Tait Representative for further information.
- Additional configuration costs may apply
- For more configuration options, please refer to the TB8100 Base Station configuration table on page 5

ITEM CODE	DESCRIPTION
TB8115-FFDX-FFDX-YZ00-10	Base Station Repeater 5/5W AC
TB8115-FFDX-FFDX-Y000-10	Base Station Repeater 5/5W DC
TB8115-FFDX-FFDX-YZ00-10	Base Station Repeater 5/5W ACDC
TB8115-FFHX-FFHX-YZ00-10	Base Station Repeater 50/50W AC
TB8115-FFHX-FFHX-Y000-10	Base Station Repeater 50/50W DC
TB8115-FFHX-FFHX-YZ00-10	Base Station Repeater 50/50W ACDC
TB8115-FFDX-FFHX-YZ00-10	Base Station Repeater 5/50W AC
TB8115-FFDX-FFHX-Y000-10	Base Station Repeater 5/50W DC
TB8115-FFDX-FFHX-YZ00-10	Base Station Repeater 5/50W ACDC





## Base Station - with 12VDC PA only (no PMU)

#### Overview:

The PA only system is based on a 12VDC PA which contains a 12 to 28 volts converter. System is available without a Power Management Unit (PMU)

#### **Standard Package Includes:**

- ▶ Subrack including front panel with fan
- Control panel
- ▶ Power Amplifier (PA)
- Reciter (receiver/exciter) with system interface
- Service kit
- Installation guide

#### Options:

- ▶ Frequency: Choose the frequency ("FF" value) from the TB8100 Base Station configuration table on page 5
- System Interface (SIF): Choose the SIF ("X" value) from the TB8100 Base Station configuration table on page 5
- Multi-reciter configurations are also available. Up to seven receivers/reciters without PMU can be fitted in a rack.
- Software feature enhancement options such as power save, alarm reporting and advanced profiles/tasks management are available on page 27

- Not all products have compliance in all regions/countries. Please check the Tait Product Specification sheet or contact your Tait Representative for further information.
- Additional configuration costs may apply
- For more configuration options, please refer to the TB8100 Base Station configuration table on page 5

ITEM CODE	DESCRIPTION	
SINGLE RECITER SYSTEMS		
TB8125-FFQX-0000-0000-10	Base Station Repeater 5W	
TB8125-FFRX-0000-0000-10	Base Station Repeater 50W	
DUAL RECITER SYSTEMS		
TB8125-FFQX-FFQX-0000-10	Base Station Repeater 5/5W	
TB8125-FFRX-FFRX-0000-10	Base Station Repeater 50/50W	
TB8125-FFQX-FFRX-0000-10	Base Station Repeater 5/50W	



### **Base Station – Transportable Repeater**

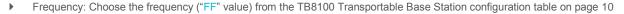
#### Overview:

The high performance TB8100 can now be packaged into a rugged lightweight Pelican case.

#### **Standard Package Includes:**

- Repeater
- ▶ Built-in 5-40W output power
- ▶ Ruggedized briefcase (IP67) available in multiple colors
- Internal duplexer
- External antenna via N-type female RF connector
- Waterproof DC input connector
- Channel change button

#### Options:

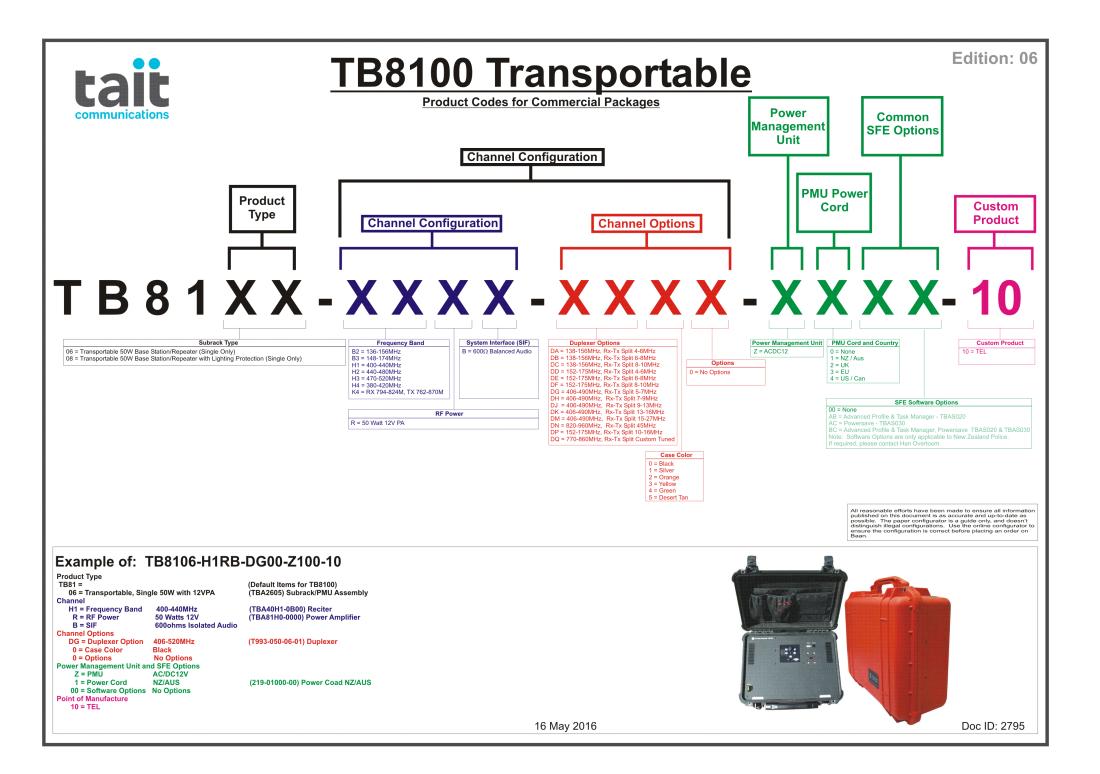


- ▶ PMU:
  - AC = Input of 110/240VAC with AUX output
  - DC = Input of 12/24/48VDC with AUX output
  - ACDC = Inputs of 110/240VAC + 12/24/48VDC with AUX output
  - Auxiliary (AUX) power output voltage options are 12VDC, 24VDC or 48VDC AUX.
  - Other PMU options are also available, please refer to page 15 to 18
  - Choose the PMU ("Y" value) from the TB8100 Transportable Base Station configuration table on page 10
- ▶ Power Cord: Choose the Power Cord ("Z" value) from the TB8100 Transportable Base Station configuration table on page 10. Please note that for the DC PMU option, a power cord is not required.

- Not all products have compliance in all regions/countries. Please check the Tait Product Specification sheet or contact your Tait Representative for further information.
- Additional configuration costs may apply
- ▶ Please contact your customer support representative for duplexer channel spacing options ("XX" value)
- ▶ For more configuration options, please refer to the TB8100 Transportable Base Station configuration table on page 10

ITEM CODE	DESCRIPTION
TB8106-FFRB-XX00-YZ00-10	Base Station Transportable Repeater without Lightning Arrestor
TB8108-FFRB-XX00-YZ00-10	Base Station Transportable Repeater with Lightning Arrestor







**TB8100** 

### Reciter (Receiver/Exciter) Options

Use the options below to complete the TB8100 Reciter item codes shown on page 12 **For Example:** 

Replace characters in the item code to reflect the chosen options.

TB8100 Reciter	TBA40FF-XXXX
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#### Where:

#### Frequency Options (FF):

B2 = 136-156MHz

B3 = 148-174MHz

C1 = 174-193MHz

C2 = 193-225MHz

H1 = 400-440MHz

H2 = 440-480MHz

H3 = 470-520MHzH4 = 380-420MHz

K4 = 794-824 & 762-870MHz<sup>1</sup>

L1 = 852-854 & 928-930MHz<sup>1</sup>

L2 = 896-902 & 927-941MHz<sup>1</sup>

<sup>1</sup> – NON-ETSI Approved

#### To order:

replace FF with the required frequency code

#### Note:

K4 frequency coverage is

Transmit: 762-776MHz & 850-870MHz

• Receive: 794-824MHz

L1 frequency coverage is

• Transmit: 928-930MHz

• Receive: 852-854MHz

▶ L2 frequency coverage is

Transmit: 927-941MHzReceive: 896-902MHz

#### Where:

#### SIF (System interface Options (XXXX):

0B00 = SIF Isolated 600 ohm audio

0C00 = SIF Isolated 600 ohm E&M

0J00 = SIF Isolated 600 ohm audio & ethernet (High Density)

0K00 = SIF TaitNet ethernet

0L00 = SIF TaitNet RS232

0M00 = SIF Isolated 600 ohm audio & RS232 (High Density)

0T10 = SIF TaitNet MPT trunked

#### To order:

- ▶ replace XXXX with the required option
- For more information about SIF options, please refer to pages19 to 25

#### Note:

 Additional cost is added to the TaitNet Ethernet SIFs (0K00 & 0J00) options

#### Note:



TB**8100** 

## Reciter (Receiver/Exciter)

#### Overview:

- ▶ A Reciter consists of a receiver and exciter, including RF, DSP & 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 behaviour.
- ▶ The unit includes an internally fitted system interface module (SIF) allowing configuring of the I/O system to suit the users' requirements.
- Single and dual reciter systems are available as standard. Multiple reciter systems are available on request - up to seven reciters or up to five reciters plus PMU in a subrack. Please contact your Tait representative for further details.

- Not all products have compliance in all regions/countries. Please check the Tait Product Specification sheet or contact your Tait Representative for further information.
- ▶ Choose the frequency ("FF" value) & SIF ("XXXX" value) from page 11
- Additional cost is added to the TaitNet Ethernet SIF.



ITEM CODE	DESCRIPTION	
TBA40FF-XXXX	Reciter with SIF Included	
TBA50FF-XXXX	Reciter Receive only with SIF Included	



**TB8100** 

## **Power Amplifiers (PA)**

#### Used with the PMU TB8100 system:

- Broadband
- ▶ Remotely configurable and programmable
- ▶ 100% duty cycle @ 60°C (140°F)
- ▶ 2.5 millisecond key-up-time
- ▶ Programmable output power in 1W steps
- Up to two 5W and/or 50W PA can be fitted into a TB8100 subrack
- A limit of one 100W PA can be fitted into a TB8100 subrack





ITEM CODE	DESCRIPTION
TBA70B1-0000	TB8100/9100 Power Amplifier 136-174M 5W
TBA70H0-0000	TB8100/9100 Power Amplifier 380-520M 5W
TBA70K2-0000	TB8100/9100 Power Amplifier 762-870M 5W
TBA80B1-0000	TB8100/9100 Power Amplifier 136-174M 50W
TBA80H0-0000	TB8100/9100 Power Amplifier 380-520M 50W
TBA80K2-0000 <sup>1</sup>	TB8100/9100 Power Amplifier 762-870M 50W
TBA90B1-0000	TB8100/9100 Power Amplifier 136-174M 100W
TBA90H0-0000	TB8100/9100 Power Amplifier 380-520M 100W
TBA90K2-0000 <sup>1</sup>	TB8100/9100 Power Amplifier 762-870M 100W

<sup>&</sup>lt;sup>1</sup> – NON-ETSI Approved



TB**8100** 

## Power Amplifiers (PA) - 12VDC

#### Used with the 12VDC PA only TB8100 system:

- Broadband
- ▶ Remotely configurable and programmable
- ▶ 100% duty cycle @ 60°C (140°F)
- ▶ 2.5 millisecond key-up-time
- ▶ Programmable output power in 1W steps
- ▶ Up to two 5W and/or 50W PA can be fitted into a TB8100 subrack

#### Note:



ITEM CODE	DESCRIPTION
TBA71B1-0000	TB8100/9100 Power Amplifier 136-174M 5W 12VDC
TBA71H0-0000	TB8100/9100 Power Amplifier 380-520M 5W 12VDC
TBA71K2-0000	TB8100/9100 Power Amplifier 762-870M 5W 12VDC
TBA81B1-0000	TB8100/9100 Power Amplifier 136-174M 50W 12VDC
TBA81H0-0000	TB8100/9100 Power Amplifier 380-520M 50W 12VDC
TBA81K2-0000 <sup>1</sup>	TB8100/9100 Power Amplifier 762-870M 50W 12VDC

<sup>&</sup>lt;sup>1</sup> – NON-ETSI Approved



**TB8100** 

## **Power Management Units (PMU)**

#### Standard Features for Standby power supply include:

- Useful for low current consumption operation
- ▶ Used in conjunction with software-licensed power save feature TBAS030
- Can run Reciter alone so main 500W DC supply can be switched off for extended quiet periods
- Fitted to AC, DC & ACDC supply
- Low power option can only be enabled for single channel operation

#### Standard Features for Auxiliary power supply include:

- TB8100 base station does not use the output of the Auxiliary power supply
- Floating output may be negatively or positively earthed
- Can be configured to be on all of the time (to supply external equipment) or only while mains is available
- ▶ Required when base station is to be used with TaitNet MPT1327 controllers

- Not all products have compliance in all regions/countries. Please check the Tait Product Specification sheet or contact your Tait Representative for further information.
- ▶ Standby and Auxiliary Power Supplies are included as standard





TB**8100** 

## Power Management Units (PMU) - AC

#### **Standard Package Includes:**

- ▶ 88 to 264V input with power factor correction
- Sufficient output power to drive 1 x 100W transmitter or up to two 5/50W transmitters
- ▶ Remotely controllable and programmable
- Built-in alarms and diagnostics

#### Note:



ITEM CODE	DESCRIPTION
TBA30A0-0100	TB8000/9000 Power Management Unit AC aux12
TBA30A0-0200	TB8000/9000 Power Management Unit AC aux24
TBA30A0-0400	TB8000/9000 Power Management Unit AC aux48



TB**8100** 

## Power Management Units (PMU) - DC

#### **Standard Package Includes:**

- Operates from 12, 24 or 48VDC supply
- Input supply can be negatively or positively earthed
- ▶ Sufficient output power to drive 1 x 100W transmitter or up to two 5/50W transmitters
- Remotely controllable and programmable
- Built-in alarms and diagnostics

#### Note:



ITEM CODE	DESCRIPTION
TBA3001-1100	TB8000/9000 Power Management Unit DC12 aux12
TBA3001-1200	TB8000/9000 Power Management Unit DC12 aux24
TBA3001-1400	TB8000/9000 Power Management Unit DC12 aux48
TBA3002-2100	TB8000/9000 Power Management Unit DC24 aux12
TBA3002-2200	TB8000/9000 Power Management Unit DC24 aux24
TBA3002-2400	TB8000/9000 Power Management Unit DC24 aux48
TBA3004-4100	TB8000/9000 Power Management Unit DC48 aux12
TBA3004-4200	TB8000/9000 Power Management Unit DC48 aux24
TBA3004-4400	TB8000/9000 Power Management Unit DC48 aux48



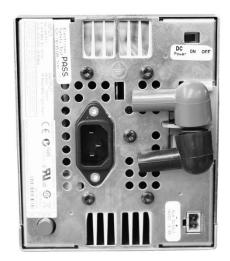
**TB8100** 

## Power Management Units (PMU) - ACDC

#### **Standard Package Includes:**

- Seamless and automatic switching from AC to DC
- AC operates 88 to 264V input with power factor correction
- ▶ DC operates from 12, 24 or 48VDC supply
- ▶ DC input supply can be negatively or positively earthed
- Sufficient output power to drive 1 x 100W transmitter or up to two 5/50W transmitters
- Remotely controllable and programmable
- Built-in alarms and diagnostics

#### Note:



ITEM CODE	DESCRIPTION
TBA30A1-1100	TB8000/9000 Power Management Unit ACDC12 aux12
TBA30A1-1200	TB8000/9000 Power Management Unit ACDC12 aux24
TBA30A1-1400	TB8000/9000 Power Management Unit ACDC12 aux48
TBA30A2-2100	TB8000/9000 Power Management Unit ACDC24 aux12
TBA30A2-2200	TB8000/9000 Power Management Unit ACDC24 aux24
TBA30A2-2400	TB8000/9000 Power Management Unit ACDC24 aux48
TBA30A4-4100	TB8000/9000 Power Management Unit ACDC48 aux12
TBA30A4-4200	TB8000/9000 Power Management Unit ACDC48 aux24
TBA30A4-4400	TB8000/9000 Power Management Unit ACDC48 aux48



**TB8100** 

## System Interface Card – Isolated 600 ohm Audio

#### Overview:

Every reciter has a System Interface (SIF) card in it. The SIF is responsible for all the non-RF inputs & outputs to and from the reciter. The SIF type is selectable to meet specific application requirements.

- D25 connector
- ▶ Galvanically isolated balanced input & output audio lines
- Non-isolated unbalanced input & output audio lines
- ▶ 6 digital inputs, 2 digital outputs
- 4 digital input/outputs
- ▶ 1 coax relay drive output
- Tx key & Rx gate



ITEM CODE	DESCRIPTION
TBA-SP-S0B0	TB8100 Spare System Interface Isolated 600 ohm Audio



**TB8100** 

## System Interface Card – Isolated 600 ohm Audio E&M

#### Overview:

Every reciter has a System Interface (SIF) card in it. The SIF is responsible for all the non-RF inputs & outputs to and from the reciter. The SIF type is selectable to meet specific application requirements.

- D25 connector
- Interface module with balanced & 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



ITEM CODE	DESCRIPTION
TBA-SP-S0C0	TB8100 Spare System Interface Isolated 600 ohm E&M



**TB8100** 

## System Interface Card – TaitNet RS232

#### Overview:

Every reciter has a System Interface (SIF) card in it. The SIF is responsible for all the non-RF inputs & outputs to and from the reciter. The SIF type is selectable to meet specific application requirements.

- ▶ D15 connector to interface directly with TaitNet system
- ▶ Balanced & unbalanced input & output audio lines
- > 3 digital inputs, 1 digital output
- Tx key & Rx gate
- ▶ D6 RS232 connector



ITEM CODE	DESCRIPTION
TBA-SP-S0L0	TB8100 Spare System Interface TaitNet RS232



**TB8100** 

## **System Interface Card – TaitNet**

#### Overview:

Every reciter has a System Interface (SIF) card in it. The SIF is responsible for all the non-RF inputs & outputs to and from the reciter. The SIF type is selectable to meet specific application requirements.

- ▶ D15 connector to interface directly with TaitNet system
- ▶ Balanced & unbalanced input and output audio lines
- > 3 digital inputs, 1 digital output
- Tx key & Rx gate



ITEM CODE	DESCRIPTION
TBA-SP-S0T1	TB8100 Spare System Interface TaitNet



**TB8100** 

## **System Interface Card – TaitNet Ethernet**

#### Overview:

Every reciter has a System Interface (SIF) card in it. The SIF is responsible for all the non-RF inputs & outputs to and from the reciter. The SIF type is selectable to meet specific application requirements.

- ▶ Ethernet interface plus D15 connector
- ▶ Balanced & unbalanced input & output audio lines
- ▶ 4 digital input/outputs
- ▶ Optically isolated E&M interface
- Tx key & Rx gate



ITEM CODE	DESCRIPTION
TBA-SP-S0K0	TB8100 Spare System Interface TaitNet Ethernet



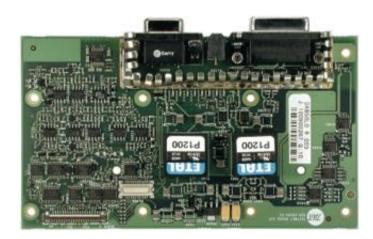
**TB8100** 

## System Interface Card – High Density RS232

#### Overview:

Every reciter has a System Interface (SIF) card in it. The SIF is responsible for all the non-RF inputs & outputs to and from the reciter. The SIF type is selectable to meet specific application requirements.

- ▶ High density HD26 connector
- RS232 DB9 connector
- Galvanically isolated balanced & unbalanced input and output audio lines
- ▶ 6 digital inputs, 2 digital outputs
- ▶ 4 digital inputs/outputs
- ▶ 1 coax relay drive output
- Tx key & Rx gate
- RSSI output
- Auxiliary DC supply output
- ▶ High density HD26 to DB25 adaptor board



ITEM CODE	DESCRIPTION
TBA-SP-S0M0	TB8100 Spare System Interface Isolated 600 ohm Audio & RS232



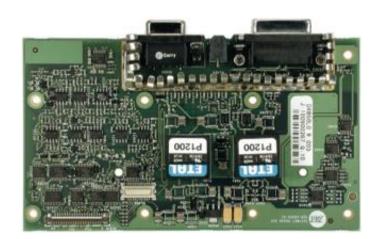
**TB8100** 

## **System Interface Card – High Density Ethernet**

#### Overview:

Every reciter has a System Interface (SIF) card in it. The SIF is responsible for all the non-RF inputs & outputs to and from the reciter. The SIF type is selectable to meet specific application requirements.

- ▶ High density HD26 connector
- Ethernet interface
- ▶ Galvanically isolated balanced input & output audio lines
- Non-isolated balanced input & output audio lines
- ▶ 6 digital inputs, 2 digital outputs
- 4 digital inputs/outputs
- ▶ 1 coax relay drive output
- Tx key & Rx gate
- RSSI output
- Auxiliary DC supply output
- ▶ High density HD26 to DB25 adaptor board



ITEM CODE	DESCRIPTION
TBA-SP-S0J0	TB8100 Spare System Interface Isolated 600 ohm Audio & Ethernet



**TB8100** 

## **Application Boards**

#### High Density E&M application board:

- ▶ The High Density E&M Applications Board offers greater flexibility and additional functionality over the E&M Applications Board.
- ▶ The board offers Tx relay as an alternative connection for coaxial relay, receive signal strength indicator connection & additional digital I/O support. The TBA101E provides a multitude of connection options for ultimate flexibility.
- ▶ The High Density E&M Applications Board must be fitted to TB8100 reciters with either the High Density Ethernet, or High Density RS232 System Interface boards.

#### Paging application board:

- ▶ The paging applications board makes it possible for the TB8100 to be used in POCSAG paging applications at 512, 1200 & 2400 baud.
- Modem or delay line operation is not provided, but the TBA101B is designed to interface to paging controllers with these functions
- ▶ To use this applications board, the TB8100 reciter must be fitted with one of the following system interface boards: TBA-SP-S0L0 (TB8100 Spare System Interface TaitNet RS232 ) or TBA-SP-S0T1 (TB8100 Spare System Interface TaitNet)

ITEM CODE	DESCRIPTION
TBA101A	TB8100 TaitNet RS232 E&M Applications Interface Board
TBA101B	TB8100 Paging Applications Interface Board
TBA101E	TB8100 HD26 to DB25 RJ45 E&M Applications Interface Board



**TB8100** 

### **Software Licenses**

Note: Product information sheets for each SFEs, please see pages 28 to 30

ITEM CODE	DESCRIPTION
TBAS010	SFE Key - Alarm Reporting (TB81)
TBAS020	SFE Key - Advanced Profiles & Task Manager (TB81)
TBAS030	SFE Key - Power Saving Modules (TB81)

Software maintenance and support is available on an annual renewal basis. Software maintenance ensures your software investment remains fully operational, high performing and current through updates that also include valuable new features.



TB**8100** 

### **Power Save Upgrade**

#### Introduction

With the Power Save software license (TBAS030), the TB8100 base station offers advanced software control to dramatically reduce the power consumption of the entire base station.

The power usage efficiencies of the Power Save upgrade make it ideal for battery and solar powered sites.

#### **Standard Power Save**

The standard TB8100 base station gives you one level of power save when you select a transmit keyup time and a receiver cycling time in normal mode. This can reduce current consumption by up to 4W.



Receiver cycling can provide additional power saving by turning the receiver off and then on again for a brief period to check if there is a signal. Receiver cycling time is selectable with 0, 5, 10, or 20 mS options.

Transmit keyup is selectable at 2, 5, and 20mS.

#### Power Save upgrade

An optional upgrade, the Power Save software license provides all the TB8100's power save capabilities.

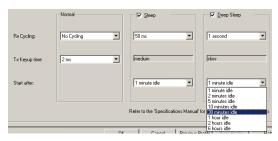
The Power Save upgrade allows you to use Sleep and Deep Sleep modes and determine how the base station makes the transitions into these.

In Sleep mode, the receiver cycling time is extended to 200mS. The PA is set to idle, both the exciter and receiver synthesizers are rested, and the PMU is in hysteresis mode.

Sleep mode can reduce current consumption by up to 7.5W.

In Deep Sleep mode, the receiver cycling time can be as slow as one second. The TB8100 switches off the PMU DC-DC converter and runs using the standby power supply module. Because the highly efficient standby supply provides 10W and only powers the reciter, power savings are dramatic.

Deep sleep mode can reduce current consumption by up to 11W.



With the Power Save software license, you can also specify how long the base station runs in a mode before making the transition to the next mode. This enables you to switch more circuitry off during quiet times and to have a quicker response when there is more traffic.

For instance, the base station can go into sleep mode after one minute without activity, and into deep sleep after two hours of inactivity.

#### Requirements

Power Save is available for 5W, 50W and 100W base stations. For PMU systems, there can be only one base station in the subrack. Dual base stations cannot run Power Save unless they are 12VDC PA-only systems.

The TBA2010 Power Save Control Panel is designed for use with the Power Save software license. It has only one LED and most of its circuitry can be switched off, saving even more power.

Power Save operates on AC/DC and DC-only systems. Power Save should not be used with an AC-only system.

#### **Software Licensing**

The TB8100 has a range of powerful capabilities, but some of them are only available with a license. Tait's software licensing scheme means that you can select and pay for those features that your network will use. You can either order a base station with the features you need already licensed, or obtain license keys later on.

A license key is an encrypted code that only works on a single reciter. A key is required for each reciter in the network.



**TB8100** 

## **Alarm Reporting Upgrade**

#### Introduction

Monitor an entire network from a central location with the TB8100 base station and an Alarm Reporting software license (TBAS010). This means you don't need to manually connect to each base station to check it. At the first sign of trouble, the base station dials up an Alarm centre and provides it with a list of recent alarms and other status information. The Alarm centre can then email this information to one or more email addresses.

#### **Standard Alarm Offering**

As a standard feature, the TB8100 continuously checks 43 different alarm parameters. These cover all modules of the TB8100: the Reciter, PMU, and PA, as well as external inputs such as line levels and received signal strength.

If an alarm is triggered, the Alarm LED on the front of the TB8100 flashes. If a Service Kit is logged on, it displays a flashing alarm icon.

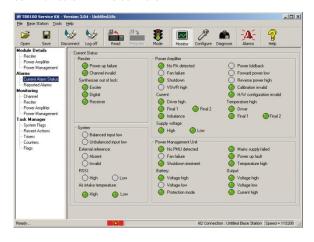
The TB8100 base station lets you know that an alarm has been triggered via:

- Over-the-air alarm pip tones
- · Over-the-line alarm pip tones
- Activating a digital output (to initiate automatic switchover, for example)

#### **Additional Functionality**

The Alarm Reporting software license enables the base station to connect to the Alarm centre. This is a PC-based application that combines alarm logs in a single display.

The Alarm centre software comes free with every TB8100 base station, but only base stations with an Alarm Reporting license can communicate with the software.



With the additional functionality offered by the Alarm Reporting software license, the TB8100 will:

- 1. Send an alarm log to an Alarm centre
- 2. Send an email, which contains alarms & other status information, to one or more email addresses

For example, the Alarm centre can send each email to two recipients: the technician who must fix the problem, and the administrator.

Alarm Reporting Benefits

Alarm Reporting and the Alarm centre keep you well informed about the behaviour of your network.

Using the Alarm Reporting software license to monitor the Alarm centre means that at the very least, staff find out about faults before a user rings up.

One Alarm centre can forward emails from multiple base stations to multiple email addresses.

If different technicians cover different areas of the network, you can use multiple Alarm centres or program the base stations with different email addresses depending on their location.

#### Requirements

To run the Alarm Reporting software license, you need:

- PC with at least a dial-up modem
- For each site installation, a communications link back to Alarm centre (for example, a telephone line and dial-up modems or Asynchronous Port Switches)

#### **Software Licensing**

The TB8100 has a range of powerful capabilities, but some of them are only available with a license. Tait's software licensing scheme means that you can select and pay for those features that your network will use.

You can either order a base station with the features you need already licensed, or obtain license keys later on.

A license key is an encrypted code that only works on a single reciter. A key is required for each reciter in the network.



TB**8100** 

### **Advanced Profiles Upgrade**

#### Introduction

The most flexible base station on the market, the TB8100 gives you more control over your channel configuration with the Advanced Profiles software license.

The Advanced Profiles software upgrade (TBAS020) gives you access to many of the most advanced features of the TB8100 base station.

- · Additional Task Manager tasks
- · Channel profiles
- Signaling profiles

#### Task Manager

A standard TB8100 can have up to 40 enabled tasks for handling alarms, digital inputs and outputs.

The Advanced Profiles software license expands the number of tasks that can be enabled to 200. This is useful when there are many small applications and is essential for any larger application.

The combination of additional tasks and advanced profiles means that Task Manager can dramatically increase configuration flexibility.

#### **Profiles - Channel Profile**

The standard TB8100 base station has one "default" channel profile. An Advanced Profiles upgrade provides 16 channel profiles. Each channel can be assigned a different profile.

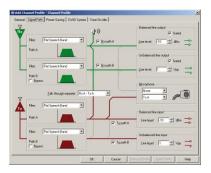
Channel profiles are simple to define and change using the Service Kit programming software. It is easy to duplicate channel profiles when adding new base stations to your system.

When upgrading your system, it is possible to save old channel configurations and revert back to saved profiles if required.

#### Signal Path

The TB8100 base station has a single "default" signal path profile as standard. The two receiver and two transmitter audio paths use the same filtering characteristics.

With the Advanced Profiles license, audio filtering characteristics are independently selectable for both receive and transmit paths.



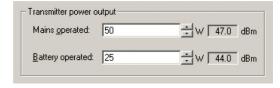
For example, repeated audio can use flat full band audio filters, while the line-in audio is pre-emphasized and the line-out audio is deemphasized.

This allows immense flexibility, for instance, it is possible to use one audio path for speech and the other for data or sub audible Signaling simply by selecting filters to optimize the output for the nature of the traffic.

#### **Transmitter Power**

Power setting is configurable on a per-channel basis on the standard TB8100. Only a single power level can be entered.

With the Advanced Profiles software license, two transmitter power settings can be defined, based on the power source.



This makes power control far easier for ACDC systems where batteries can only supply power for a limited time.

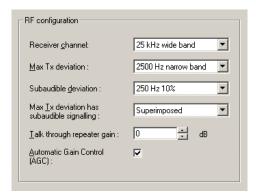


TB8100

### **Advanced Profiles Upgrade (cont.)**

#### **Channel Spacing**

The standard TB8100 base station has 12.5kHz, 20kHz and 25kHz channel spacing on a per channel basis. Choosing the channel spacing automatically sets the same receiver and transmitter bandwidth and the transmitter full system deviation.



With Advanced Profiles, there is more flexibility. Independently of the channel spacing setting, the transmitter can be set to full system deviation of 5000Hz, 4000Hz or 2500Hz.

The TB8100 can receive a wide band signal and repeat it as narrowband, useful when a system is being converted from one band to another, resulting in a mix of old and new terminals working the repeater sites.

#### **Profiles - Signaling Profile**

The standard TB8100 has one receive and one transmit tone (CTCSS or DCS).

With the Advanced Profiles software license, up to 16 receive tones can be used, with any combination of CTCSS and DCS, including CTCSS to DCS translation.

A complete 16 tone panel for community repeater applications can be configured using Advanced Profiles.

Most base stations can function only as a repeater or a base station. With an Advanced Profiles software license, the TB8100 can dynamically switch between base station and repeater functions, based on the sub audible code detected.

#### **Software Licensing**

The TB8100 has a range of powerful capabilities, but some of them are only available with a license. Tait's software licensing scheme means that you can select and pay for those features that your network will use.

You can either order a base station with the features you need already licensed, or obtain license keys later on.

A license key is an encrypted code that only works on a single reciter. A key is required for each reciter in the network.



**TB8100** 

### **Tone Remote**

#### Overview:

- ▶ Tait can no longer manufacture the TBA0M0\* tone remote adaptor due to component obsolescence. The Zetron Model 250 can provide basic functionality of channel change and monitor for the TB8100. Please refer to Technical Note 2665.
- ▶ The TB8100 Zetron 250 Tone Remote comes with its Base Station adaptor cable
- For more detailed information please see the Zetron website.

ITEM CODE	DESCRIPTION
TT0001-0001	Zetron 250 Tone Remote for TB8100

### **Change-over Module**

#### Overview:

- ▶ The TA2444-01 TB8100 change-over module provides automated failure protection for Tait TB8100 base station equipment.
- ▶ The TA2444-01 provides the physical change-over mechanics & interfaces to external alarm components & termination points for remote audio connections.
- ▶ Requires one TA2444-01 module & one software feature enabler TBAS020 (Advanced profiles & task manager) per base station.

ITEM CODE	DESCRIPTION
TA2444-01	TB8100 TaitNet RS232 E&M Applications Interface Board
TA2444-21	TB8100 HD26 to DB25 RJ45 E&M Applications Interface Board

## Power Management Units (PMU) - Options Board

Note: These provide a DC output to power auxiliary equipment.

ITEM CODE	DESCRIPTION
TBA-SP-WDA1	TB81/91/93 Spare PMU Auxiliary Supply 12VDC 40W
TBA-SP-WDA2	TB81/91/93 Spare PMU Auxiliary Supply 24VDC 40W
TBA-SP-WDA4	TB81/91/93 Spare PMU Auxiliary Supply 48VDC 40W



**TB8100** 

### **Accessories**

Note: Power save is only available in single reciter PMU systems or single & dual reciter 12VDC PA only systems.

ITEM CODE	DESCRIPTION	
FRONT PANELS		
TBA-SP-F2130	TB8100/9100 Spare Front Panel without Fans & no Labelling	
TBA-SP-F2132	TB8100/9100 Spare Front Panel with 2 Fans & no Labelling	
TBA-SP-F2135	TB8100/9100 Spare Front Panel with PA Fan & no Labelling	
TBA-SP-F2136	TB8100/9100 Spare Front Panel with PMU Fan & no Labelling	
CONTROL PANELS (SPARES)		
TBA-SP-2040	TB8100 Spare Dual Reciter Control Panel	
TBA-SP-2060	TB8100/9100 Spare Multi Reciter Control Panel	
AUXILLIARY POWER CORDS		
TBAA04-02	TB8100 Single Channel Auxiliary Power Cable 4Way Kit	
TBAA04-03	TB8100 Dual Channel Auxiliary Power Cable 4Way Kit	
TBAA04-05	TB8100/9100 Dual Channel Auxiliary Power Cable 2Way Kit	
MICROPHONE		
T02-00005-AAAA	TM Standard Microphone	
COAXIAL RELAY ASSEMBLY		
TBAA03-10	TB8100 Relay Coax Assembly Fit with Single Mounting Bracket	
SUPPORT BRACKET		
TBAA03-13	TB8000/9000 Auxiliary Support Bracket	
HANDLE		
TBAA03-16	TB8000/9000 Carrying Handles Note: Can only be used with restriction of Hazardous Substances (RoHS) compliant (silver/blue) subracks.	
PROGRAMMING		
TBA0P00	TB8000 Service Kit with Cable & CD	
TBA0P10	Programming Cable	
POWER CORD		
T952-310	Mains Power Lead ANZ-IEC	
T952-320	Mains Power Lead UK-IEC	
T952-330	Mains Power Lead EUR-IEC	
T952-340	Mains Power Lead US/CAN IEC	
CABINETS		
Note: The TB8100/9100 cabinets maximize thermal performance with front door vents allowing cool air to circulate through the base stations & out of slots in the top of the cabinet. A perspex area in the front door allows the user interface to be visible.		
T-C25U19L-00	Cabinet 25U Black 19" 600x600mm with Front & Rear Doors	
T-C38U19L-00	Cabinet 38U Black 19" 600x600mm with Front & Rear Doors	
T-C45U19L-00	Cabinet 45U Black 19" 600x600mm with Front & Rear Doors	



TB**8100** 

### **Service Accessories**

#### Calibration test unit:

- The 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 runup, especially when commissioning new configurations and running radio diagnostics
- ▶ Supplied with cables for use with the TB8100 and TB9100



#### Tool kit includes:

- 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
- ▶ Tuning tool Johanson 8777
- ▶ Spanner 5/16
- Socket head M3 nuts
- Tool bag



ITEM CODE	DESCRIPTION
TBA0STU	Base Station Calibration Test Unit & Cable
TBA0ST2	Base Station Tool Kit