

SI-8649A PICOCEPTOR™

SI-8649A PICOCEPTOR™ MINIATURE HF/VHF/UHF SDR

The Picoceptor™ realizes the power and flexibility of a software-definable radio, while overcoming the size, weight and power (SWaP) challenges of today's battlefield. It can be scaled to meet the mission criteria of the autonomous warfighter or of sophisticated intelligence-gathering networks.

The modular Picoceptor can be worn by soldiers or easily integrated onto small platforms for land, sea or air operations. Its rugged packaging allows it to withstand the extremes of the harshest deserts or the highest altitudes, making it ideal for use in ground mobile, UAV or unmanned ground sensor applications.

A wide selection of Picoceptor types allows custom matching to mission requirements

ranging from low-power, single-channel tactical uses to high-performance networked battlefield use.

Its software-definable architecture means that it can be deployed for a signal intercept/analysis application, then re-deployed for threat warning, and again re-deployed to other mission-critical applications, such as precision geo-location.

Picoceptors can achieve phase coherency for multi-channel applications, such as direction finding and beam forming, by sharing a common reference via a simple daisy chain.

The network-centric Picoceptor supports a standard VITA-49 digital IF data protocol that allows digitized IF to be time-stamped and characterized with sensor-specific information for output and transmission across modern battlefield networks.



KEY FEATURES

- World-class SWaP and RF performance
- Mission configurable on the fly
- Multiple configurations address a wide range of requirements
- Network-centric digital IF data protocol

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PICOCEPTOR HIGHLIGHTS

- SDR Linux platform, built-in web-based GUI
- Field-upgradeable open architecture
- RS-232 or USB 2.0 remote interface
- FPGA access to 64 Mbyte SDRAM and 32 Mbyte flash memory
- Programmable general-purpose IO (GPIO) facilitates system integration

TUNING

Frequency Range	2 to 3000 MHz
Tuning Resolution	1 Hz
Tuning Speed	Less than 500 microseconds
Phase Coherency	Simple wire connection between like tuners for full phase coherence
Preselection	Tracking and switched sub-octave filters

OPERATING FEATURES

Digital Drop Receiver (DDR)	Standard Firmware Load 2 to 200 kHz Digital BW with 1, 2, 5 sequence AM/FM/CW/USB/LSB detection mode
IF Data Format	VITA-49 compliant, with precision time stamp
Data Interface	USB 2.0
DSP Processor	Xilinx Virtex IV FPGA based, supports embedded Linux OS and SDR applications
Remote Control	RS-232 and USB 2.0 OTG



SWAP

Size	Single-channel: 3.0 x 5.0 x 0.9 inches Dual-channel: 3.0 x 5.0 x 1.5 inches
Weight	Single-channel: <1 lbs. Dual-channel: <1.6 lbs.
Power Consumption (typical)	SI-8649A/S3B6X12: 4.3 watts SI-8649A/S3B6X60: 5.2 watts SI-8649A/S3B25X12: 5.4 watts SI-8649A/S3B25X60: 6.3 watts SI-8649A/D3B6X60: 7.4 watts SI-8649A/D3B25X60: 9.8 watts
Power Supply	6 - 16 Vdc

ENVIRONMENT

Altitude	0 to 15,000 feet
Humidity	10 to 90% non-condensing
Climate	Fungus resistant
Vibration, operating	MIL-STD-810G, Method 514.6 E1, minimum integrity test, 1 hour per axis
Operating Range (case temperature)	SI-8649/S3B6X12: -40 °C to +71 °C SI-8649/D3B6X60: -40 °C to +71 °C
Non-operating Range	-40 °C to +85 °C

ORDERING INFORMATION

Available options:	S3B6X12, S3B6X60, D3B6X12, D3B6X60, S3B25X12, S3B25X60, D3B25X12, D3B25X60
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KEY TO OPTION DESIGNATIONS

SI-8649A/CFBAAAX##				
SI-8649A/ C	F	BAA	X##	
Product Family	Channel Count	Upper Frequency Limit (GHz)	Bandwidth Option in MHz	Xilinx FPGA Options
	S = Single D = Dual		6 or 25	e.g., X60 = XC4VFX60

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