

JAM-DDS

COMMUNICATION JAMMING SYSTEM

C4i
communication



JAM-DDS 800 Watts
VHF/UHF 30-500MHz Programmable

INTRODUCTION

C4i Communication is introducing the new generation of high power, fully digital (DDS) jammer (**JAM-DDS**) to protect military and VIP convoys from the threat of Remote Control Improvised Explosive Devices (RCIEDs) and state of the art communications jamming for modern VHF/UHF Communication frequency band continuously and simultaneously. The system can be designed according to customer-specific applications.

JAM-DDS, High Power DDS Communication Jamming System, implementing the most effective and reliable RF jamming technology and equipped with a fully-integrated broadband jamming system.

SYSTEM OVERVIEW

JAM-DDS build with 4 independent frequency bands (30-90MHz, 90-180MHz, 180-350MHz, 350-500MHz) with its own power amplifier module and antenna for faster wideband scanning, very good receiver sensitivity for each band, higher gain than normal antenna for precise jamming and multi-waveform countermeasures.

JAM-DDS has Maximum RF output power for each module is 200W and total RF output power is 800W. It has fast jamming rate at 40ns/Channel and can cover, continuously and simultaneously, all the RF communication frequencies from 30MHz to 500MHz without losing RF power. Adopting the latest jamming technologies, **JAM-DDS** features ultra-high RF transmission power up to 800 watts, making it possible to jam more effective with large coverage area.

JAM-DDS system can be build with ruggedized rack or in rugged briefcase with individual frequency band and module as portable jammer system.



Figure 1 JAM-DDS system with Portable Configuration

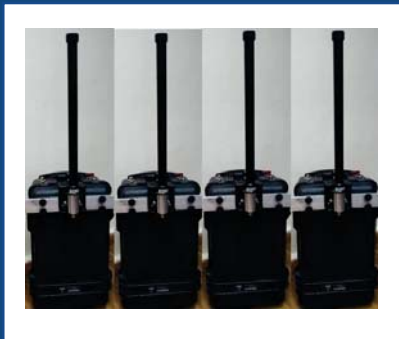


Figure 2 JAM-DDS in Rugged briefcase with independent operation



Figure 3 |System installation in the rugged briefcase with independent power supply, battery, receiver, PA module and cooling system.

JAMMER CONTROL INTERFACE

JAM-DDS has two type of control interface, GUI management system and Windows Base application workstation.

GUI management system which including activation, control and operation is carried out via a wired remote control unit, which could be installed in any desired place. The touch screen base embedded system can be operating super easy and fast respond to use in the field. The system can be easily fit in the rugged briefcase for transporation.

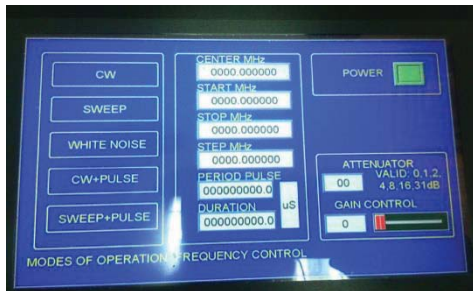


Figure 4 | GUI management system



Figure 5 | GUI management system in the case

Windows Base application workstation is used for VHF/UHF spectrum surveillance and counter attack. The interface of the system can be customized according to customer request.



Figure 6 | Windows Base application; Intercepted signal within Bandwidth 350-500MHz



Figure 7 | Ruggedized Laptop configuration for rack case



Figure 8 | Dell Ruggedized Laptop

FEATURES

JAM-DDS also features **Reactive Jamming System** (DDS & FPGA) which includes:

- The reactive smart jamming solution scans and monitors the Area of interest to locate signals coming from variety of frequency bands from 30 MHz up to 500 MHz (Walkie-Talkie, etc).
- System then enables translation of signals into visualized data, which is imported into secured database. This enables the operator to recognize the signal immediately when it encounters in future.
- Based on all data gathered in the Area of Interest, the operator is able to efficiently enact protection counter measurement.
- The system could be programmed to recognize unwanted signals and to jam them automatically

JAM-DDS Advantages:

- Ultra-wideband frequency of 30-500MHz.
- High sensitive receiver.
- User-friendly operating software via laptop computer for Command & Control.
- Total output power can be up to 800watt.
- Integrated smart active cooling system to make sure the device working continuously.
- With 4 sets of antennas to transmit jamming signals with best efficiency.

MAIN SYSTEM

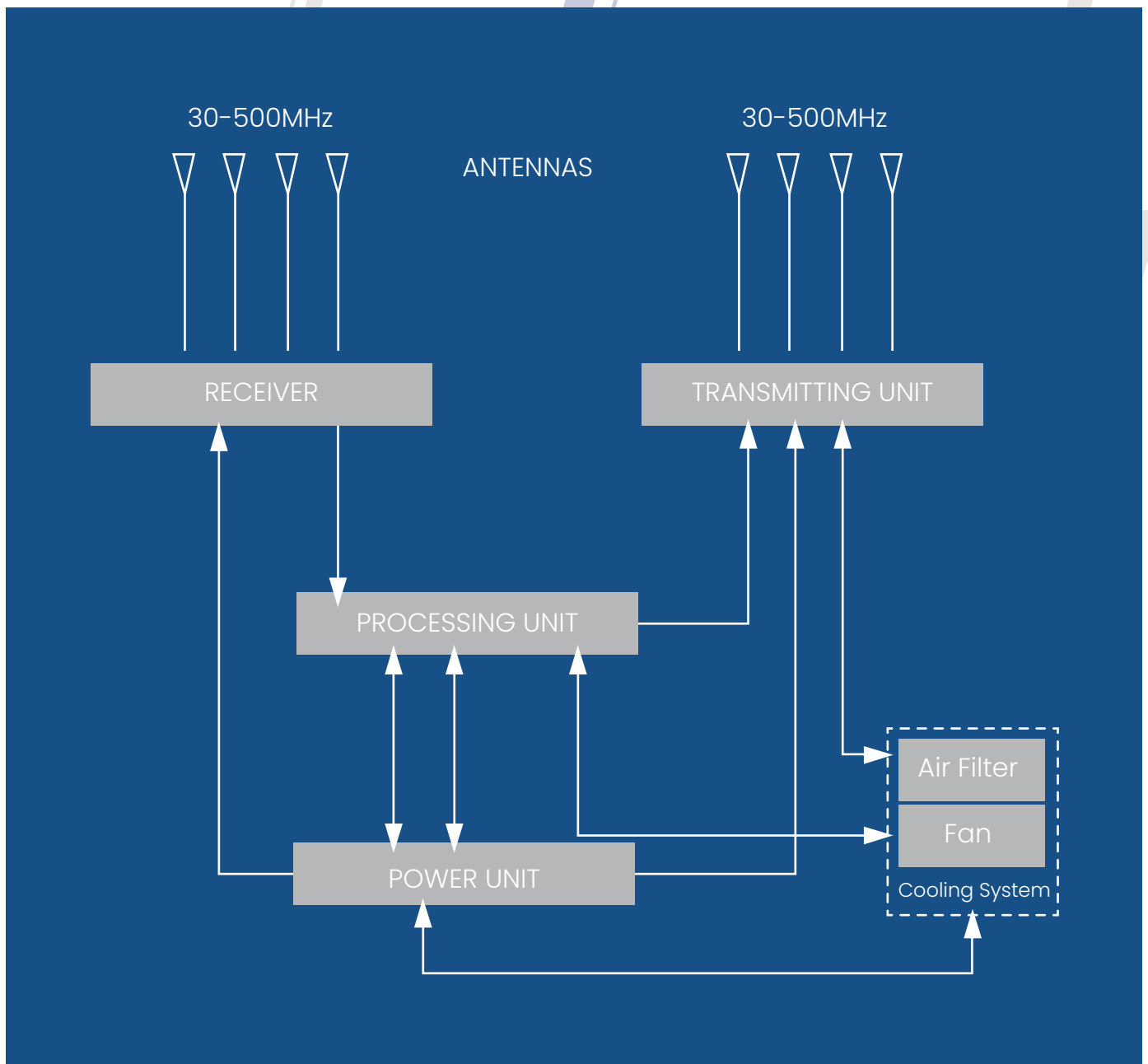
JAM-DDS consists of following sub-systems:

- Receiving antennas for detectors,
- Very sensitive receiver enable to recognize low level signal
- Processing unit + signal data storage
- Computer laptop for command and control
- Power unit (AC + DC + Generator + Backup batteries)
- Transmitting unit + Power amplifiers
- High gain transmitting antennas

SYSTEM OPERATION

JAM-DDS scans and monitors the Area of interest via high gain and highly sensitive receiver, to locate signals upcoming from variety of frequency bands from 30 MHz up to 500. Any signal higher than noise level is processed and analyzed (frequency modulation, type of signal, etc.) while is stored in memory for future comparison, jamming signal is transmitted automatically or manually via high power amplifier and high gain antennas to the exact frequency for neutralizing any reliable threat.

SYSTEM DIAGRAM



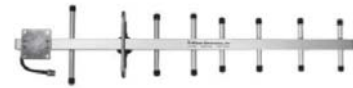
Technical Specification

RF Frequency Band(MHz)	Application	RF Output Power (Watt)
30-90	VHF30	200
90-180	VHF100	200
180-350	UHF300	200
350-500	UHF400	200
TOTAL RF POWER		800 Watt
Frequency Range	30 - 500MHz	
Total RF Power	800 Watt	
Jammer Module Number	4	
Channel Number	Up to 16Bands	
Scanning Rate	40ns/Channel	
Detecting Hopping Signal	Yes, Hopping signals can be detected	
Hops/s	100KHz/s	
Type of Jamming	Manual Jamming Memory jamming and Active Jamming	
Control of output RF power	Manual and Automatic output power control	
Cooling System	Systematic Smart Cooling System	
System Protection	VSWR, Over - voltage, Over - current,	
Jamming Source	DDS Technology (Noise, random code, etc)	
Work Mode	Single Carrier/Multi Carriers/Multi frequency circulation/Fast Frequency Hopping/Barrage Jamming optional	
Frequency Adjustment Step	10KHz	
Modulation Mode	AM/FM/CW/FSK/LSB/USB etc	
Harmonic spurious	40dbc	

Frequency Stability	±1ppm
Remote Control	Full System Operation Control
Antenna Type	Omni directional Antennas, Directional Antenna
Number of Antennas	4
Total Power Consumption	Max: 3000VA, (+27VDC)
Operating Temperature Range	-20°C~+60°C
Generator Rating	2kW
Automatic Fault Detection	Power, Temp, Antenna, etc
Operating Humidity	Up to 80%

SAMPLE ANTENNA FOR OMNI AND DIRECTIONAL ANTENNA

Frequency range	30-90MHz 90-180MHz 180-350MHz 350-500MHz
Input Impedance	50Ω
Main Frequency VSWR	<2.5
Gain	-3 ~ 2dBi
Maximum Power	200Watt
Polarization	Vertical Polarization
Temperature	-40 °C to +75 °C
Radom Material	Fiberglass
Wind Velocity	160Km/h
Length	About 180cm
Weight	About 2.8Kg



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