MODEL 9510
GUNN OSCILLATOR

DESCRIPTION

The Gunn Oscillator is designed to be used with the Gunn Oscillator Power Supply, Model 9501. This allows direct generation of a continuous or 1 kHz amplitude-modulated microwave signal. The gunn oscillator operates at a fixed frequency of 10.5 GHz. This frequency is located in the X band which extends from 8.2 to 12.4 GHz. The use of a decoupled cavity ensures good frequency stability even with a highly mismatched load.

SPECIFICATIONS

Power Requirement ..... 7 to 10 V dc – 100 mA

Operating Frequency ..... 10.5 GHz typical

Output Power ..... 10 mW

Polarity ..... positive

Frequency Stability ..... ± 0.2%

Operating Temperature Range ..... 15 to 50°C

Waveguide Type ..... WR 90 (R100, WG 16)

Flange Type ..... Mates VG 39/u (UBR 100)

Physical Characteristics:

Dimensions ..... 55 x 80 x 47 mm

Weight ..... 0.4 kg

Finish:

Inside ..... Nickel Plated

Outside ..... Black Painted

PARTS LIST AND COMPONENTS

COMPONENT	PART NUMBER	DESCRIPTION	COMPONENT	PART NUMBER	DESCRIPTION
1	28161	NAME PLATE 9510	13	22386	SLEEVE GLASS 10
2	28142	COVER 9510	14	22018-1	TYRAP BLK
3	26219	SCREW TAP PHP 404			
4	28359	NUT HEX 832 METER	C1	23733	CAP .10 50V TAN
5	28336	OSC GUNN G0S2573			
6	28134-1	WAVEGUIDE 9510 PAINT	D1	26205	DIODE ZEN 12.0V
7	27375	SCREW CLINCH 83206			
8	28361	SPACER 02 INT 07	P1	28252	CONN PLUG POWER 2W
9	22748	WASH LOCK EXT 4			
10	28358	BOX 9510	R1	27225	RES 27.0 .25W 5%
11	28360	SCREW RHS 25610			
12	25014	BUSH SNAP 03	W1	26392	CABLE COAX RG58/U

MODEL 9522
CRYSTAL DETECTOR

DESCRIPTION

The Crystal Detector is used to sense low-power microwave signals and convert them to dc signals. It consists of a straight waveguide section terminated with a matched load and a tap-mounted probe (crystal detector). The detector output is applied to a BNC jack for external connection to an amplifier (or measuring device) to indicate relative power values of the microwave signal, or for further signal processing.

SPECIFICATIONS

Operating Frequency ..... 10.5 GHz

Maximum VSWR 1.2

Detecting Element ..... DIODE (1N23C)

Output connector ..... BNC Type

Polarity ..... Positive

Waveguide Type WR90 (R100, WG16)

Flange Type ..... Mates VG39/U (UBR100)

Physical Characteristics:

Dimensions ..... 85 x 135 x 42 mm

Weight ..... 0.3 kg

Finish:

Inside ..... Nickel plated

Outside ..... Black Painted

PARTS LIST AND COMPONENTS

COMPONENT	PART NUMBER	DESCRIPTION
1	28036-1	CONE ABSORBANT 9522
2	28135-1	WAVEGUIDE 9522 PAINT
3	28150	DIODE MW 1N23C
4	28149	O RING 156281
5	28147	PIN CONTACT 9522
6	28098	SCREW PUSH THRM 9521
7	24215	SCREW BHS 44004
8	28148	HOLDER DIODE 9522
9	22183	SLEEVE GLASS 4
10	28045	SPRING COMP 180-750
11	26262	CONN BNC
12	28146	COVER 9522
13	28164	NAME PLATE 9522
14	28143	SCREW SET 25612
15	28059	WASH CONTACT MW
16	24372	TAPE MAGIC 3M 12
17	26219	SCREW TAP PHP 404
18	28077	PLUG NYLON BLACK 312

MODEL 9535
HORN ANTENNA

DESCRIPTION

The Horn Antenna is used to transmit microwave power into free space or receive microwave signals from free space. It is constructed of a short waveguide section, one end of which flares out to form a rectangular horn. It is a directive antenna. When used for transmission, it radiates most of its power in a beam-like pattern.

SPECIFICATIONS

Frequency Range ..... 8.2 to 12.4 GHz

Midband Gain ..... 14.5 dB

VSWR Typical 1.15

Beam Width at 10.4 GHz
- E Plane ..... 29°
- H Plane ..... 38°

Waveguide Type WR90 (R100, WG16)

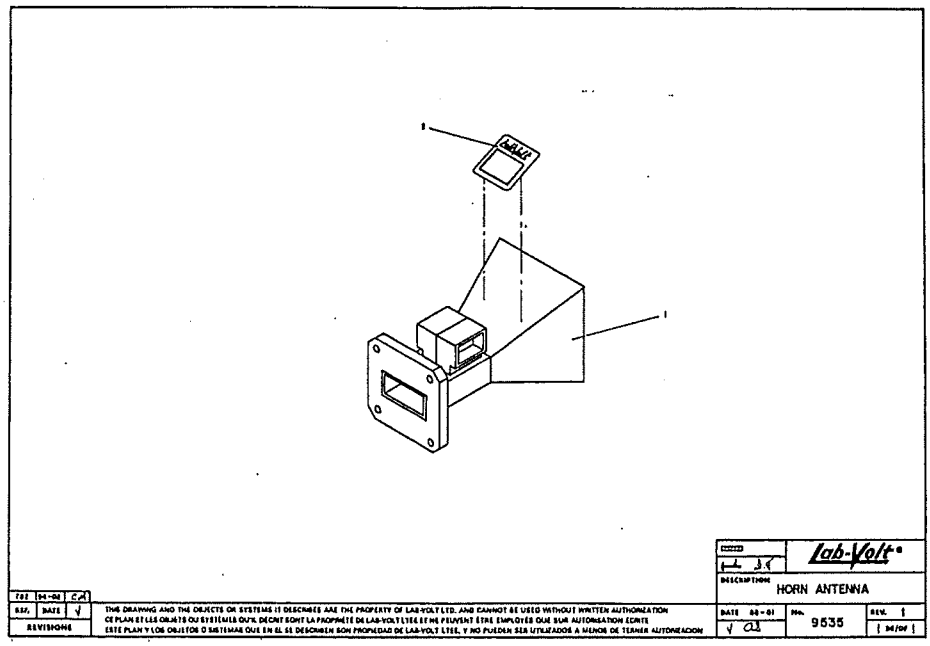
Flange Type ..... Mates UG39/U (UBR100)

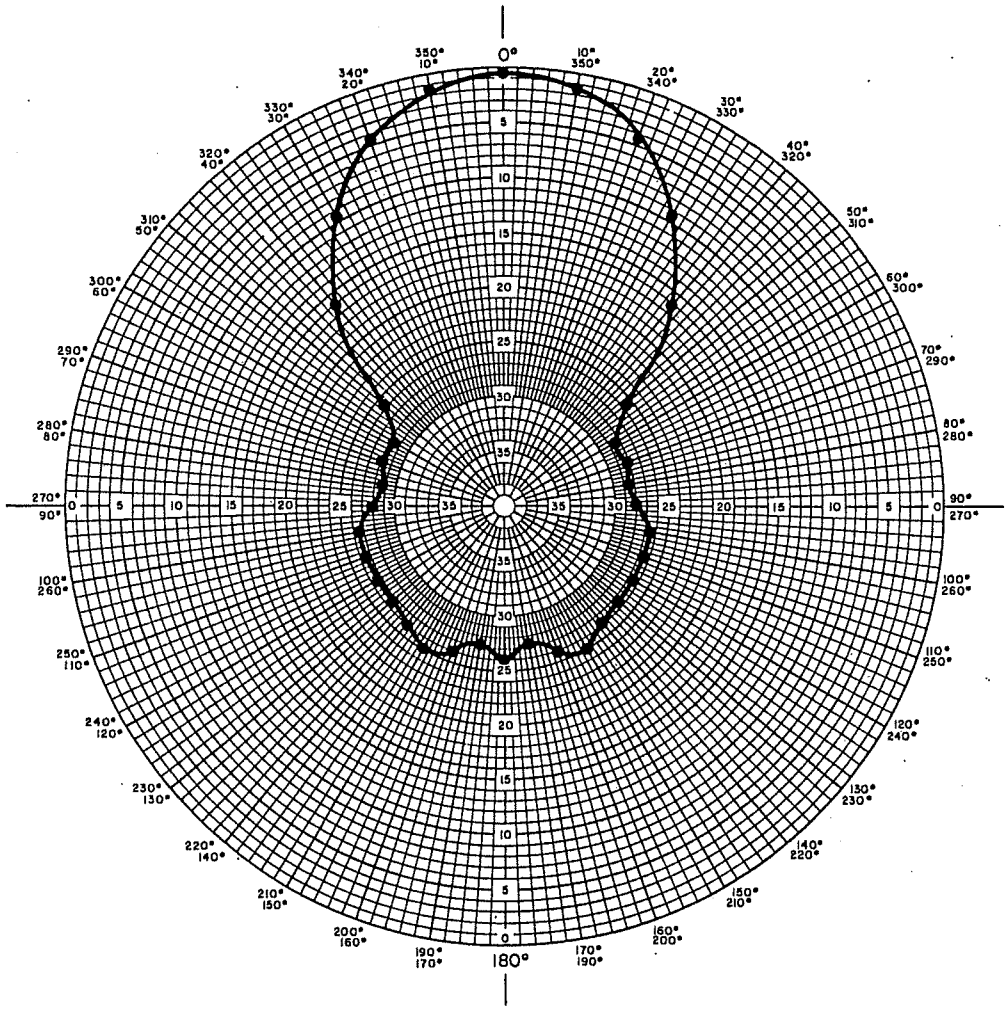
Physical Characteristics:
- Dimensions ..... 50 x 87 x 48 mm
- Weight ..... 0.2 kg

Finish:
- Inside ..... Nickel plated
- Outside ..... Black Painted

PARTS LIST AND COMPONENTS

COMPONENT	PART NUMBER	DESCRIPTION
1	28224-1	WAVEGUIDE 9535 PAINT
2	28171	NAME PLATE 9535





Horn antenna E plane.