RECEIVING SET, LORAN AN/UPN-23

FUNCTIONAL DESCRIPTION

The Receiving Set, Loran AN/UPN-23 is a navigational device designed to receive U. S. Government transmitted radio signals for Loran A navigation systems. This equipment is designed so that precise digitally determined time differences read on the AN/UPN-23 are directly related to the Loran lines on the government hydrographic charts without calculation or translation.

The Receiving Set, Loran AN/UPN-23 is intended for installation on U. S. Coast Guard vessels.

RELATION TO OTHER EQUIPMENT

Not applicable.

EQUIPMENT REQUIRED BUT NOT SUPPLIED

The following equipment is required but not supplied: receiving antenna; coaxial cable to connect antenna to antenna coupler; coaxial cable to connect antenna coupler to the Receiver, Loran; power input cable to power supply.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

Type of Reception:
Loran A transmissions.

Frequency Coverage:
Channel 1: 1950 KC
Channel 2: 1850 KC
Channel 3: 1900 KC

Number of Channels:
3 preset

Frequency Control:
Crystal

Frequency Stability:
Receiver Oscillator: 300 CPS
Receiver Overall: 3 KC

Sensitivity:
10.0 microvolts peak pulse amplitude at antenna terminals will produce a 1" CRT deflection at better than 3 to 1 signal to noise ratio.

Intermediate Frequency:
1100 KC

Spurious Rejection:
Intermediate Frequency 65 db
Image frequency 80 db

IF Bandwidth:
40-50 KC, 6 db down
95 KC Max., 20 db down
125 KC Max., 40 db down
165 KC Max., 60 db down
210 KC Max., 80 db down

Differential Gain:
Greater than 60 db range

Drift:
3 KC Max. from 0° to 50° C and ±10% variations in power supply voltage.

Interference Reducer Switch:
Reduces effects of strong interfering signals and noise.

Attenuator Switch:
Selective attenuation of 30 db or 60 db

Antenna Input to Coupler:
Resistive: 2 to 25 ohms
Reactive: 75 to 1000 ohms capacitive
Electrical and Mechanical Characteristics of Recommended Antenna:

The antenna coupler will accommodate antennae within the range 25-375 to 2-j1000 ohms; a 12 foot whip, HF radio or equivalent is required.

Selectable Automatic Frequency Control

The selectable automatic frequency control permits the use of either master or slave signals for AFC, whichever is strongest. It automatically locks either the master or the slave signal in the proper position on the screen.

Timing Oscillator
100 KC, Crystal control and Automatic Frequency Control

Delay and Counter Circuit
Basic Pulse Rates
"S" 20 Cps
"L" 25 Cps
"H" 33 1/3 Cps

Specific Pulse Repetition Rates:
0 through 7 inclusive of each basic rate

Adjustable Delay Range
"S" rate 0 to 22,000 microseconds
"L" rate 0 to 17,000 microseconds
"H" rate 0 to 12,000 microseconds

Accuracy: 1.0 microseconds

Power Source:
115 volts ±10%, 50 to 400 Cps, single phase
Current (at 115 volts): 1.0 amperes max. starting
.25 amperes operating. Power: 28 watts

Installation: The Antenna Coupler should be mounted as near as possible to the antenna base and connected to the antenna lead-in wire. The Power Supply may be mounted at any convenient location within 15 ft. from the Receiver.

MANUFACTURER'S DATA

Electronic Concepts, Inc.
P. O. Box 813
Charlottesville, Virginia
Contract Tcg-13.018-1A (30 March 1966)
Purchase Description EEE-21-66

TUBE AND CRYSTAL COMPLEMENT

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REFERENCE DATA AND LITERATURE

Technical manual for Receiving Set, Loran AN/UPN-23

SHIPPING DATA

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DESCRIPTION OF COAST GUARD ELECTRONIC EQUIPMENT

UNCLASSIFIED