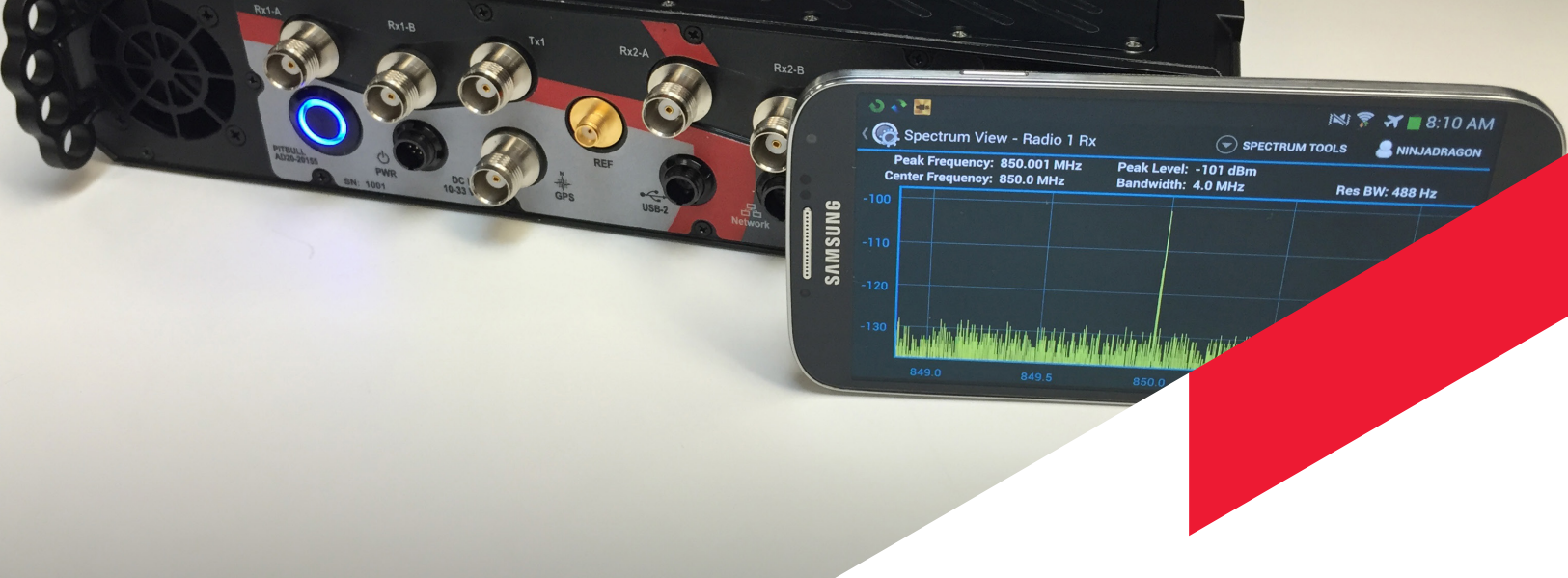


PITBULL™

MULTI-FUNCTION SENSOR



ENABLE COVERT MISSIONS FOR VIRTUALLY ANY COMMERCIAL MOBILE PROTOCOL

Pitbull is a compact, multi-functional, dual agile transceiver sensor capable of monitoring and locating multiple advanced signal emitters. The sensor can be used stand-alone or networked with other sensors to accomplish its programmed mission objective. Each controller attached to a sensor in a network can control and monitor both local and remote sensors in that network.

Pitbull includes many unique features that enable covert missions for virtually any commercial mobile protocol. Evaluation applications are available for conventional ISR, CDMA2000 emitter single or multi-sensor geolocation, LTE release 8/9 user equipment positive ID and LTE release 8/9 femtocell operation.

Pitbull is available at a technology readiness level 6 (TRL6) ready for evaluation in relevant environments including use in field exercises, environmental and end user operational testing.

KEY BENEFITS

- Small size and weight is easily transported in a backpack without detection
- Intuitive Android interface enables a large number of multi-protocol applications
- Infrastructure and mobile modes for software configurable active and survey applications
- Processing power to accommodate complex modern waveforms including LTE
- Operates from a wide range of DC power, from standard vehicle, aircraft or battery
- Integrated wireless comms for easy and concealable networking

KEY FEATURES

- 70 MHz to 6 GHz dual agile transceivers
- Thirty bands of advanced signal duplexers
- Concealed wideband diversity antennas
- Low SWaP - similar to a ream of paper
- Conduction cooled with optional convection
- Designed for IP67 water and dust protection
- Low power extended battery life operation

PITBULL MULTI-FUNCTION SENSOR

DUAL RECEIVER SPECIFICATION

2 independent or 2 coherent receivers
Frequency range: 70 MHz to 6 GHz
Instantaneous bandwidth (per receiver): up to 56 MHz
Noise figure, receive only: 6 dB
Noise figure, transmit/receive: 12 dB
Instantaneous dynamic range: 66 dB
Gain control dynamic range: 130 dB
Max RF input without damage: 30 dBm
Max RF input: 2 dBm
Loopback calibration and self test

DUAL TRANSMITTER SPECIFICATION

2 independent or 2 coherent receivers
FDD and TDD operation
Software selected internal FDD Tx filters: 60 bands
Power output per transmitter: 22 dBm
Software or hardware disable

ANTENNA CONFIGURATIONS (PER RADIO)

Dual internal receive diversity: 700 MHz to 6 GHz
Dual internal transmit diversity: 700 MHz to 6 GHz
Dual software selected external transmit
Single selectable external transmit
Internal wideband cellular antenna
Internal WiFi and Bluetooth antenna
Internal or external active GPS antenna: 1575 MHz RHCP

PHYSICAL SPECIFICATION

Size: 8.5" H x 11" W x 2.5" L
Weight: 8 lbs.
DC power interface: 9 to 36 Vdc
Internal battery: 48 watt-hrs
Power consumption, standby: 5 watts
Power consumption, dual receive: 20 watts
Power consumption, dual transceiver: 40 watts
Interface for external 2590/5590 battery: 110 watt-hrs
Conduction cooled, aux fans for convection cooling as required
Temperate range, ambient: -20° to 40°C
Intrusion (IP rating) design spec: IP67
MIL-STD design spec-vehicle and ground force operation

ACTIVE AND PASSIVE CONFIGURATION

Operable as infrastructure (eNodeB) or user equipment (UE)
GSM, CDMA2K, EVDO, WCDMA/UMTS, LTE R8/9, WLAN, et. al.

PROCESSING CAPABILITIES

FPGA-Xilinx Zynq 7045 w/dual core ARM A9 processors
GPP-Freescale i.MX6 quad A9 running at 1200 MHz (Linux)
DSP-TI Appleton quad 66x w/accelerators and ARM A8

COMMUNICATIONS

M2M 2G/3G/4G cellular, selectable bands
WiFi 802.11 a/b/c at 2.4 GHz and 5.4 GHz
2x USB 2.0, 1 host and 1 OTG
100BaseT Ethernet
152A radio interface

Operation as handset or infrastructure, software selectable
Optional CPRI for remote amplifiers

SENSOR REFERENCE

Timing accuracy, GPS disciplined: 15 nsec
Location accuracy: 2.5 meter
Orientation accuracy, 3 axis: ± 1 degree RMS

PLATFORM UTILITIES

Android user interface, handheld or tablet configuration
Transmit waveforms either radio
Receive and display via either radio
General DF utility
CDMA GPS referenced TOA utility
Wireless comms self-test

CDMA2000 APPLICATION (OPTIONAL)

DF using external four element array: ± 3 degrees RMS
TOA referenced to GPS: ± 15 nsec
Multipath time and angle discernment: up to 10 paths
Geolocation and ground based moving target tracking

LTE R8/9 APPLICATIONS (OPTIONAL)

LTE femtocell, 2 km range, 30 user capacity
UE identity authentication
LTE (FDD) bands 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 19, 20, 25

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