

TSR 2300

Fully Digitized Wide Band COMINT Receiver



- Advanced 3rd generation receiver to serve as foundation for all existing COMINT/DF systems
- Built-in fully digital processing
- Multi protocol and fast on-the-fly signal processing
- Acquires, separates, and tracks adaptive, on-the-fly modulation signal characteristics
- Rapidly updates system settings to match protocol updates
- Enables system frequency reuse by handling large numbers of simultaneous signals in dense multi-user signal environments
- Receives 16 channels simultaneously

Overview

New dimensions to the spectrum of threats presented by hostile use of modern communications signals aiming to disrupt COMINT/COMJAM tasks, have posed a serious challenge to the effectiveness of continuous friendly communications. Until now!

Enter Elisra's TSR 2300. A remarkable, new, 3rd generation, fully digitized, wide band receiver forming a common foundation for all existing COMINT/DF systems, as it handles all new signals including WiFi, and Wimax.

The TSR 2300 receiver, its technology, and its flexible configuration for ground and airborne COMINT & COMJAM missions, represent a definitive, proven solution for today's threat environment. Processing multiple inband, diverse signals concurrently and utilizing high properties of separation, dynamic range, and advanced digital processing, TSR 2300 features 16 listening channels that function simultaneously, thereby carrying out the tasks of 16 separate receivers with additional ones easily added.

Featuring uniquely large processing power, with 2 VIRTEX 5 and Power PC processors, this receiver enables its users to carry out their own customized arrangements requiring no additional computing sources. All-in-one, modular, and connected via standard PCI ex BUS, TSR 2300 is a vehicle for mission specific configuration, allowing the desired results to be simply achieved through a quick system transformation. Setting a standard of its own as it operates within a wide 20-6,000MHz frequency, TSR 2300 boasts a very high spectrum scan with instantaneous bandwidth of 40 MHz. The receiver employs special daisy chain capabilities in order to achieve a high scanning rate, thus enabling a rapidly available mission theatre picture.

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Operational Applications

Both the engineering and technical properties of the TSR 2300 make this receiver the cornerstone of any COMINT/COMJAM system. Flexible and robust, the receiver is configurable for both ground and airborne applications.

COMINT Applications

- Multiple receiver configuration avoiding signal congestion
- Concurrent, multiple in-band and diverse signals processing
- Fast response components
- Rotating LO's master between receivers
- Intra system receiver connectivity
- Enables system to perform phase and amplitude measurements for advanced communication signals processing and geo location
- Simultaneous listening capability to all 16 available channels

Comjam Applications

- COMINT attributes benefit COMJAM capabilities because of shared COMINT/COMJAM requirements
- Receiver supported jamming missions can accommodate advanced communication threats
- Fast stabilization of hardware and software components for effective threat signals response

Technical Parameters and Specifications

RF input: Frequency Range:	20-6000 MHz
Noise Figure 20-3000 MHz	11 dB
IIP2	+45 dBm
IIP3	+5 dBm In Band, +12 dBm Out of Band
Image Rejection:	typ. 90dB
IF Rejection	>90 dB
Synthesizer tuning speed	500 μ sec
Detection Modes	AM, FM
Sensitivity	10 KHz 20 KHz 50 KHz 100 KHz 300 KHz
AM, m=50% (S+N)/N=10 dB	-105 -102 -98 -95 -90
FM, $\Delta f=30\%$ BW IF (S+N)/n=17 dB	
IF Bandwidths (kHz)	34 IF Bandwidths optional
Wide Band IF output	CF = 140 MHz, BW = 50 MHz
Reconstructed/Analog	BW up to 8MHz @ CF = 21.4MHz (reconstructed)
NBIF output (Analog for IFBW>1MHz)	BW in 10-36MHz @ CF = 70MHz (reconstructed) BW 36MHz & up @ CF = 140MHz (analog) 0 dBm on 50 Ω
Analog Audio Output	Audio Line Output
Digital Audio	Up to 16 NB channels
Interfaces:	
Fast Ethernet	10/100/1000 base Tx
PCIe Interface	4 PCIe (gen 1.0) lanes
USB interface	Maintenance Serial interface based on USB2.0 to internal UART (effective rate up to 3Mbps)
Operating Temperature	-10°C – +60°C

* All specifications are typical and are subject to change without prior notice