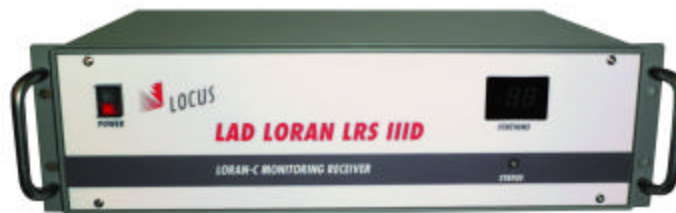


LAD LORAN LRS IIID

The Ultimate Computerized Automatic Receiver



- **Autonomous operation**
- **Simultaneous 9-chain (40 station) monitoring**
- **Quantitative signal parameters**
- **Complete PC interface/control**
- **12 automatic interference cancellers**
- **Software selectable clock and monitoring outputs**
- **Accepts 1, 5, or 10 MHz Cesium clock input**
- **46 cm (18") antenna**
- **High-performance OCXO**

Sophisticated Tracking

Locus' LRS IIID is the most sophisticated Loran monitoring receiver in the world, and was specially designed to meet USCG specifications. It can track over 40 stations simultaneously, and replaces as many as five other monitoring receivers. The U.S. and Canadian Coast Guards use LRS IIIDs to monitor and control all North American Loran transmissions. LRS IIIDs have also been recently installed by the Japanese Coast Guard.

Superior Monitoring

The LRS IIID is a computerized automatic receiver incorporating digital signal processing (DSP) technology. This greatly enhances its monitoring performance, including local phase code interval (LPCI) resolution. The LRS IIID receives and processes Loran-C data into both Time of Arrival and Time Differences. The LRS IIID has complete PC interface and control to support remote data acquisition, operation and diagnostics. Manual controls are eliminated, increasing reliability.

Patented Antenna

The low profile (~18") of Locus' patented LRS IIID active antenna and preamp with integral band-pass filter does not limit its sensitivity or performance. In fact, its RF immunity is 500% better than that of non-tuned preamps. The LRS IIID antenna includes an automatic 36dB attenuation that allows it to operate in close proximity to Loran-C transmitters.

Modern Receiver Technology

LAD receiver technology offers a 3 dB S/N advantage over hard limited receivers. Extensive quantitative signal parameters are available to the user. The patented ensemble-averaging architecture provides rapid cycle detection and is virtually immune to cycle slip. Acquisition time is 10 times faster than conventional receivers.

True Multichain Acquisition & Tracking

The LRS IIID offers true multichain acquisition and tracking (9 chains/40 stations), and crossrate lockout with ensemble averaging improves signal-to-noise 15 dB. ECD and position stability are also significantly improved versus legacy receivers.

Proprietary Notch Filter Technology

Locus' proprietary notch filter technology eliminates notch filter effects on ECD, SNR and sky waves. They are full band automatic notch filters with software override.

Inputs and Outputs

The LRS IIID includes a high-performance OCXO and accepts external clock inputs. It provides analog outputs of the Loran-C signal before (Raw RF) and after (Scope) notch filters and gain, as well as oscilloscope trigger and tracking outputs.

The LRS IIID System

The LRS IIID system includes the LRS IIID receiver, the LRS IIID antenna, one end-user software license, external lightning protection, antenna cable and user documentation.

Applications

- Loran-C monitoring and control systems
- Precise time and frequency reference (Cs synchronized)
- Aviation, marine and terrestrial navigation

LAD LORAN LRS IIID Product Specifications

Receiver	Signal Level	20-156 dBuV/m
	Notch Filter	12 automatic, processor controlled, full band
	Stations	Tracks up to 9 chains simultaneously Tracks up to 40 stations simultaneously (Dual rated station = 2 stations)
Inputs/Outputs	Scope Outputs	1 receiver conditioned Loran analog signal Scope Trigger, Raw RF Scope Track Point and RF Gate
	Communications	(2) RS-232 ports, 1200 bps to 115 Kbps Software selectable to PC compatible values
	Special Inputs	1,5 or 10 MHz clock input Local PCI resolved to within 6 ns
	Time/Frequency Outputs	0.2 Hz to 10 MHz TTL level square wave 1 PPS, TTL level into 50 ohms
Input Power	AC Voltage	100-260 VAC @ 47 to 63 Hz
	AC Current	0.3A maximum @ 100 VAC input
	DC Voltage	18-30 VDC
	DC Current	1.5A @ 18 VDC maximum
Environmental	Operating Temperature	0°C to +55°C
	Storage Temperature	-40°C to +85°C
	Humidity	5% to 95%, non-condensing
Physical	Dimensions	490 x 140 x 330 mm (19.3" W x 5.5" H x 13" D)
	Weight	8 kg (18lb.)
Timing Stability	Long Term	Comparable to Cesium standard (10^{-12})
Antenna	E-Field	46 cm (18") height External amplifier powered through cable Built-in attenuation for monitoring applications -40°C to +70°C operating temperature
	