DATE 6 January 1965 SHEET COVER OF	TMC SPECIFICATION NO. S 901	0
COMPILED CHECKED FEE	TITLE:	
APPROVED RA SS		

RTIA - I
TEST
PROCEDURE

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. STOCK NO. 439M

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A. EQUIPMENT REQUIRED

1. VOM, Simpson 260 or equivalent.
2. Oscilloscope, Tektronix Model 545 or equivalent.
3. Electronic Counter, Hewlett-Packard 5244 or equivalent.

B. PRELIMINARY

1. Voltage Check

   a. Before placing any cards in the unit, turn the AC power switch to ON and with the VOM check for -12 volts (blue wires) +12 V (red wires) and +180 V (yellow wires).

2. Keying Pins

   a. Before any cards are placed in the unit, check to see that each connector is keyed properly to receive the PC card intended for it.

3. Initial Reset

   a. Insert card extender PC129/A3699 into Z-2028 and insert PC127/A3694 into the card extender.
   b. Connect the oscilloscope to pin 40 of PC127/A3694, and turning the power switch to ON and OFF slowly observe a positive pulse of short duration.
   c. Connect the oscilloscope to pin 42 and repeat.
   d. Turn the power OFF, remove the extender card and insert PC127/A3694 into Z-2028.

4. Frequency Adjust

   a. Insert card extender PC129/A3696 into Z-3020 and insert PC165/A3806 into it.
   b. Feed intelligence from an operating RTMU into the input connector at the rear of the unit.
   c. Set the oscilloscope on the 50 mil-sec. cm and 1 volt cm range and connect the oscilloscope probe to CLOCK test point 2 in the front of the RTIA.
   d. Turn power switch to ON and observe a continuous line of positive pulses.
   e. Remove the oscilloscope probe from test point 2 and connect the frequency counter, set for a 1 volt sensitivity, to it.
   f. By adjusting potentiometer R5 on PC165/A3806, adjust the frequency of the clock to 22 mil-sec. as indicated by the frequency counter.
   g. Turn the power OFF, but do not remove the card or extender card from Z-3020.

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C. TEST PROCEDURES

1. Insert another extender card PC129/A3696 into Z-2029 and insert PC125/A3692.

2. Set the oscilloscope for 50 mil-sec/ cm and 1 volt /cm range and connect the probe to pin 12 of PC165/A3806.

3. Turn the power switch to ON and observe one -12 volt square wave pulse.

4. Connect the oscilloscope probe to pin 6 of PC165/A3806 and observe a continuous string of negative pulses of random length.

5. Connect the oscilloscope probe to pin 2 of PC165/A3806, and by turning the power switch OFF and ON, observe six pulses, a break, and then a continuous string of pulses.

6. Turn the power switch to OFF, disconnect the oscilloscope probe, remove the card extender PC129/A3696 from Z-2029 and insert PC125/A3692 into Z-2029.

7. Insert PC160/A3794 into Z-2026.

8. Connect the oscilloscope probe to test point 2 in the front of the RTIA and, upon turning the power switch to ON, observe a continuous string of positive pulses.

9. Connect the oscilloscope probe to the SHIFT test point in the front of the RTIA and observe positive pulses about 160 mil-sec. apart.

10. Turn the power switch to OFF, remove card extender PC129/A3696 from Z-2030 and insert PC165/A3806 into Z-2030.

11. Insert PC139/A3756 into Z-2027 connect the oscilloscope probe to the SYNC test point in the front of the RTIA, and upon turning the power switch to ON observe positive going pulses about every two (2) seconds.

12. Turn the power switch to OFF and disconnect the oscilloscope probe.

13. Insert PC144/A3761 into Z-2001 and turn the power switch to ON.

14. With the oscilloscope probe connected to the RESET test point, near the front panel of the RTIA, observe a negative going pulse about every 160 mil-sec.

15. With the oscilloscope connected to the SET test point, near the front panel, observe a negative going pulse about every 160 mil-sec.

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16. Turn the power switch to OFF and disconnect the oscilloscope probe.

17. Insert two (2) PC141/A3758 cards into Z-2002 and Z-2009, and insert extender card PC129/A3696 into Z-2025. Insert PC142/A3759 into card extender and turn the power switch to ON.

18. Connect the oscilloscope probe to TP-4, TP-3 and pin 10 of PC142/A3759, in succession, and observe a 150 mil-sec. square wave, appearing every two (2) to three(3) seconds.

19. Observe a sharp negative going pulse on pin 34 of the card.

20. Turn the power switch to OFF, remove card extender PC129/A3696 and insert PC142/A3759 into Z-2025.

21. Insert all six (6) of the megacycle cards, as follows:

    PC121/A3688 into Z-2024
    PC143/A3760 into Z-2023
    PC140/A3757 into Z-2022
    PC140/A3757 into Z-2021
    PC145/A3764 into Z-2020
    PC138/A3755 into Z-2019

    and turn the power switch to ON.

22. Using a DDRR-5 system, rotate the megacycles knob on the HFSR-1 and observe the megacycle reading on the RTIA match the megacycle reading on the HFSR-1.

23. Turn the power switch to OFF.

24. Insert 100 KC and 10 KC PC boards as follows:

    PC121/A3688 into Z-2018
    PC121/A3688 into Z-2017
    PC124/A3691 into Z-2016

    and turn the power switch to ON.

25. Rotate the 100 KC and 10 KC knobs on the HFSR-1 and observe that the RTIA displays the same numbers that appear on the HFSR-1.

26. Insert the 1 KC and .1 KC PC boards as follows:

    PC121/A3688 into Z-2003
    PC121/A3688 into Z-2004
    PC124/A3691 into Z-2005

27. Rotate the 1 KC and .1 KC knobs on the HFSR-1 and observe that the RTIA displays the same numbers as appear on the HFSR-1.

28. Turn the power switch to OFF.

29. Insert the Channel A IFBW and detection cards as follows:

    PC121/A3688 into Z-2006
    PC121/A3688 into Z-2007
    PC123/A3690 into Z-2008

    and turn the power switch to ON.

30. Rotate the Channel A IFBW knob on the HFIR-1 and Channel A DETECTION knob on the HFAR-1 and observe that the RTIA displays the correct knob positions.

31. Turn the power switch to OFF.

32. Insert the PC boards used with the Channel B IFBW, DETECTION, AFC ON-OFF, IN TUNE PROCESS, FAULT, and READY displays as follows:

    PC121/A3688 into Z-2010
    PC121/A3688 into Z-2011
    PC121/A3688 into Z-2012
    PC123/A3690 into Z-2013

    and turn the power switch to ON.

33. Rotate the Channel B IFBW knob on the HFIR-1, and the Channel B DETECTION knob on the HFAR-1 and observe that the RTIA displays the correct knob positions.

34. Turn the AFC ON-OFF switch on the HFIR-1 to ON and OFF and observe that the RTIA displays ON and then OFF.

35. Detune the HFRR-2 from the HFSR-1 until the SYNC light on the HFSR-1 is out and observe that the RTIA FAULT display is illuminated.

36. Retune the HFRR-2 until it is in sync with the HFSR-1 and observe that the RTIA FAULT indication is extinguished and the READY display is illuminated.

37. Slide the RTTD out of the DDRR-5 cabinet, turn the power switch to ON and depress the BOY relay in the rear of the RTDD so that the RTTD is placed in the operate condition.

38. Observe that the RTIA READY light is extinguished and the IN TUNE PROCESS display is illuminated.

39. After about thirty (30) seconds the RTTD will automatically turn off at which time observe that the RTIA IN TUNE PROCESS display is extinguished and the RTIA READY display is illuminated.

40. Turn the RTIA power switch to OFF.

41. Insert the RF GAIN PC boards as follows:

PC121/A3688 into Z-2014
PC126/A3693 Z-2015

and turn the power switch to ON.

42. Rotate the RF GAIN knob on the HF1R-1 and observe that the RTIA displays the correct gain setting as the knob is rotated.

THIS COMPLETES THE CHECK-OUT OF THE RTIA.

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REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK NEW YORK

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1/21/65		1 of	5	O=ORIGINAL RELEASE FOR PRODUCTION.	