

AUDIO TONE KEYS

TIS-3D



The TIS-3D Audio Tone Keyer operates in conjunction with a sideband exciter such as the Model MMX. Its purpose is to generate a keyed or frequency-shifted audio tone so that the carrier will not have to be keyed or shifted directly. The frequency stability of the carrier is thereby maintained using this technique. Clean, transient-free keying is obtained by utilizing reactance control of a 200 KHz oscillator. A precisely calibrated, direct-reading counter-type dial provides simple and accurate adjustment of the desired frequency shift from 12 to 1000 Hz. In the FAX mode, frequency shifted tones are a direct function of the input DC control voltage. This makes available a linear shift of up to 1200 Hz for photographic or cartographic transmission.

A front panel switch allows the selection of four discrete center frequencies to provide compatibility with the following types of operation:

- | | |
|---------|---|
| 1900 Hz | International standard for FAX transmission |
| 2000 Hz | When using equipment limited to 1 KHz increments |
| 2550 Hz | Standard center frequency for a 850 Hz shift |
| 1000 Hz | Fixed audio CW channel frequency |
| SPARE | Additional audio tone center frequency to any designated audio frequency value. |

Additional features include front panel selection of MARK and SPACE test tones; output level adjustment; and metered monitoring. Voltage or current keying loops can be accommodated by the four position KEY MODE switch. Standard values of 50 volts, 100 volts, 20 ma, and 60 ma are provided. In the 20 ma position, the TIS-3D will respond to a +/- 6 volt low-level keying signal. In addition, the temperature controlled crystal oscillators offer exceptionally high stability with a minimum of warm-up time.

Revised 1 August 1971



THE TECHNICAL MATERIEL CORPORATION

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TECHNICAL SPECIFICATIONS

KEYING INFORMATION

Speeds

Up to 400 baud FSK and FAX
Up to 140 baud CW

Inputs

50 volts; 100 volts; 20 ma; 60 ma
Neutral, floating, or either side grounded
0 to +12 volts for a linear shift of
1200 Hz for FAX operation. *±6 @ < 1ma*

Shift

12 to 1000 Hz continuous adjust

AUDIO/FREQUENCY INFORMATION

Audio Center Frequencies

2550 Hz; 2000 Hz; 1900 Hz; SPARE

Spare $f_o = [0.2 - (C.F.)]$ in MHz

f_o is spare crystal frequency

C.F. is desired audio center frequency

CW Tone Frequency

1000 Hz

Frequency Stability

Better than 1% for 0 to 50°C change;
0 to 90% R.H.; 10% voltage change.

OPERATING PARAMETERS

Output Level

Continuously adjustable to 0dbm

Oven Temperature

+70°C

Output Impedance

600 ohms balanced

Input Impedance

60 ma position	150 ohms
20 ma position	150 ohms
50 volt position	47K-ohms
100 volt position	100K-ohms
FAX position	47K-ohms

Front Panel Controls

B+ ON/STANDBY
TEST
CENTER FREQUENCY
FUNCTION
SHIFT CPS
LEVEL ADJUST
KEY MODE
EXCITER

ENVIRONMENTAL AND INSTALLATION

Operating Conditions

0 to +50°C ambient temperature range
Up to 95% relative humidity

Primary Power

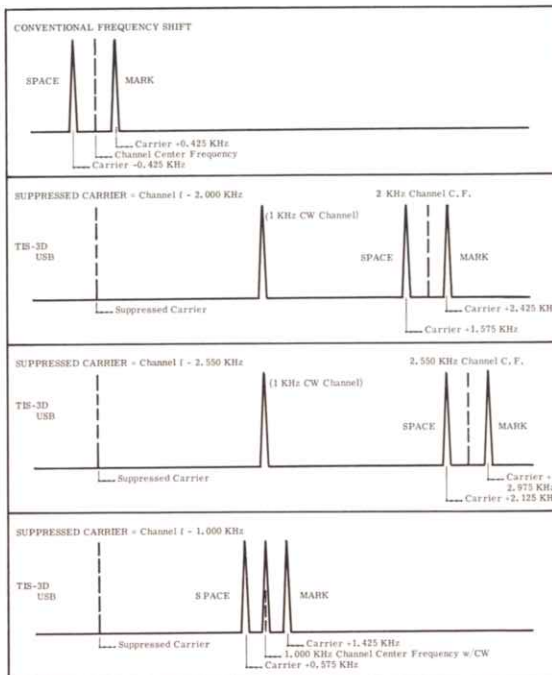
115/230 VAC, 50/60 Hz, single phase
100 watts continuous
170 watts intermittent (oven cycling)

Size and Weight

19" wide X 5 1/4" high X 14" deep
Suitable for rack mounting
Approximately 38 lbs.

Loose Items

RF mating connectors
Two copies of Instruction Manual



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