

SALES SERVICE BULLETIN NUMBER 245

Tone Intelligence Unit
Model TIS-3 (TH-39A/UGT)

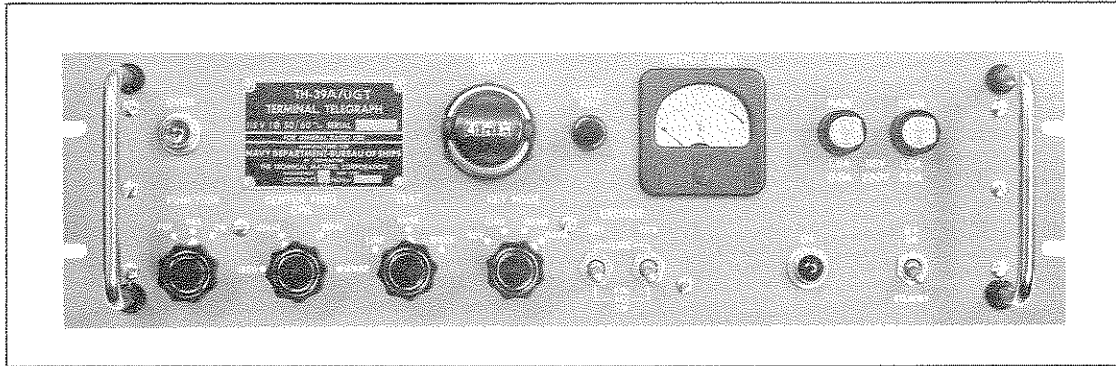
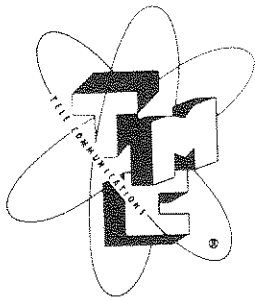


Figure 1. Front View, Model TIS-3

- MULTIPURPOSE AUDIO TONE KEYER.
- VARIABLE SHIFT, 12 TO 1000 CYCLES.
- TRUE FREQUENCY SHIFT, REACTANCE CONTROL OF 200 KC OSCILLATOR.
 - FOUR CENTER FREQUENCIES AVAILABLE
 - ACCURATE, DIRECT READING FREQUENCY SHIFT SETTING.
 - MULTIPLE KEYING INPUTS.
 - HIGH STABILITY.
 - PROVIDES CW, FSK, FAX TYPE OPERATION WITH SSB TRANSMITTERS, TELEPHONE LINES OR MICROWAVE LINKS.
 - COMPATIBLE WITH ALL CURRENT FREQUENCY SHIFT SYSTEMS.

The TMC Model TIS-3 is a multi-purpose Audio Tone Keyer which will provide CW, FSK or FAX modes of operation when used with a SSB transmitter, telephone lines or microwave links.

The TIS-3 was designed to provide maximum flexibility in a single piece of terminal equipment. FSK and FAX operation are compatible with both conventional and the newer SSB systems.

The frequency shift is a true FM system utilizing reactance control of a 200 kc oscillator in order to obtain clean, transient-free keying.

A precisely calibrated, direct reading counter type dial presents fast, simple and accurate adjustment of the desired frequency shift from 12 to 1000 cycles. When used in the FAX mode, shift up to 1200 cycles can be obtained.

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

1. 1,900 cps International standard for FAX transmissions.
2. 2,000 cps For use with transmitters and receivers limited to tuning in 1 kc steps.
3. 2,550 cps Standard center frequency used for 850 cps shift.
4. Optional Any practicable frequency may be selected by the customer by simply installing the appropriate crystal and adjusting a trimmer, in accordance with the instructions provided. This can be performed at the factory if so specified at the time of ordering.

An audio CW channel fixed at 1000 cycles is also provided.

Additional features include front panel selection of MARK and SPACE test tones and 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. Temperature controlled crystal and oscillator components offer exceptionally high stability with a minimum of warm-up time.

TECHNICAL SPECIFICATIONS:

KEYING SPEEDS: 1. Up to 100 wpm FS: 2. Up to 250 wpm CW

KEYING INPUTS: 1. 50 v, 100 v, 20 ma, 60 ma. All neutral, floating, or either side grounded.
2. 0/20 volts positive for a linear shift of 1000 cycles (FAX)

SHIFT: 12 cycles to 1000 cycles continuously adjustable.

AUDIO CENTER FREQUENCIES: 1. 2550 cps
2. 2000 cps
3. 1900 cps
4. Spare (For customer selected center frequency)

CW TONE FREQUENCY: 1000 cps

FREQUENCY STABILITY: Better than .5% for:
1. 0-5° C. ambient temperature change.
2. ± 10% line voltage variation
3. 0 to 95% relative humidity

OUTPUT LEVEL: Continuously adjustable to 0 dbm

CRYSTAL TYPE: CR-47/U for: 1900 cps C.F. use CR-47/U-0.198100-P
for: 2000 cps C.F. use CR-47/U-0.198000-P
for: 2550 cps C.F. use CR-47/U-0.197450-P
4th position order CR-47/U and state desired center frequency.

OVEN TEMPERATURE: 70° C

POWER INPUT: 105/115/125/210/230 volts; 50-60 cps; Single Phase, 100 watts continuous; 170 watts intermittent (oven cycling).

OUTPUT IMPEDANCE: 600 ohms balanced

AUDIO OUTPUT LEVEL: Continuously variable from -20 to 0 db

INPUT IMPEDANCE TO KEYING LINE: 60 ma position 1000 ohms
20 ma position 2200 ohms
50 v position 47,000 ohms
100 v position 100,000 ohms

TUBE COMPLEMENT: 2 ea. OA2
1 ea. 6AB4
1 ea. 6AG5
1 ea. 6J6
4 ea. 12AU7
1 ea. 5963

FRONT PANEL
CONTROLS:

| <u>CONTROL</u> | <u>FUNCTION</u> |
|-----------------|---|
| B+ ON/STANDBY * | Controls B+ Power. |
| EXCITER | Permits selection of inputs. |
| KEY MODE | Permits selection of keying inputs. |
| TEST | a. Activates connections to keying lines b. Activates continuous MARK tone. c. Activates continuous SPACE tone. |
| CENTER CARRIER | Allows selection of one of four center frequencies |
| FUNCTION | Allows selection of FSK, FAX or CW mode of operation |
| SHIFT CPS | Permits extremely accurate selection of shift frequency |
| LEVEL ADJ | Adjusts output level |

FRONT PANEL
INDICATORS:

| | |
|--------------------|--------------------------------------|
| OUTPUT LEVEL METER | Indicates output level in db's and % |
| MAIN fuse | Main power fuse |
| OVEN fuse | Oven fuse |
| B+ | B+ power indicator |
| OVEN IND. | Visual indication of oven cycling. |

REAR PANEL
FACILITIES:

| | |
|--------|--------------------------------|
| LINE 1 | Audio Input |
| LINE 2 | Audio Input |
| CHAN 1 | Audio output |
| CHAN 2 | Audio output |
| FAX G | FAX keying input |
| FAX G | Audio input for narrow band FM |
| C3 | Center Frequency Adjust |

SIZE:

5-1/4 x 19 x 14 inches

WEIGHT:

38 lbs.

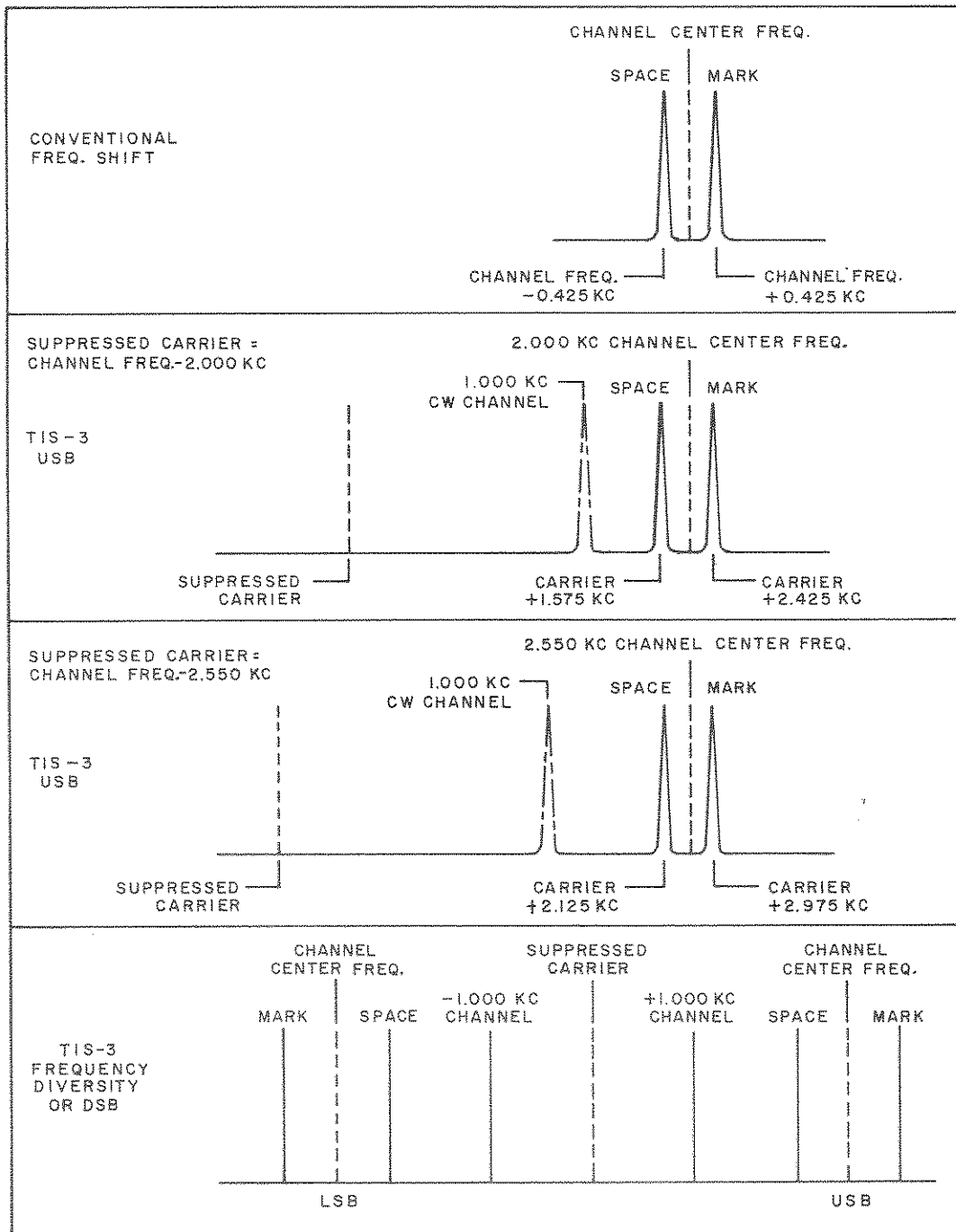
SHIPPING
INFORMATION:

Case Packed 50 lbs.
8 x 21 x 21 inches

COMPONENTS AND
CONSTRUCTION:

All equipment is manufactured in accordance with JAN/MIL specifications wherever practicable.

* Filaments and oven heaters are ON when power is applied to the unit.

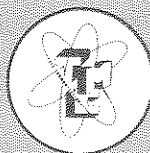


THE TECHNICAL MATERIEL CORPORATION

700 FENIMORE ROAD

MAMARONECK, NEW YORK

CABLE
TEPEI
MAMARONECK, N.Y.



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TMC (CANADA) LTD.
OTTAWA, ONTARIO

COMMUNICATION ENGINEERS