SIGpac Man Portable Signals Intelligence (SIGINT) System

Linkabit's SIGpac is the next-generation tactical Signals Intelligence (SIGINT) System for global, full-spectrum operations. Its low-power, lightweight, ruggedized and modular design incorporates sophisticated state-of-the-art RF, signal processing and Direction Finding (DF) techniques. Using a software-driven design approach, SIGpac gives today's intelligence professional a versatile and modular capability that is easily scaled to support a wide variety of missions to include man-packable, mobile, riverine, and unmanned applications.

The SIGpac simultaneously conducts DF, monitor, search and scan operations. There are three search modes for both General and Directed Search:

Automatic Search – Performs the search on a continuous basis without user notification and signal collection, unless a signal is observed on the High Value List.

Semi-Automatic Search – Performs the search and immediately stops and waits for user interaction at each signal detect that is not on the Pass List.

New Signal Occurrence Search – Performs the search and immediately stops and waits for user interaction only when a new signal detect is observed that does not reside on the Pass List, Signal List and Channel List.

The general search capability allows the flexibility to monitor up to 10 (TBR) frequency bands by indicating frequency start and stop, F1 to F2, for each specified band. These frequency bands can be contiguous, non-contiguous or overlapping.

When critical signals are detected, SIGpac maintains an active signals list measuring center frequency, bandwidth, time first seen, percent time active, DF bearing, modulation type, and signal strength.

SIGpac is optimized for the remote tactical mission. The SIGINT Capability can be transported and operated by a single person and set-up in less than 5 minutes. The total weight is less than 27 pounds, which includes cabling, DF antenna, and internally-mounted battery. All accessories fit in a standard military issued ALICE/Rucksack for ease of transport and airborne early entry operations.

Key system components include the:

- SIGpac Receiver/Processor (100 KHz – 3000 MHz)
- MA-445C HF/VHF/UHF DF Antenna (2-2000 MHz)
- RF/Control Cable

The heart of SIGpac is the Receiver/Processor. The processor uses a patent-pending interferometer DF technique typically providing 3 degrees RMS of DF accuracy, as well as excellent sensitivity to distinguish a variety of signals. SIGpac provides superior performance with most modulation types including CW, USB, LSB, AM, ISB and FM.

The lightweight, low profile, combat-proven MA-445C HF/VHF/UHF antenna provides accurate DF coverage from 2 to 2000 MHz. Built in flexibility allows for the use of antennas optimized for specific RF environments, as well as quick integration to ground mobile, maritime, or fixed-site missions.

The use of a low-power design and effective power management allows the system to be operated using the internally-mounted standard military batteries. Multiple power sources can be utilized with use of an external adapter including vehicle, shore and generator power at 110 or 220VAC at 50 or 60 Hz.

SIGpac is Optimized for the Tactical SIGINT Mission by Providing:

- Signal Environment Characterization
- Signal Exploitation
- Signal Location
- Threat Warning

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Product Specs

Frequency Coverage	0.5 – 3000 MHz DF and Intercept (Receiver) 2 – 2000 MHz (with MA-445C)
DF Accuracy	3° RMS Typical
DF Resolution	1°
DF Threshold	10 µV/m (nominally)
Demodulators	FM, AM , SSB, CW, 2ISB
Tuner Frequency Resolution	10 Hz
Tuner Tuning Speed	≤ 5 ms
Tuner Dynamic Range	75 dB or greater
Processor	Integrate multiple LOB estimates, up to at least 30, for enhanced accuracy Provide operator-selectable DF integration time Provide internal storage for at least 100 LOBs (including timestamps) Provide built-in-test (BIT) to the card level
Antenna Weight	≤ 15 pounds
Antenna Height	≤ 6.0 inches (without whip)
Antenna Area	≤ 2.0 square feet
Remote Interface	Ethernet 10/100 or USB
Position Accuracy	≤ 9 meter SEP
Position Resolution	≤ 1 meter
Electronic Compass*	Bearing accuracy: ≤ 1° Bearing resolution: ≤ 0.1°
Physical Characteristics System	
Size:	3.50˝ H x 9.23˝ W x 11.05˝ D
Weight:	≤ 27 pounds (excluding antenna mount, and power source)
Power Input	20 to 30 VDC (stand-alone), 9V to 36V (with external adapter)
Power:	≤ 15 Watts when fully operational
Battery Type:	BB390, BB390B, BB590, BB590MB BB2590, BA5390, BA5590
Environment	
Operating Temperature:	-20° to +60°C
Storage Temperature:	-40° to +55°C
Humidity:	5% to 95% Condensing
Altitude:	15,000 feet
Submersion:	1 meter (3 feet) for 1 minute
Rain, Salt Fog, Vibration:	Tested to MIL-STD-810F modified

Resistant to externally generated radio frequency interference (RFI)
In accordance with MIL-STD-461E, tests CE102, CE106, CS101, CS103, CS114, CS115, CS116, RE102 and RS1

Note: All specifications subject to change without notice

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Linkabit Division
3033 Science Park Road, San Diego, CA 92121
(858) 552-9555 Fax (858) 552-9668 www.L-3Com.com
Product Service Help Desk: 1-800-331-9401
e-mail: LinkabitProducts@L-3com.com