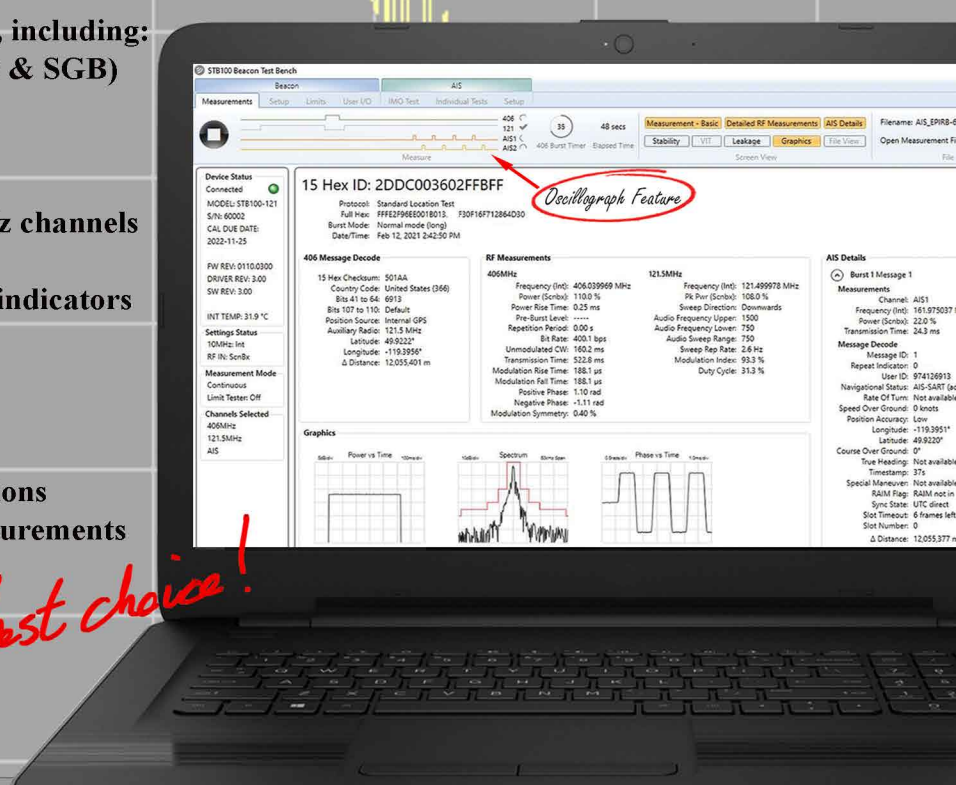
WST WS Technologies Inc.

STB100 Beacon Test Bench

With its comprehensive list of measurement capabilities, the STB100 Beacon Test Bench is the top choice of industry professionals, worldwide.

STB100 FEATURES INCLUDE:

- Measure and decode all Cospas-Sarsat beacons, including:
  - First and Second Generation Beacons (FGB & SGB)
  - ELTs, EPIRBs, and PLBs
  - AIS-EPIRBs, MOBs, AIS-SARTs
  - AIS Transceivers (Class A & B)
  - 121.5, 243, 406, and 162 (AIS1 & AIS2) MHz channels
  - ELT(DT) and RLS Protocols
- Limit Tester software for user-defined pass/fail indicators
- Real-time measurement results
- Custom PDF Test Report generator
- I/O breakout board and Temperature Probes (PN 850-BB100 and 850-PRB100)
- Optional API command set for custom applications
- Beacon DC voltage, current (and leakage) measurements
- Frequency Stability



Your best choice!

Certified System ISO 9001:2015

WS Technologies Inc. is an ISO9001 Certified company

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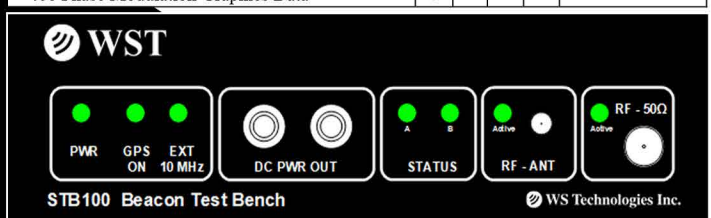
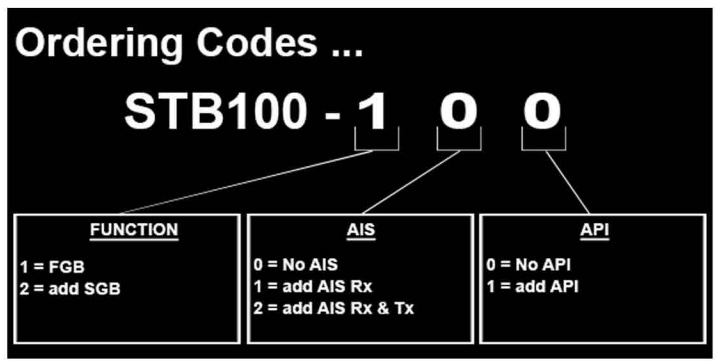
STB100 Technical Specification

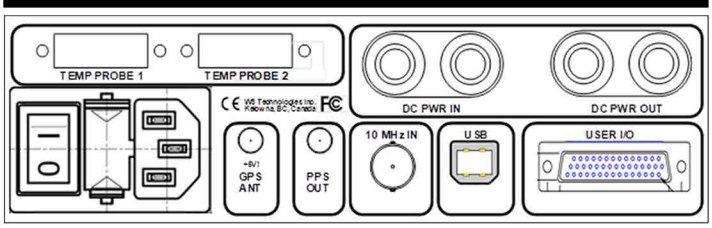
406 MHz Measurements		STB100	add AIS (Rx)	add AIS (Rx & Tx)	add SGB	Uncertainty
First Generation Beacon (FGB)						
Measures all Cospas-Sarsat Frequency Channels		•				-
15 HEX ID & Full HEX		•				-
Decodes all Cospas-Sarsat Protocols		•				-
Frequency[1] (Ext Ref)		•				± 1 Hz
Frequency (Int Ref) Leaving Factory Long Term		•				 ± 50 Hz ± 1.0 ppm/yr
Frequency Stability[1] (using Ext Reference)	Nominal Frequency	•				± 2.5 x 10^{-11}
	Short Term	•				
	Medium Term – Mean Slope	•				
	Medium Term - Residual	•				
Power[2]		•				± 0.25 dB
Power Rise Time		•				± 0.5 ms
Pre-burst Level		•				± 1.0 dB
Pulse Repetition Period		•				± 10 ms
Bit Rate		•				± 0.1 bps
CW Preamble Time		•				± 0.8 ms
Total Transmission Time		•				± 0.8 ms
Rise Time		•				± 10 µs
Fall Time		•				± 10 µs
Phase Deviation: Positive		•				± 0.02 rad
Phase Deviation: Negative		•				± 0.02 rad
Modulation Phase Symmetry		•				± 0.005
Second Generation Beacon (SGB)						
Decodes all Cospas-Sarsat Protocols					•	-
23 HEX ID and Full HEX					•	-
Power[2]					•	± 0.25 dB
Power Rise/Fall Time					•	± 0.1 ms
Pre-Burst and Post-Burst Level					•	± 1.0 dB
Total Transmission Time					•	± 0.25 ms
Frequency[1] (Ext Ref)					•	± 25 Hz
Frequency (Int Ref) Leaving Factory Long Term					•	 ± 50 Hz ± 1.0 ppm/yr
Short Term Frequency Stability					•	Coming Soon
Chip Rate Average					•	± 0.05 cps
Chip Rate Variation					•	± 0.05 cps[2]
I, Q Relative Offset					•	± 0.5 %
I, Q Peak to Peak Amplitude					•	± 0.5 %
Out-of-Band Emissions					•	± 0.1 %
Error Vector Magnitude					•	± 1.0 %
121.5/243 MHz Measurements						
Frequency[1] (Ext Ref)		•				± 30 Hz
Frequency (Int Ref) Leaving Factory Long Term		•				 ± 60 Hz ± 1.0 ppm/yr
Peak Power		•				± 1.0 dB
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[1] (AIS1 & AIS2) (Ext Ref)			•	•		± 30 Hz
Frequency (AIS1 & AIS2) (Int Ref) Leaving Factory Long Term			•	•		 ± 60 Hz ± 1.0 ppm/yr
Power			•	•		± 1.0 dB
AIS Messages Decode			•	•		-
Tx Frequency[1]				•		± 1 Hz
Graphic Measurements						
-406 Spectrum Mask Graphic Data		•			•	-
-406 Output Power During Burst Graphic Data		•			•	-
-406 Phase Modulation Graphics Data		•				-



50 Ω RF Input		
Connector		BNC-f
VSWR		1.20:1
Dynamic Range		
Direct Mode	121.5 MHz	-10 dBm to +34 dBm
	243 MHz	-8 dBm to + 34 dBm
	406 MHz	+10 dBm to +40 dBm
	AIS	-28 dBm to + 40 dBm
Screen Box Mode	121.5 MHz	-16 dBm to +20 dBm (1% to 110%)
	243 MHz	-22 dBm to +20 dBm (1% to 110%)
	406 MHz	-12 dBm to +30 dBm (1% to 110%)
	AIS	+10 dBm to +30 dBm (1% to 110%)
Maximum Input Power (Continuous RF)		+34.8 dBm
Maximum Input Power (406, 121.5, 243)		+40 dBm, Max 1 s @ ≤ 20% Duty Cycle
Maximum Input Power (AIS)		+43 dBm, Max 27 mS @ ≤ 2% Duty Cycle
Antenna RF Input		
Connector		SMA-m (RP)
Range		
406 MHz		>10 m
121.5 MHz/243 MHz		>2 m
AIS		>10 m
Maximum Input Power 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: -AUX I/O -AUX ADC -RELAY1 -RELAY2 -PPS Out -GPS Tx -GPS Rx -Ground		 -8 I/O lines, 5V TTL Tolerant -8 analog inputs, 0V -12 V -Relay1 NC/NO 60V 2A -Relay2 NC/NO 60V 2A -GPS 1 PPS Output -GPS Tx -GPS Rx -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) Weight		210 (8.3) x 280 (11.1) x 64 (2.5) 2.73 kg (6.0 lbs)
Miscellaneous Measurements		**Range**
Vin @ DC PWR IN		1V to 30V
Vout @DC PWR OUT		1V to 30V
Iout @DC PWR OUT		5mA to 8A
Leakage Current @DC PWR OUT		200 nA to 40 µA
Vdropout (Vin to Vout)		100 mV at 2 A
Aux Analog Input (Aux ADCn)		0 – 12V
Temperature (Probe 1 and Probe 2)		-60°C to +75°C

[1] User must supply a stable 10MHz Reference
[2] 35-39 dBm





Revision 2.10

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