TMC SPECIFICATION

NO. S   1259

REV: Ø A

COMPILED: S. DEMARO   CHECKED: APPD: SHEET   OF

TITLE:

jb/   10/29/70

TEST PROCEDURE

FOR

RTIH-3

I. Equipment Required:

    A. VOM, Simpson Model 260 or equivalent.
    B. Oscilloscope, Tektronix (dual trace) or equivalent.
    C. Electronic Counter, Hewlett-Packard 5255, or equivalent.
    D. RSSA-10
    E. DDRR-10( ) Remote Test Set
    F. Schematic Diagrams - CK1563 and CK1608 thru CK1616
    G. Timing Chart - CH803

II. Preliminary Electrical Tests:

    CAUTION: Be sure AC power is removed from RTIH-3.

    A. Connect ohmmeter across AC input of unit. Be sure
        fuses F1 and F2 are in place.
    B. Set AC switch S1 to ON. Continuity should exist
        across the AC input (approximately 4 ohms). Removing
        either F1 or F2 or setting S1 to OFF will break
        continuity.
    C. Continuity should not exist between AC leads and
        ground. Set S1 to OFF and remove ohmmeter from unit.

III. Power Supply Voltage Checks:

    A. Insert PC-350/A-4545 into A10 and set AC power to ON.
    B. Meter the voltage levels at test points +12V and
        -12V DC. Voltages should be as indicated $\pm$1V DC.
        Meter the voltage level at test point +200V DC, the
        voltage should be +190V DC $\pm$10V DC. Record on test
        data sheet.
    C. Monitor TP+12 and jumper TP+12 to ground. Remove
        ground, voltage level should return to +12V DC.
        Repeat for test point -12V DC. Record on test data
        sheet.

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D. Monitor TP+12 with the high gain scope. The ripple present on TP+12 should be no more than 20 millivolts peak-to-peak. Repeat for test point -12V DC. Record on test data sheet.

E. Power distribution checks.

Measure the following points for voltages and grounds:

CONNECTOR		PIN	
	+12V DC	-12V DC	GND
A1	20	4	1,22,A,Z
A2	--	4	1,22,A,Z
A3	20	4	1,22,A,Z
A4	20	4	1,22,A,Z
A5	20	4	1,22,A,Z
A6	20	4	1,22,A,Z
A7	20	4	1,22,A,Z
A8	20	4	1,22,A,Z
A9	20	4	1,22,A,Z
A14	20	4	1,22,A,Z
A15	20	4	1,22,A,Z
A16	20	4	1,22,A,Z

IV. Input Timing and Reset Timing and Gating Checks:

    A. Interconnect Test Set, RSSA-10 and RTIH-3

        Set switches on test set as follows:
        1. All frequency switches to 0
        2. All other switches to position 1.
        3. Selector switch to RTIH
        4. Set test set AC power to ON

    B. Set AC power to RTIH-3 OFF. Insert PC-316/A-4494 into A2 and insert PC-318/A-4496 into A9. Turn AC power to RTIH-3 ON. Monitor TP4 of A9 (PC-318) for negative going pulses. If no pulses are seen, adjust R4 of A2 (PC-316) until keyer starts keying.

    C. Place scope probe on TP2 of A9 (PC-318) and observe negative going square wave pulses. Connect frequency counter to TP8 and adjust R1 for 27.00 msec (100 wpm) or 44.00 msec (60 wpm) ± 0.05 milliseconds. Record on test data sheet. Set AC power OFF.

    D. Insert PC-319/A-4530 into A8, and set AC power to ON. Observe negative pulses at pins 2,5,7,10,B,C,D,E,J,M,N, R,S. Also check for 15 microsecond pulses at pins 12, 13,14,15,16,18,19,P. Record on test data sheet. Set AC power OFF.

    E. Insert two PC-315/A-4493 into A6 and A7 and set AC power to ON. Check pulse at A6 pin P. Also on A6 observe negative pulses at pins 2,3,16,17,18,19,D.E. Repeat the same for A7. Record on test data sheet. Set AC power to OFF.

V. Operational Checks:

    A. Memory Gating Circuits (FREQUENCY)
        1. Insert PC-317/A-4495 into A4 and A5. Set AC power ON.
        2. Rotate frequency select knobs on test set and observe that RTIH-3 follows test set position 0 thru 9. Record on test data sheet.
        3. Turn AC power OFF.

B. Memory Lamp Driver (RTIH LAMPS)
   1. Insert PC-320/A4531 into A3 and set AC power ON.
   2. Rotate memory lamp knob on test set thru positions
      1-9. Observe on RTIH-3 the following indications
      and record on test data sheet.

Lamp Knob Position	1	2	3	4	5	6	7	8	9
Lamp Light	Ready	Tuning	Fault	Equip. Selected	Non-Automatic	Decoder Power	Synth	AFC	AFC Alarm

   3. Turn AC power on test set to OFF, and DECODER POWER
      lamp will light.
   4. Set AC power on RTIH-3 OFF.
   5. SEt AC power on test set to ON.

C. Gating Circuit Equipment Selected (RSSA SEL.):
   1. Insert PC-314/A-4492 into A1 and set AC power ON.
   2. Rotate RSSA select knob on test set through positions
      1-10 and observe the RSSA-10 following. Record on
      test data sheet.
   3. Turn AC power OFF.

D. Memory Gating Circuit (MODE):
   1. Insert PC-314/A-4492 into A16 and set AC power ON.
   2. On RTIH-3 observe readout in MODE position while
      rotating mode switch on test set through positions 1-5,
      indications will follow according to the table and
      record on test data sheet.

Mode Switch Position	1	2	3	4	5
Indication	AM 2.5KC	AM 6KC	CW 2.5KC	CW 6KC	ISB

   3. Turn AC power OFF.

E. Memory Gating Circuit (TIME CONSTANTS)

  1. Insert PC-396/A4625 into A14 and A15. Set AC power ON.

  2. On RTIH-3 observe readout in $\frac{SYMB2}{B1}$ position while rotating time constants #1 switch and readout in $\frac{A2}{A1}$ position while rotating time constants #2 switch. Indications will follow according to the table and record on test data sheet.

Switch Position	1	2	3	4	5	6	7	8	9	10	11	12
Indication	Slow Slow	Med Slow	Fast Slow	Slow	Slow Med	Med Med	Fast Med	Med	Slow Fast	Med Fast	Fast Fast	Fast

  3. Set AC power OFF.

TEST DATA SHEET FOR RTIH-3

1. Power Supply Checks:

		Ripple	Shorting
A.	TP-12 _____ VDC	_____ Millivolts	_____ OK
B.	TP+12 _____ VDC	_____ Millivolts	_____ OK
C.	TP+200 _____ VDC		

2. Input Timing Circuit

   A. PC-316/A-4494 _____ OK
   B. PC-318/A-4496 _____ OK
   C. Period adjusted to _____ msec

3. Reset Timing and Gating Circuits:

   A. PC319/A-4530 _____ OK
   B. PC315/A-4493 _____ OK
   C. PC315/A-4493 _____ OK

4. Memory Gating Circuits: (10Mc - .1Kc)

   A. PC-317/A4495
               10MC _____ OK
                1MC _____ OK
             100KC _____ OK
   B. PC-317/A4495
               10KC _____ OK
                1KC _____ OK
               .1KC _____ OK

5. Memory Lamp Driver:

   A. PC-320/A-4531
                    Ready _____ OK
                  Tuning _____ OK
                    Fault _____ OK
        Equipment Selected _____ OK
         Non-Automatic _____ OK
         Decoder Power _____ OK
                    Synth _____ OK
                      AFC _____ OK
                AFC Alarm _____ OK

6.　Gating Circuit RSSA Select:

   PC-314/A-4492 _____OK

7.　Mode _____OK

8.　Time Constants <u>SYMB2</u>

   　　　　　　　　B1 _____OK

9.　Time Constants <u>A2</u>

   　　　　　　　　A1 _____OK

Tested By: _____

Date: _____

DATE	REV.	SHEET	EMN #	DESCRIPTION	APP.
11/13/70	Ø			ORIGINAL RELEASE FOR PRODUCTION	
7/1/71	A	3,6	20403	REVISED AS PER EMN 20403	

REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK   NEW YORK

S1259
LIST NO.

TMC FORM MLR-1 2-65—AINS.