

Test Report

Prepared for: Honeywell International Inc

Model: RTA-50E

Description: VHF Aviation Communications Transceiver

Serial Number: RTA50E-00010

FCC ID: AOIRTA-50E

To

FCC Part 1.1310

Date of Issue: March 22, 2024

On the behalf of the applicant:

Honeywell International Inc
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Attention of:

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The seal is circular with the text 'COMPLIANCE TESTING' at the top, 'ESTABLISHED 1963' at the bottom, and 'CERTIFIED' on the right side. A handwritten signature, 'Greg Corbin', is written across the seal.

[Greg Corbin](#)
[Project Test Engineer](#)

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Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	3/22/2024	Greg Corbin	Original Document
2.0	4/1/2024	Greg Corbin	Corrected limit on pages 5 and 6. Updated minimum safe distance on page 6

ANAB

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The tests results contained within this test report all fall within our scope of accreditation, unless noted below.

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FCC Site Reg. #349717

IC Site Reg. #2044A-2

EUT Description

Model: RTA-50E

Description: VHF Aviation Communication Transceiver

Hardware / Equipment: 965-1796-0F1, Rev B

Software: SWM69001496-502

Firmware: CHM69001490-901 / CHM69005814-901

Serial Number: RTA50E-00010

Additional Information:

The RTA-50E VDR system is an airborne VHF communications transceiver that operates in 118 MHz to 136.975 MHz airborne frequency band located inside the fuselage. It provides voice and data communication between on-board aircraft systems, other aircraft systems, and ground-based systems. It can operate in analog DSB-AM analog voice mode, VHF ACARS data modes (Mode A), and VDL Mode 2 data mode.

Mode of Operation	Modulation	Emission Designator
Voice	DSB-AM	6K00A3E
Data Mode A	2400 bps MSK	13K0A9W
Data Mode 2	31.5 kbps D8PSK	14K0G1D

The maximum conducted power from the RF test report (45.97 dBm, 39.537 watts) and 0 dBi antenna gain was used for RF exposure calculations.

If a different antenna gain is used, then the RF exposure should be re-evaluated.

MPE Evaluation

This is a mobile device used in an Uncontrolled Exposure environment.

Limits Controlled Exposure
47 CFR 1.1310
Table 1, (A)

0.3-3.0 MHz:	Limit [mW/cm ²] = 100
3.0-30 MHz:	Limit [mW/cm ²] = (900/f ²)
30-300 MHz:	Limit [mW/cm ²] = 1.0
300-1500 MHz:	Limit [mW/cm ²] = f/300
1500-100,000 MHz	Limit [mW/cm ²] = 5

Limits Uncontrolled Exposure
47 CFR 1.1310
Table 1, (B)

0.3-1.234 MHz:	Limit [mW/cm ²] = 100
1.34-30 MHz:	Limit [mW/cm ²] = (180/f ²)
30-300 MHz:	Limit [mW/cm ²] = 0.2
300-1500 MHz:	Limit [mW/cm ²] = f/1500
1500-100,000 MHz	Limit [mW/cm ²] = 1.0

Test Data

The lowest frequency and highest output power was used for the worse case calculations for each band.

$S = \frac{P * G}{4\pi r^2}$
Power Density (S) mw/cm ²

Band of operation: 1041 - 1150 MHz

Test Frequency, MHz	118
Power, Conducted, mW (P)	39537
Antenna Gain Isotropic	0 dBi
Antenna Gain Numeric (G)	1
Antenna Type	Not Specified
Distance (R)	20 cm

Power Density (S) = 7.866 mw/cm ²
Limit = (from above table) = 0.2 mw/cm ²

The maximum permissible exposure of 7.866 mw/cm² is over the allowed limit of 0.2 mw/cm² with 0 dBi gain antenna.

The minimum safe distance was calculated on the next page.

Minimum Safe Distance Evaluation

This is a mobile device used in an Uncontrolled Exposure environment.

Limits Controlled Exposure
47 CFR 1.1310
Table 1, (A)

0.3-3.0 MHz:	Limit [mW/cm ²] = 100
3.0-30 MHz:	Limit [mW/cm ²] = (900/f ²)
30-300 MHz:	Limit [mW/cm ²] = 1.0
300-1500 MHz:	Limit [mW/cm ²] = f/300
1500-100,000 MHz	Limit [mW/cm ²] = 5

Limits Uncontrolled Exposure
47 CFR 1.1310
Table 1, (B)

0.3-1.234 MHz:	Limit [mW/cm ²] = 100
1.34-30 MHz:	Limit [mW/cm ²] = (180/f ²)
30-300 MHz:	Limit [mW/cm ²] = 0.2
300-1500 MHz:	Limit [mW/cm ²] = f/1500
1500-100,000 MHz	Limit [mW/cm ²] = 1.0

Test Data

Test Frequency, MHz	118
Power, Conducted, mW (P)	39537
Antenna Gain Isotropic	0 dBi
Antenna Gain Numeric (G)	1
Antenna Type	Not Specified
Limit (L)	0.2 mw/cm ²

$R = \sqrt{(PG/4\pi L)}$			
Distance (R) cm	Power mW (P)	Numeric Gain (G)	Limit (L)
125.5	39537	1	0.2

The Minimum Safe Distance with 0 dBi gain antenna is 125.5 cm.

END OF TEST REPORT