Engineering and Testing for EMC and Safety Compliance

FCC CLASS 2 PERMISSIVE CHANGE TEST REPORT

COMMUNICATIONS RECEIVER

MODEL: DJ-S40T
FCC ID: PH3DJ-S40T

Alinco Incorporated
Electronics Division
Shin-Dai Building 9F
2-6, 1-Chome, Dojimahama, Kita-ku
Osaka 530-0004 Japan

June 29, 2005

Standards Referenced for this Report	
Part 2: 2004	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
Part 15.121: 2004	Radio Frequency Devices; Scanning Receivers and Frequency Converters Used with Scanning Receivers
ANSI C63.4-2003	Standard Format Measurement/Technical Report Personal Computer and Peripherals

Frequency Range (MHz)	Output Power (W)	Frequency Tolerance	Emission Designator
400 – 430 MHz	N/A	N/A	N/A
440 – 479.995 MHz	N/A	N/A	N/A

REPORT PREPARED BY:

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1 GENERAL INFORMATION

The following application for an FCC Class 2 Permissive Change of an analog scanning receiver is prepared on behalf of Alinco Incorporated; Electronics Division, in accordance with FCC Rules and Regulations Parts 2 and 15. The Equipment Under Test (EUT) is Alinco Model DJ-S40T, FCC ID: PH3DJ-S40T. The test results reported in this document relate only to the item that was tested.

All measurements contained in this application were conducted in accordance with ANSI C63.4 Methods of Measurement of Radio Noise Emissions, 2003. The instrumentation utilized for the measurements conforms to the ANSI C63.4 standard for EMI and Field Strength Instrumentation. Some accessories are used to increase sensitivity and prevent overloading of the measuring instrument. Calibration checks are performed regularly on the instruments, and all accessories including the high pass filter, preamplifier and cables.

1.1 MODIFICATIONS

No modifications were made during testing.

1.2 RELATED SUBMITTAL(S)/GRANT(S)

The original certification of FCC ID: PH3DJ-S40T was granted on 11/21/2001 and a Class 2 Permissive Change was granted on 5/31/2003.

The purpose of this Class 2 Permissive Change is to test AC line conducted emissions per the latest FCC rules (down to 150 kHz) in order to remove grant note 05 “The manufacture and importation of this device must cease on July 10, 2005, pursuant to 15.37(j) or 18.123 transition provisions adopted under FCC 02-157 (ET Docket 98-80)” from the Class 2 Permissive Change issued 5/31/2003. The EUT has not changed in any way since the last Class 2 Permissive Change.

1.3 TEST METHODOLOGY

AC conducted emissions per FCC 15.107 and ANSI C63.4 2003.

1.4 TEST FACILITY

The open area test site and conducted measurement facility used to collect the radiated data is located on the parking lot of Rhein Tech Laboratories, 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report, submitted to and approved by the Federal Communications Commission, to perform AC line conducted and radiated emissions testing (ANSI C63.4 2003).

2 CONFORMANCE STATEMENT

Standards Referenced for this Report	
Part 2: 2004	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
Part 15.121: 2004	Radio Frequency Devices; Scanning Receivers and Frequency Converters Used with Scanning Receivers
ANSI C63.4-2003	Standard Format Measurement/Technical Report Personal Computer and Peripherals

Frequency Range (MHz)	Output Power (W)	Frequency Tolerance	Emission Designator
400 – 430 MHz	N/A	N/A	N/A
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I, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described above. No modifications were made to the equipment during testing in order to achieve compliance with these standards.

Furthermore, there was no deviation from, additions to, or exclusions from the ANSI C63.4 test methodology.

Signature:  Date: June 29, 2005

Typed/Printed Name: Desmond A. Fraser Position: President
(NVLAP Signatory)

NVLAP *Accredited by the National Voluntary Accreditation Program for the specific scope of accreditation under Lab Code 20061-0.*

Note: This report may not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

3 SYSTEM TEST CONFIGURATION

3.1 JUSTIFICATION

The test sample was received on June 29, 2005. The FCC Identifiers for all equipment, plus descriptions of all cables used in the tested system are in the following table.

TABLE 3-1: EQUIPMENT UNDER TEST (EUT)

Part	Manufacturer	Model	Serial Number	FCC ID	Cable Description	RTL Bar Code
Wide band receiver	Alinco	DJ-S40T	M500528	PH3DJ-S40T	N/A	16733
Wide band receiver	Alinco	DJ-S40T	M500529	PH3DJ-S40T	N/A	16734
AC adaptor/charger	Alinco	EDC-93	none	N/A	unshielded	13433

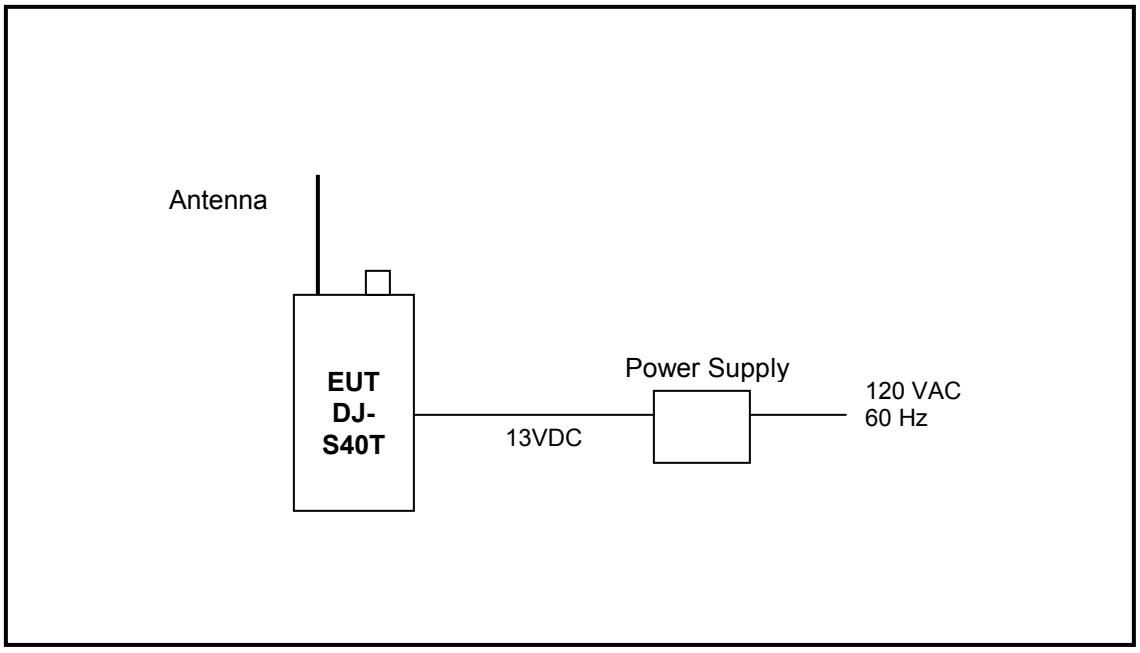

FIGURE 3-1: TEST SYSTEM CONFIGURATION

4 CONDUCTED EMISSIONS

4.1 CONDUCTED EMISSIONS MEASUREMENTS PROCEDURE

The power line conducted emission measurements were performed in a Series 81 type shielded enclosure manufactured by Rayproof. The EUT was assembled on a wooden table 80 centimeters high. Power was fed to the EUT through a 50 ohm / 50 microhenry Line Impedance Stabilization Network (EUT LISN). The EUT LISN was fed power through an A.C. filter box on the outside of the shielded enclosure. The filter box and EUT LISN housing are bonded to the ground plane of the shielded enclosure. A second LISN, the peripheral LISN, provides isolation for the EUT test peripherals. This peripheral LISN was also fed A.C. power. A metal power outlet box, which is bonded to the ground plane and electrically connected to the peripheral LISN, powers the EUT host peripherals.

The spectrum analyzer was connected to the A.C. line through an isolation transformer. The 50-ohm output of the EUT LISN was connected to the spectrum analyzer input through a Solar 7 kHz high-pass filter. The filter is used to prevent overload of the spectrum analyzer from noise below 7 kHz. Conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak mode (or peak mode if applicable). The analyzer's 6 dB bandwidth was set to 9 kHz. No video filter less than 10 times the resolution bandwidth was used. Average measurements are performed in linear mode using a 10 kHz resolution bandwidth, a 1 Hz video bandwidth, and by increasing the sweep time in order to obtain a calibrated measurement. The emission spectrum was scanned from 150 kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in this report.

4.2 CONDUCTED EMISSIONS DATA

TABLE 4-1: CONDUCTED EMISSIONS - NEUTRAL CONDUCTOR

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	CISPR B QP Limit (dBuV)	CISPR B QP Margin (dBuV)	CISPR B AV Limit (dBuV)	CISPR B AV Margin (dBuV)	Pass/ Fail
0.157	Pk	48.0	0.2	48.2	65.6	-17.4	55.6	-7.4	Pass
0.247	Pk	45.7	0.2	45.9	61.9	-16.0	51.9	-6.0	Pass
0.358	Pk	44.1	0.3	44.4	58.8	-14.4	48.8	-4.4	Pass
0.451	Pk	40.9	0.3	41.2	56.9	-15.7	46.9	-5.7	Pass
0.590	Pk	36.9	0.2	37.1	56.0	-18.9	46.0	-8.9	Pass
0.820	Pk	33.1	0.4	33.5	56.0	-22.5	46.0	-12.5	Pass
1.620	Pk	17.1	0.7	17.8	56.0	-38.2	46.0	-28.2	Pass
11.120	Pk	16.2	1.8	18.0	60.0	-42.0	50.0	-32.0	Pass
22.330	Pk	17.8	2.6	20.4	60.0	-39.6	50.0	-29.6	Pass

TABLE 4-2: CONDUCTED EMISSIONS - PHASE CONDUCTOR

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	CISPR B QP Limit (dBuV)	CISPR B QP Margin (dBuV)	CISPR B AV Limit (dBuV)	CISPR B AV Margin (dBuV)	Pass/ Fail
0.150	Pk	47.6	0.2	47.8	66.0	-18.2	56.0	-8.2	Pass
0.246	Pk	45.0	0.2	45.2	61.9	-16.7	51.9	-6.7	Pass
0.381	Pk	40.8	0.3	41.1	58.3	-17.2	48.3	-7.2	Pass
0.500	Pk	40.2	0.3	40.5	56.0	-15.5	46.0	-5.5	Pass
0.770	Pk	30.6	0.3	30.9	56.0	-25.1	46.0	-15.1	Pass
1.030	Pk	22.7	0.5	23.2	56.0	-32.8	46.0	-22.8	Pass
7.580	Pk	16.8	1.6	18.4	60.0	-41.6	50.0	-31.6	Pass
19.290	Pk	16.6	2.5	19.1	60.0	-40.9	50.0	-30.9	Pass
25.250	Pk	16.3	2.7	19.0	60.0	-41.0	50.0	-31.0	Pass

TABLE 4-3: EQUIPMENT USED FOR TESTING

Part Type	Manufacturer	Model	Serial Number	Barcode	Cal Due Date
Display Section	Hewlett Packard	85662A	2816A16471	900896	3/8/2006
Spectrum Analyzer (10 kHz-1.5 GHz)	Hewlett Packard	8567A	2727A00535	900897	3/8/2006
Quasi-Peak Adapter	Hewlett Packard	85650A	2521A00743	900339	5/3/2006
Filter	Solar	8130	947306	900729	N/A
16A LISN	AFJ International	LS16/110VAC	16010020082	901084	12/24/2005
16A LISN	AFJ International	LS16/110VAC	16010020080	901083	3/24/2006

Test Personnel:

Signature:  Date: June 29, 2005 Typed Name: Jon Wilson

5 CONCLUSION

The data in this measurement report shows that the Alinco Incorporated Model DJ-S40T, FCC ID: **PH3DJ-S40T**, complies with the latest requirements of FCC Part 15.107.