WST

WS Technologies Inc.

*Innovation and Quality*

# New! STB100 Test Bench

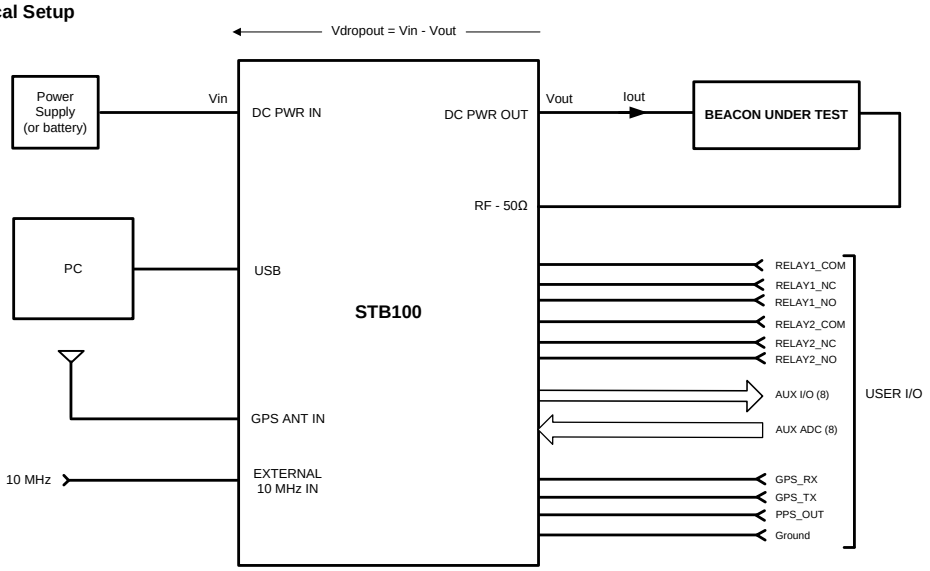
***Our customers asked for a PC-based Test Bench version of the popular BT100 handheld Beacon Tester – we listened - and created a feature-rich Test Bench that packs a lot of extra measurement capability into a quality piece of test gear.***

The new STB100 Test Bench is the perfect tester for maintenance facilities, test facilities, beacon manufacturers, beacon developers, and any anyone else that does not require the portability of a handheld tester. This new model will test 406 MHz, 121.5 MHz, 243 MHz, AIS, and 406 MHz frequency stability. Very accurate DC current and voltage sensing allows for characterization of the DC power supplied to a beacon. Measure leakage current down to 200 nA. Dual temperature probes integrate temperature data with your measurement data. The User I/O interface adds 2 relays, 8 analog I/O lines, 8 ADC input lines – all for user defined functions. The internal GPS receiver allows for delta distance measurement for location encoded beacons as well as a timing reference for AIS measurements. The STB100 interfaces with the user's PC. The optional API set allows advanced users to control the unit in order to create their own customized User Interface.

**FEATURES INCLUDE**

- measures all 406, 121.5, 243, AIS parameters
- receives all Cospas-Sarsat frequency channels and decodes all protocols
- measures and computes 406 MHz frequency stability
- direct 50Ω RF input
- alternate Antenna input
- monitors the DC supply to a beacon over a wide range: 1 to 30V, 5mA to 8A
- Vin to Vout low dropout voltage of 100mV/A
- measures beacon leakage current
- overload protection
- streams measurement data into delimited text files – for easy analysis
- creates PDF Test Report
- connect up to two external temperature probes
- User-configurable with API set
- each unit includes a Certificate of Calibration
- free software and firmware updates online
- outstanding customer support
- Cospas-Sarsat Second Generation Beacon ready


**Typical Setup**




**Comply with FAA Part 91.207, CAR 571 Appendix G, and CAA Euro CAE requirements for ELT certifications and MSC Circ. 1039 and 1040 for EPIRB Certifications. Make sure the beacons you are testing are operating properly by testing them thoroughly!**

Available soon! Visit www.wst.ca

# STB100 SPECIFICATIONS

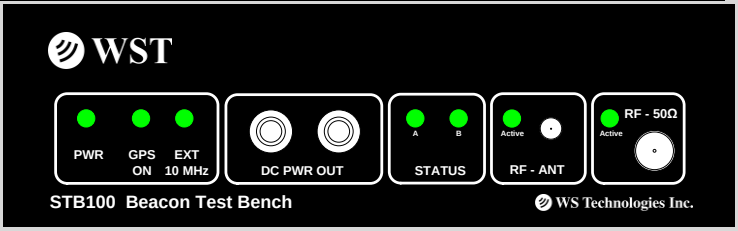
| 406 MHz Measurements | | STB100 | Options: -add AIS Rx | Options: -add AIS Rx/Tx | Uncertainty |
|---|---|---|---|---|---|
| Measures all Cospas-Sarsat Channels | | • | | | - |
| 15 HEX ID | | • | | | - |
| Full HEX | | • | | | - |
| Decodes all Cospas-Sarsat protocols | | • | | | - |
| Frequency (Ext Ref) | | • | | | ± 1 Hz |
| Frequency (Int Ref)<br>Leaving factory<br>Long Term | | • | | | <br>± 60 Hz<br>± 1.0 ppm/yr |
| Frequency Stability (using Ext Reference) | Nominal Frequency | • | | | ± 2.5 x $10^{-11}$ |
| | Short Term | • | | | |
| | Medium Term – Mean Slope | • | | | |
| | Medium Term - Residual | • | | | |
| Power | | • | | | ± 0.25 dB[1] |
| Power rise time | | • | | | ± 0.5 ms |
| Pre-burst level | | • | | | ± 0.5 dB |
| Pulse Repetition period | | • | | | ± 10 ms |
| Bit rate | | • | | | ± 0.2 bps |
| CW preamble time | | • | | | ± 0.8 ms |
| Total transmission time | | • | | | ± 0.8 ms |
| Rise time | | • | | | ± 10 µs |
| Fall time | | • | | | ± 10 µs |
| Phase deviation: positive | | • | | | ± 0.04 rad |
| Phase deviation: negative | | • | | | ± 0.04 rad |
| Modulation phase symmetry | | • | | | ± 0.005 |
| **121.5/243 MHz Measurements** | | | | | |
| Frequency (Ext Ref) | | • | | | ± 30 Hz |
| Frequency (Int Ref)<br>Leaving factory<br>Long Term | | • | | | <br>± 250 Hz<br>± 1.5 ppm/yr |
| Peak Power | | • | | | ± 1dB |
| Sweep Direction | | • | | | - |
| Audio Frequency - upper | | • | | | ± 30 Hz |
| Audio Frequency - lower | | • | | | ± 30 Hz |
| Audio Sweep Range | | • | | | ± 60 Hz |
| Modulation Index | | • | | | ± 5% |
| Sweep Rep Rate | | • | | | ± 0.1 Hz |
| Duty Cycle | | • | | | ± 2% |
| **AIS Measurements** | | | | | |
| Frequency (Ch 87B & 88B) (Ext Ref) | | | • | • | ± 30 Hz |
| Frequency (Ch 87B & 88B) (Int Ref)<br>Leaving factory<br>Long Term | | | • | • | <br>± 250 Hz<br>± 1.5 ppm/yr |
| Output power | | | • | • | ± 0.5dB |
| Digital Data (Burst Details for bursts 1-8) | | | • | • | - |
| Tx AIS for GMDSS | | | | • | - |
| **Graphic Measurements** | | | | | |
| -406 spectrum mask graphics data | | • | | | - |
| -406 output power during burst graphic data | | • | | | - |
| -406 phase modulation graphics data | | • | | | - |

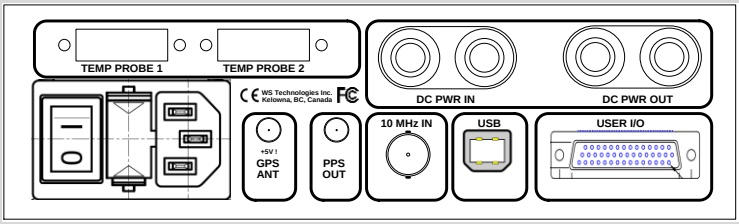
*35-39 dBm

| Miscellaneous Measurements | Range | Uncertainty |
|---|---|---|
| Vin @ DC PWR IN | 1V to 30V | ± 2% |
| Vout @DC PWR OUT | 1V to 30V | ± 2% |
| Iout @DC PWR OUT | 5mA to 8A | ± 2% (>100mA) |
| leakage current @DC PWR OUT | 200 nA to 40 µA | ± 5% |
| Vdropout (Vin to Vout) | 100 mV at 2 A | - |
| Aux Analog Input (Aux ADCn) | 0 – 12V | ± 2% |
| Temperature (probe 1 and probe 2) | -60°C to +75°C | ± 0.5 C° |

| Interface Parameters | | |
|---|---|---|
| **50 Ω RF Input** | | |
| RF Range<br>406 MHz<br>121.5 MHz/243 MHz<br>AIS | | <br>>10 m<br>>3 m<br>>3 m |
| Connector | | BNC-f |
| VSWR | | 1.20:1 |
| Dynamic Range | 406 MHz Burst | 0 dBm to +43 dBm |
| | 121.5 MHz/243 MHz | -5 dBm to +35 dBm |
| | AIS | 0 dBm to +43 dBm |
| Absolute Maximum Input Level (Burst) | | +44 dBm |
| Absolute Maximum Input Level (Continuous) | | +35 dBm |
| **Antenna RF Input** | | |
| Connector | | SMA-m (RP) |
| Absolute Maximum Input Level | | 10 dBm |
| **10 MHz Input** | | |
| Connector | | SMA-f |
| VSWR | | 1.20:1 |
| Input Level Range | | -10 to +10 dBm |
| **GPS ANT Input** | | |
| Connector | | SMA-f |
| Bias | | +5V current limited |
| **USER I/O Connector** | | |
| Connector | | D-subminiature, 26 pin, HD |
| Functions:<br>-AUX I/O<br>-AUX ADC<br>-RELAY1<br>-RELAY2<br>-PPS Out<br>-GPS Tx<br>-GPS Rx<br>-Ground | | <br>-8 I/O lines, 5V TTL Tolerant<br>-8 analog inputs, 0V -12 V<br>-Relay1 NC/NO 60V 2A<br>-Relay2 NC/NO 60V 2A<br>-GPS 1 PPS Output<br>-GPS Tx<br>-GPS Rx<br>-Ground |
| **PPS OUT** | | |
| Connector | | SMA-f |
| Level | | Logic level |
| **AC Power Input** | | |
| Connector | | IEC 320 Appliance Input |
| Fuse | | 240V 1A |
| Voltage | | 85-264 VAC |
| Frequency | | 47-63 Hz |

| Environmental and Mechanical | |
|---|---|
| Operating Temperature Range | +10°C to +35°C |
| Storage Temperature Range | -20°C to +60°C |
| Temperature Probe type | RTD |
| Dimensions: w x l x h mm (inches) | 210 (8.3) x 280 (11.1) x 64 (2.5) |
| Weight | 2.73 kg (6.0 lbs) |




***Ordering options*** - start with the base configuration …

**STB100 –** the basic version

***Then choose your options …***

**add AIS: AIS (Rx) OR AIS (Rx & Tx)**
Adds the additional capability to decode and measure the AIS channel in AIS-EPIRBs (Rx only) or GMDSS (Rx & Tx)

**API Set** – allows advanced users to create their own User Interface

***Ordering codes …*** **STB100 – 1 0 0**

- 1: 0 = No AIS; 1 = adds AIS (Rx); 2 = adds AIS (Rx&Tx)
- 0: 0 = No API; 1 = adds API Set

***Accessories:***
**WST Temperature Probe –** p/n 850-PRB100
**User I/O Breakout Board and Cable –** p/n 850-BB100


**Developed and manufactured in Canada by:**
WST WS Technologies Inc.
Kelowna, BC CANADA
info@wst.ca
wst.ca


**WS Technologies Inc. is an ISO 9001 Certified company**