

PICOCEPTOR™ NEW ENERGY DETECTOR & 12 DDC SOFTWARE LOAD



MEETING TODAY'S CHALLENGES TO PROVIDE A SECURE FUTURE

The New Energy Detector and 12 DDC software load allows the Picoceptor to function as a signal search engine that detects the presence of new energy within a selectable spectrum band up to 34 MHz wide. New energy can then be monitored by 12 digital down-converters (DDCs) that output interleaved in-phase and quadrature-phase (I&Q) data in a single time-stamped VITA-49 packet. The Picoceptor develops a baseline of a signal environment by taking successive learning passes across a signal band of interest to determine peak signal levels. An ample range of triggering mechanisms is available to define how new energy is detected including: new signal qualification, signal decay time, absolute squelch level, and level relative either to the noise

floor or to an established signal strength threshold.

Upon discovery of new energy, the Picoceptor can report back new energy information such as its frequency, signal strength relative to threshold, and energy width. This allows signals of interest to be assigned to the 12 DDC channels. DDCs can be tuned individually anywhere within a stare bandwidth, which is 25 MHz wide at the signal's -3 dB points and 34 MHz wide at its -6 dB points. DDC channels are tunable with a 1 Hz resolution and share a common selectable bandwidth of 25, 50, or 100 kHz. Gain can be individually controlled for each channel manually or automatically to optimize channel sensitivity.



- Detects and reports new RF energy
- Monitors new energy with 12 independently tunable DDCs across selectable spectrum
- Outputs 16-bit interleaved and time-stamped I&Q data in VITA-49 packet
- 32K FFT employed for new energy detection
- 20 to 3000 MHz tuning
- Stare bandwidth:
 - 25 MHz (-3 dB)
 - 34 MHz (-6 dB)
- Digital tuning resolution of 1 Hz
- Selectable digital bandwidths of 25, 50, and 100 kHz
- Compatible with SI-8649A/S3B25X60
- Graphical user interface

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SPECIFICATIONS

SWAP

Size	3.0 x 5.0 x 0.9 inches
Weight	< 1 lb.
Power	6.3 watts
Power Supply	6 - 16 Vdc

ORDERING INFORMATION

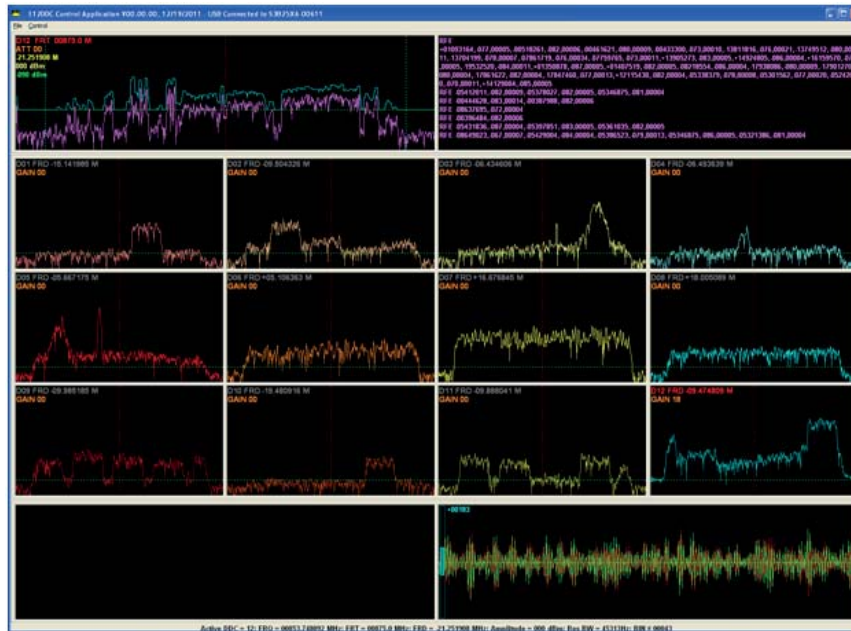
8649A/SW/E12DDC	Software load
SI-8649A/S3B25X60	Picoceptor

SOFTWARE FEATURES

- New energy detection
- Within selectable spectrum band up to 34 MHz wide
- Resolution bandwidth: 2.8 kHz
- Revist rate: > 20 times per second
- Learning pass range: 0 to 99
- DDC tuning range ± 17 MHz offset from tuned RF with 1 Hz resolution
- Stare bandwidth: 25 MHz (-3 dB); 34 MHz (-6 dB)
- DDC filters: 25, 50 or 100 kHz
- DDC sampling rates: 32 ksps (25 kHz BW), 64 ksps (50 kHz BW), 128 ksps (100 kHz BW)

HARDWARE FEATURES

- Architecture: SI-8649A/S3B25X60 Single-channel Picoceptor with 25 MHz bandwidth and Xilinx XC4VFX60 FPGA
- Data interface: USB 2.0
- Control interface: RS-232 (Linux console port) and USB 2.0 OTG
- Tuning range: 20 to 3000 MHz



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