CODESS

Defence Communications Systems

COMMUNICATIONS DENIAL SUB-SYSTEM

The Communications Denial Sub-System (CoDeSS) delivers unparalleled powerful sophisticated jamming capability to the user. Designed for stand-alone operation or integration into a wider battalion-level EW system, CoDeSS is a military proven state-of-the-art electronic attack (EA) system addressing targets of interest within the HF to UHF Communication Bands.

Against targets of interest it can deliver highly effective jamming using spot jamming, barrage jamming and sweep jamming, together with many other tactics tailored to threat types. This highly effective capability is achieved by use of advanced digital technologies supported by sophisticated software/firmware applications.

CoDeSS is highly controllable to ensure that friendly forces are not adversely affected by a jamming mission. The EA vehicle is part of the overall electronic warfare capability, which provides operational tasking of the jammer. CoDeSS equipment can be installed into a standard vehicle shelter.

KEY FEATURES

- Wide band jamming 20MHz to 3GHZ
- Simultaneous jamming on a minimum of 16 targets
- Extensive menu of electronic attack techniques available to operator
- Receive-only or look-through modes of operation
- Monitoring and data collection mode for offline analysis
- Flexible/scalable architecture to suit customer power requirements.

The system comprises a shelter-mounted configuration of MF, HF, VHF and UHF receivers, waveform generators/exciters, power amplifiers, transmit/receive antennas and up to three operator workstations, who undertake overall control, management and monitoring.

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SYSTEM ARCHITECTURE

Integrated into 19"equipment racks for fixed shelter or wheeled, shock-protected mobile applications, CoDeSS can simultaneously jam up to 32 conventional or frequency agile threats across the 20MHz to 3GHz communications band using TDM.

Designed to minimise single points of failure, each subband has its own power amplifier and receiver, ensuring that individual module failure does not affect CoDeSS ability to attack other frequency bands.

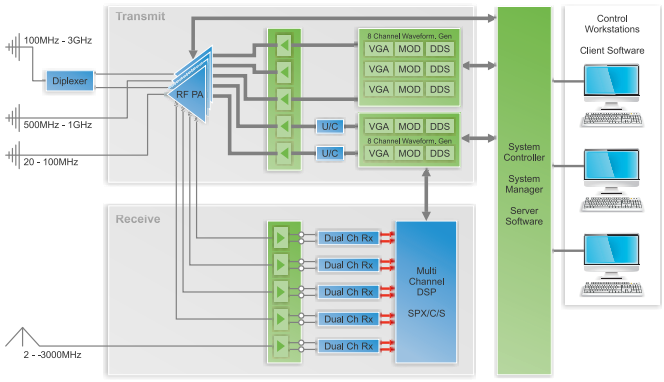
CONTROL & MONITORING CAPABILITIES

Control and monitoring capabilities offered include:

- A Target look-up table scheme based on data received from an Electronic Warfare Operation Centre (EWOC) and the ES equipment within the overall system
- Built-In Test (BIT) to verify correct functioning of the system
- Monitoring and data collection during peacetime to enable off-line analysis
- The ability to deny or disrupt selected areas of the electromagnetic spectrum to potential threats for a user programmable period of time
- A user programmable list of frequency bands that will not be jammed can be entered, comprising up to 20 ranges per band, i.e. a total of 80 bands.

SYSTEM DESIGN PHILOSOPHY

CoDeSS has a modular design, easing maintenance and future upgrades, for example more powerful transmitters or frequency extensions. Open architectures, commercial products and protocols are used where possible. Thus, the system can evolve with these technologies assisting any technology refresh programme.



SYSTEM CONFIGURATION AND MANAGEMENT

The system configuration and management software enables the system to be operated by up to 3 operators, each with his own workstation. Screens are provided to provide for high level subsystem management, review and acceptance of tasks. Task management includes the allocation and configuration of receive and transmit resources, monitoring of target activity, control of the transmissions and the preparation of reports.

The flexible software architecture enables the system operation and operator interface to be tailored to the needs of the operator to provide additional alert facilities, analysis tools, etc.

TECHNICAL SPECIFICATIONS

Frequency coverage	Band 1: 20MHz to 100MHz; 500W
	Band 2: 100MHz to 500MHz; 250W
	Band 3: 500MHz to 1000MHz; 200W
	Band 4: 1000MHz to 3000MHz; 50W
Modes of operation	Receive only and look-through
Frequency agile targets	<500Hz hop rate

RECEIVE CAPABILITY	
Number of receivers	Five
Instantaneous receive bandwidth	20MHz
Receiver bandwidth	Up to 16 off 20MHz bands in each receiver
Receiver tuning speed	800µsec.
Receiver processing	3200 bins at 12.5kHz spacing One channel of log-magnitude signal detection Two channels of IQ and audio detection
Detection threshold	Adjustable between -100dBm and 0dBm @ 12.5kHz BW

TRANSMIT CAPABILITY	
Number of jamming channels	16 total, 4 per band, with a capability of 32 using TDM
Instantaneous transmission bandwidth	30MHz in the upper two bands
	DDS generation allows flexibility in designing waveforms
Harmonics	-10dBc
Spurious	-60dBc
Modulation types that can be jammed	CW, AM, FM USB, LSB, QAM, ASK, FSK PSK, OQPSK, MSK, GMSK, FM-FSK
Modulation sources	Internal or predefined waveform data
T/R Switching	Integral solid-state T/R switches
RF Protection	Internally protected against open and short circuit

DESIGN	
Software	The System Manager software is Windows based.
Waveform definition	Waveforms are defined using an "off-line" tool
Input voltage	230V AC
Internal frequency accuracy	+/-0.1 PPM, 0°C to +50°C

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For more information please email infomarketing@leonardocompany.com
Leonardo MW Ltd
Lambda House - Christopher Martin Road - Basildon - Essex - SS14 3EL - United Kingdom - Tel: +44 (0) 1268 823400