

Straubing, 21 February 2003

TEST-REPORT

No. 56408-20818

for

AW-8H

Wireless microphone transmitter

Applicant: SEKAKU Electron Industry Co. Ltd.

Purpose of testing: To show compliance with

FCC Code of Federal Regulations, Part 74 Subpart H, section 74.861

Note:

The test data of this report relate only to the individual item which has been tested. This report shall not be reproduced except in full extent without the written approval of the testing laboratory.



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1. Administrative Data

Test item (EUT)			
Type designation	AW-8H		
Serial number(s):	001		
Type of equipment:	Wireless microphone transmitter		
Parts/accessories:			
FCC-ID:	H38xxxxx		
Technical data			
Frequency range	794 – 805 MHz		
Operational frequency	794.300 MHz, 799.600 MHz, 804.300 MHz		
Type of modulation	150KF3E		
Pulse frequency	N/A		
Pulse width	N/A		
Antenna	Integrated		
Power supply	9 V Battery		
Applicant: (full address)	SEKAKU Electron Industry Co. Ltd. No. 1 Lane 17, Sec. 2, Han Shi West Road Taichung 401, Taiwan, R.O.C.		
Contract identification:			
Contact person:	Joan Wu		
Manufacturer:	SEKAKU Electron Industry Co. Ltd.		
Application details			
Receipt of EUT:	16 December 2003		
Date of test:	21 February 2003		
Note:			
Responsible for testing:	Johann Roidt		
Responsible for test report:	Johann Roidt		



2. Identification of Test Laboratory

DETAILS OF THE TEST LABORATORY

COMPANY NAME: Senton GmbH EMI/EMC Test Center

ADDRESS: Aeussere Fruehlingsstrasse 45

D-94315 Straubing

Germany

LABORATORY ACCREDITATION: DAR-Registration No. TTI-P-G 062/94-40

FCC TEST SITE LISTING

INDUSTRY CANADA TEST SITE

REGISTRATION

NAME FOR CONTACT PURPOSES: Mr. Johann Roidt

TELEPHONE: (+49) (0)9421 5522-0 FAX: (+49) (0)9421 5522-99

PERSONNEL INVOLVED IN THIS TEST REPORT

TECHNICAL DIRECTOR:

Mr. Johann Roidt

RESPONSIBLE FOR TESTING: Mr. Johann Roidt

RESPONSIBLE FOR TEST REPORT: Mr. Johann Roidt

SUMMARY OF TEST RESULTS

The tested sample complies with the requirements set forth in the Code of Regulations Part 15 Subpart H, Section § 74.861 of the Federal Communication Commission (FCC.



3. Operation Mode of EUT

Transmitter operating continuously, full tests were performed on lowest, middle and highest RF channel.

With battery supply 9.00 V DC



4. Configuration Configuration of the EUT Not applicable Cables connected to the EUT Not applicable Peripheral devices connected to the EUT Not applicable



5. Measuring Methods

5.1. Maximum Transmitter Power (§ 2.1046 (a), 74.861 (e))

5.1.1. Conducted Maximum Transmitter Power

Rules and Specifications:	Sections 2.1046 (a)	
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.11	
Test Conditions:	As indicated below	

Measurement Procedure:

A spectrum analyzer / EMI test receiver is connected to the output of the transmitter power amplifier (conducted measurement) via dummy load while EUT was operating in transmit mode using the assigned frequency.

The trace mode of the spectrum analyzer was set to max hold with:

RBW = 100 kHz, VBW = 100 kHz, span = 1 MHz, sweep = 20 ms (auto mode)

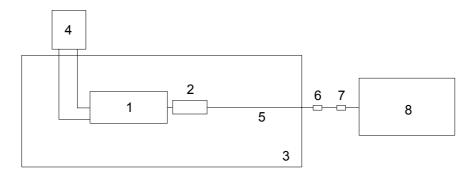


Figure 1: Measurement setup for testing on antenna connector

Test equipment used (see equipment list for details): 02, 18, 51, 69, 70, 71

5.1.2. Radiated Maximum Transmitter Power

Radiated Maximum Transmitter Power was measured with detector-function of the spectrum analyzer set to positive peak and trace mode max hold: RBW = 100 kHz, VBW = 100 kHz, span = 1 MHz, sweep = 15 s

For measurement setup and procedure see section 6.2



5.2. Mean power of emissions 30 MHz - 8.2GHz (§ 74.861.e.6.iii)

Rules and Specifications:	Sections 2.1053		
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.11		
Test Conditions:	As indicated below		

Measurement Procedure:

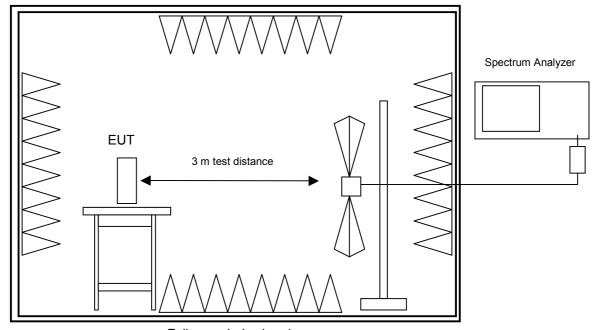
Radiated emissions were measured over the frequency range from 30 MHz to 1 GHz. For final testing the detector-function of the spectrum analyzer was set to positive peak and trace mode max hold:

RBW = 3 kHz, VBW = 10 kHz, span = 20 kHz, sweep = 10 s

Measurements were made in both the horizontal and vertical planes of polarization.

Preliminary scans were taken in a semi-anechoic room using a spectrum analyzer with the detector function set to peak and resolution bandwidth set to 100 kHz. All tests were performed at a test-distance of 3 meters. Hand-held or body-worn devices are rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit and therefore shall be used for final testing. For final testing an open-area test-site was used. During the tests the EUT was rotated all around and the receiving-antenna was raised and lowered from 1 meter to 4 meters to find the maximum levels of emissions. The cables and equipment were placed and moved within the range of position likely to find their maximum emissions.

Final testing was performed referring to substitution method as described in TIA/EIA-603, section 2.2.12 ("Radiated Spurious Emissions").



Fully anechoic chamber

Test equipment used (see equipment list for details): 01, 06, 12, 15, 38, 39, 40, 41, 55, 58, 61, 64, 66



5.3. Radiated Emission 1 GHz - 8.2 GHz (§ 74.861.e.6.iii)

Rules and Specifications:	Sections 2.1053	
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.11	
Test Conditions:	As indicated below	

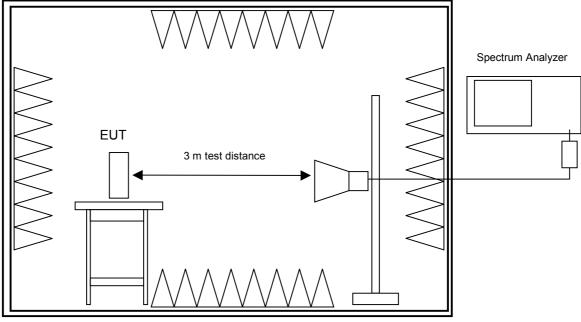
Measurement Procedure:

Radiated emissions are measured in the frequency range 1 GHz to 2.5 GHz. Resolution and video bandwidth of the spectrum analyzer are set to 1 MHz. Hand-held or body-worn devices are rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit and therefore shall be used for final testing. Additional measurements are performed at critical frequencies with reduced span.

EUT is rotated all around and receiving antenna is raised and lowered to find the maximum levels of emission. The cables and equipment are placed and moved within the range of position likely to find their maximum emissions.

All tests are performed in a fully-anechoic chamber with a test-distance of 3 meters.

If required preamplifiers are used for the whole frequency range. Special care is taken to avoid overload in transmit mode (using appropriate attenuators and filters if necessary).



Fully anechoic chamber

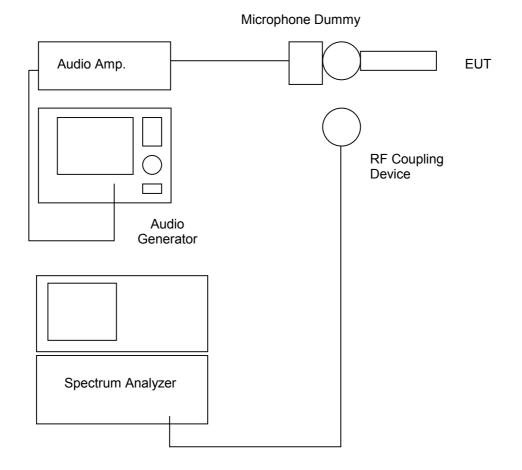
Test equipment used (see equipment list for details): 02, 13, 14, 16, ,42, 44, 45, 57, 64



5.4. Emission Masks (Occupied Bandwidth) § 2.1049 (c) (1)

Rules and Specifications:	Sections 2.1049 (c) (1),		
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.11		
Test Conditions:	As indicated below		
Measurement Procedure:	The EUT and equipment were set up as shown below		
	The audio signal was adjusted for 16 dB above 50 % of nominal modulation at the frequency of maximum response.		
	The occupied bandwidth was measured with the Spectrum Analyzer set as shown on the test charts.		

Test Setup

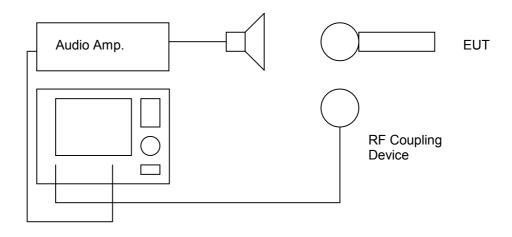




5.5. Audio Frequency Response, 2.1047 (a)

Rules and Specifications:	Sections 2.1047 (b),		
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.3		
Test Conditions:	As indicated below		
Measurement Procedure:	The audio signal was coupled to the microphone via a calibrated loudspeker.		
	5. The audio signal was adjusted for 20 % nominal modulation at 1 kHz. this was taken as 0 dB reference.		
	6. With input levels held constant, the audiosignal was varied from 100 Hz to 30 kHz		
	The response was measured and recorded with a CMS 54 Radiocommunication Tester		

Test Setup

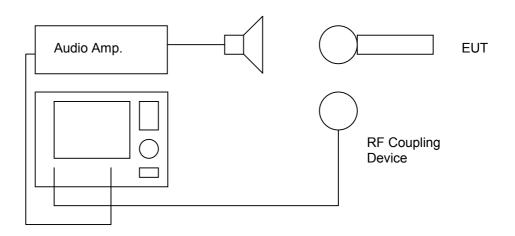




5.6. Modulation Limiting, § 2.1047 (b)

Rules and Specifications:	Sections 2.1047 (b),		
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.3		
Test Conditions:	As indicated below		
Measurement Procedure:	The audio signal was coupled to the microphone via a calibrated loudspeker.		
	 The modulation response was measured for three frequencies including the frequency with maximum response found during "Audio Frequency Response Test". 		
	10. The input level was varied from 30 % modulation to 20 dB higher than the saturation point. The resulting deviation was measured with a CMS 54 Radiocommunication Tester.		
	11. Measurements were performed for positive and negative deviation.		

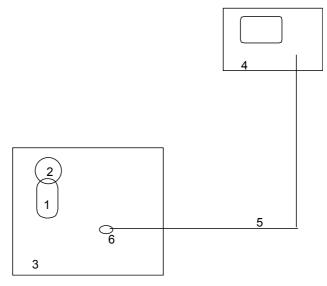
Test Setup





5.7. Frequency Stability (Temperature Variation), § 2.1055 (a) (1)

Rules and Specifications:	Sections 2.1055 (a) (1), 74.861 (e) (4)		
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.2		
Test Conditions:	As indicated below		
Measurement Procedure:	12.The EUT and test equipment were set up as shown below		
	13. With all power removed, the temperatuere was decreased to -30 °C and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was noted within one minute.		
	14. With power OFF, the temperature was raised in 10 °C steps. The sample was permitted to stabilize at each step for at least half of an hour. Power was applied and the maximum frequency change was noted within one minute.		
	15. The temperature test were performed for worst case conditions.		



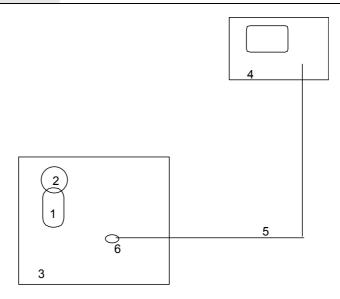
- 1 Base unit (EUT)
- 2 RF-antenna (EÚT)
- 3 Temperature test chamber
- 4 Spectrum analyzer
- 5 RF cable
- 6 Test probe

Test equipment used (see equipment list for details): 02, 54, 55



5.8. Frequency Stability (Voltage Variation), § 2.1055 (b) (1)

Rules and Specifications:	Sections 2.1055 (b) (1), 74.861 (e) (4)		
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.2		
Test Conditions:	As indicated below		
Measurement Procedure:	16.The EUT and test equipment were set up as shown below		
	17.The temperature was set to 20 °C		
	18. The supply voltage was varied from 85% to 115% of the nominal voltage measuured at the input of the EUT.		
	19. The variation in frequency was measured for worst case conditions.		



- 1 Base unit (EUT)
- 2 RF-antenna (EÚT)
- 3 Temperature test chamber
- 4 Spectrum analyzer
- 5 RF cable
- 6 Test probe

Test equipment used (see equipment list for details): 02, 54, 55



6. Equipment List

To facilitate reference to test equipment used for related tests, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory.

No.	Туре	Model	Serial Number	Manufacturer
01	Spectrum Analyzer	R 3271	05050023	Advantest
02	EMI Test Receiver	ESMI	839379/013 839587/006	Rohde & Schwarz
03	Test Receiver	ESH 3	880112/032	Rohde & Schwarz
04	Test Receiver	ESHS 10	860043/016	Rohde & Schwarz
05	Test Receiver	ESV	881414/009	Rohde & Schwarz
06	Test Receiver	ESVP	881120/024	Rohde & Schwarz
07	Audio Analyzer	UPA	862954	Rohde & Schwarz
08	Power Meter	NRVS	836856/015	Rohde & Schwarz
09	Power Sensor	NRV-Z52	837901/030	Rohde & Schwarz
10	Power Sensor	NRV-Z4	863828/015	Rohde & Schwarz
11	Preamplifier	ESV-Z3	860907/004	Rohde & Schwarz
12	Preamplifier	R14601		Advantest
13	Preamplifier	ACX/080-3030	32640	CTT
14	Preamplifier	ACO/180-3530	32641	CTT
15	Signal Generator	SMS	872166/039	Rohde & Schwarz
16	Signal Generator	HP 8673 D	2930A00966	Hewlett Packard
17	Waveform Generator	HP 33120 A	US34005375	Hewlett Packard
18	Attenuator 20 dB	4776-20	9503	Narda
19	Attenuator 10 dB	4776-10	9412	Narda
20	Pulse Limiter	ESH 3-Z2	1144	Rohde & Schwarz
21	Pulse Limiter	11947 A	3107A00566	Hewlett Packard
22	V-Network	ESH 3-Z5	862770/018	Rohde & Schwarz
23	V-Network	ESH 3-Z5	894785/005	Rohde & Schwarz
24	V-Network	ESH 3-Z5	830952/025	Rohde & Schwarz
25	V-Network	ESH 3-Z6	830722/010	Rohde & Schwarz
26	V-Network	NSLK 8127	8127152	Schwarzbeck
27	V-Network	NNLA 8119	8119148	Schwarzbeck
28	V-Network	SE 01	01	Senton
29	T-Network	ESH 3-Z4	890602/011	Rohde & Schwarz
30	T-Network	ESH 3-Z4	890602/012	Rohde & Schwarz
31	High Impedance Probe	TK 9416	01	Schwarzbeck
32	High Impedance Probe	TK 9416	02	Schwarzbeck
33	Current Probe	ESH 2-Z1	863366/18	Rohde & Schwarz
34	Current Probe	ESV-Z1	862553/3	Rohde & Schwarz



No.	Туре	Model	Serial Number	Manufacturer
35	Absorbing Clamp	MDS 21	80911	Lüthi
36	Absorbing Clamp	MDS 21	79690	Lüthi
37	Loop Antenna	HFH2-Z2	882964/1	Rohde & Schwarz
38	Biconical Antenna	HK 116	842204/001	Rohde & Schwarz
39	Biconical Antenna	HK 116	836239/02	Rohde & Schwarz
40	Log. Periodic Antenna	HL 223	841516/023	Rohde & Schwarz
41	Log. Periodic Antenna	HL 223	834408/12	Rohde & Schwarz
42	Horn Antenna	3115	9508-4553	Emco
43	Horn Antenna	3160-03	9112-1003	Emco
44	Horn Antenna	3160-04	9112-1001	Emco
45	Horn Antenna	3160-05	9112-1001	Emco
46	Horn Antenna	3160-06	9112-1001	Emco
47	Horn Antenna	3160-07	9112-1008	Emco
48	Horn Antenna	3160-08	9112-1002	Emco
49	Horn Antenna	3160-09	9403-1025	Emco
50	Digital multimeter	199	463386	Keithley
51	DC Power Supply	NGSM 32/10	203	Rohde & Schwarz
52	DC Power Supply	NGB	2455	Rohde & Schwarz
53	DC Power Supply	NGA	386	Rohde & Schwarz
54	Temperature Test Chamber	HT4010	07065550	Heraeus
55	Cable	RG214	1309	Senton
56	Cable	200CM_001	1357	Rosenberger
57	Cable	150CM_001	1479	Rosenberger
58	Cable Set EG1	RG214	1189 - 1191	Senton
59	Cable Set Cabine 1	RG214		Senton
60	Cable Set Cabine 2	RG214		Senton
61	Cable Set Cabine 3	RG214		Senton
62	Shielded Room	No. 1	1451	Senton
63	Shielded Room	No. 2	1452	Senton
64	Semi-anechoic Chamber	No. 3	1453	Siemens
65	Shielded Room	No. 4	1454	Euroshield
66	Open Area Test Site	EG 1		Senton
67	Test fixture			Senton



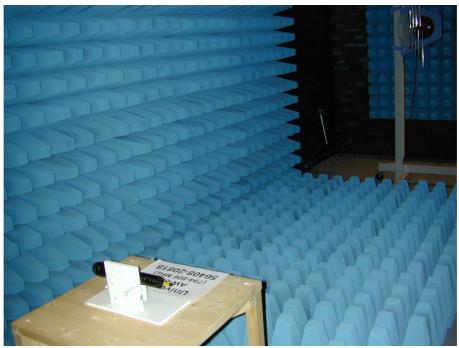
7. Photographs Taken During Testing



Photos No. 7.1 - 7.2

Test setup for radiated emission measurement 30 MHz – 8 GHz (fully anechoic room)







Photos No. 7.3 - 7.4

Test setup for audio frequency response measurement





8. List of Measurements

FCC Part 15 Subpart H							
Section(s):	Test	Page(s)	Result				
	Transmit mode (TX):						
§ 74.861.e.1	Measured unmodulated carrier power		Passed				
§ 74.861.e.5	Operating bandwidth		Passed				
§ 74.861.e.6	Mean power of emissions 30 MHz - 1 GHz		Passed				
§ 74.861.e.6	Mean power of emissions 1 GHz - 2.5 GHz		Passed				
§ 74.861.e.4	Frequency tolerance		Passed				



Carrier Power Measurement

Rules and Specifications:	2.1046 (a), 74.861 (e) (1)
Guide:	ANSI/TIA/EIA-603-1992, § 2.2.1

Test Site:

Distance:

Date of Test:

Open Field Test Site / Semianechoic Chamber

3 Meter

21 February 2003

Frequency (MHz)	Detector	Antenna Polarization	Analyzer Reading (dBm)	Correction Factor (dB)	Mean Power (dBm)	Limit (dBm)	Margin (dB)
794.300	AV	Vertical	-38.16	35.74	-2.42	17.0	19.42
799.600	AV	Vertical	-38	35.7	-2.3	17.0	19.3
804.300	AV	Vertical	-38	35.8	-2.2	17.0	19.2

^{*** =} No emissions above noise floor detected

Sample calculation of erp values:

Mean Power (dBm) = Analyzer Reading (dBm) + Correction Factor (dB)

Test equipment used (see equipment list for details): 02, 13, 14, 16, 38, 40, 42, 57, 64, 67



Spurious Radiation Measurement 30 MHz – 8GHz

Rules and Specifications:	2.1053 (a), 74.861 (e) (6) (iii)
Guide:	ANSI/TIA/EIA-603-1992, § 2.2.12
Limit:	74.861 (e) (6) (iii)

Tested Frequency: 794.300 MHz

Test Site: Fully anechoic chamber

Distance: 3 Meter

Frequency (MHz)	Detector	Antenna Polarization	Analyzer Reading (dBm)	Correction Factor (dB)	Mean Power (dBm)	Limit (dBm)	Margin (dB)
25-8200	AV	Hor/Ver	***				

^{*** =} No emissions above noise floor detected

Sample calculation of erp values:

Mean Power (dBm) = Analyzer Reading (dBm) + Correction Factor (dB)

Test equipment used (see equipment list for details): 02, 13, 14, 16, 38, 40, 42, 57, 64, 67



Spurious Radiation Measurement 30 MHz - 1GHz

Rules and Specifications:	2.1053 (a), 74.861 (e) (6) (iii)
Guide:	ANSI/TIA/EIA-603-1992, § 2.2.12
Limit:	74.861 (e) (6) (iii)

Tested Frequency:	799.600 MHz
Test Site:	Fully anechoic chamber
Distance:	3 Meter

Frequency	Detector	Antenna	Analyzer	Correction	Mean Power	Limit (dBm)	Margin (dB)
(MHz)		Polarization	Reading	Factor (dB)	(dBm)		
			(dBm)				
25-8200	AV	Hor/Ver	***				

^{*** =} No emissions above noise floor detected

Sample calculation of erp values:

Mean Power (dBm) = Analyzer Reading (dBm) + Correction Factor (dB)

Test equipment used (see equipment list for details): 02, 13, 14, 16, 38, 40, 42, 57, 64, 67



Spurious Radiation Measurement 30 MHz – 8GHz

Rules and Specifications:	2.1053 (a), 74.861 (e) (6) (iii)
Guide:	ANSI/TIA/EIA-603-1992, § 2.2.12
Limit:	74.861 (e) (6) (iii)

Tested Frequency:	804.300 MHz
Test Site:	Fully anechoic chamber
Distance:	3 Meter

Frequency (MHz)	Detector	Antenna Polarization	Analyzer Reading (dBm)	Correction Factor (dB)	Mean Power (dBm)	Limit (dBm)	Margin (dB)
25-8200	AV	Hor/Ver	***				

^{*** =} No emissions above noise floor detected

Sample calculation of erp values:

Mean Power (dBm) = Analyzer Reading (dBm) + Correction Factor (dB)

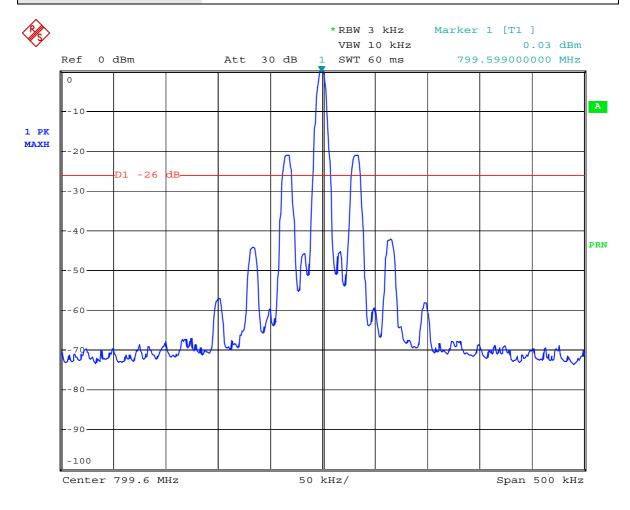
Test equipment used (see equipment list for details): 02, 13, 14, 16, 38, 40, 42, 57, 64, 67



Measurement of Emission Masks (Occupied Bandwidth

Rules and Specifications:	Sections 2.1049 (c) (1) and 74.861
Limits and Requirements:	ANSI TIA/EIA-603-1992
Nominal Frequency of EUT:	799.600 MHz

Test Procedure:	According to TIA/EIA.603-1992, § 2.2.11
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Comment A: UN20818 Occupied Bandwidth, no modulation Date: 22.FEB.2003 12:51:18



Measurement of Emission Masks (Occupied Bandwidth

Rules and Specifications:

Limits and Requirements:

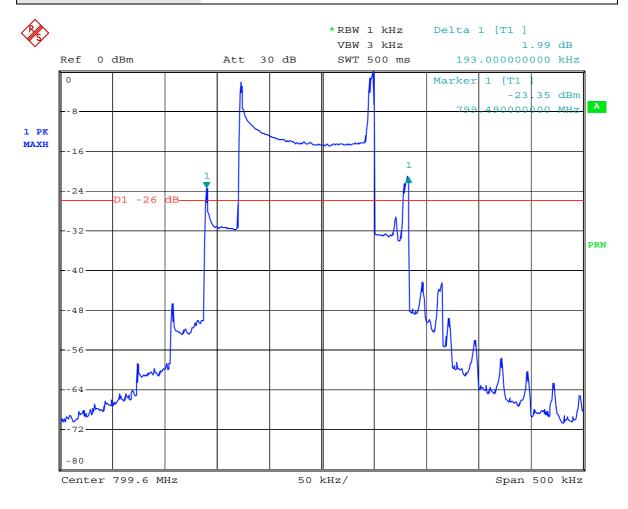
Nominal Frequency of EUT:

Sections 2.1049 (c) (1) and 74.861

ANSI TIA/EIA-603-1992

799.600 MHz

Test Procedure: According to TIA/EIA.603-1992, § 2.2.11



Comment A: UN20818 Occupied Bandwidth, 100 Hz modulation Date: 22.FEB.2003 12:55:49

Test Results:	Attached		
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Measurement of Emission Masks (Occupied Bandwidth

Rules and Specifications:

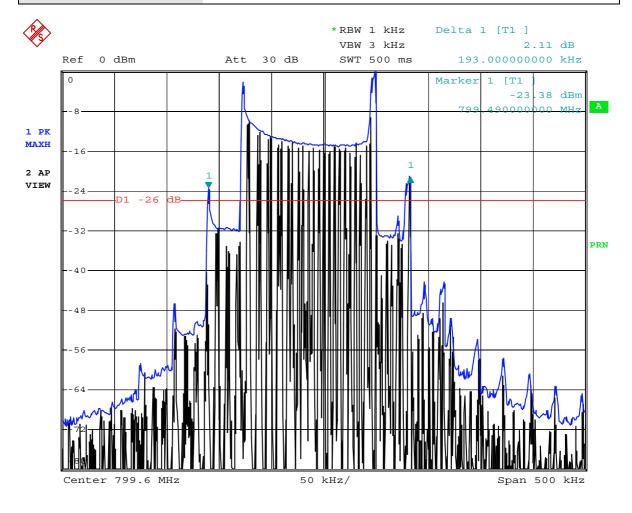
Limits and Requirements:

Nominal Frequency of EUT:

Sections 2.1049 (c) (1) and 74.861

ANSI TIA/EIA-603-1992

799.600 MHz



Comment A: UN20818 Occupied Bandwidth, 3 kHz modulation Date: 22.FEB.2003 12:58:08

Test Results:	Attached		
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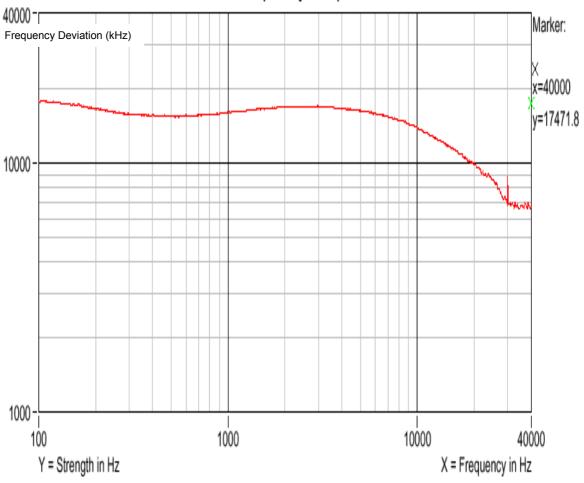


Measurement of Audio Frequency Response

Rules and Specifications:	Sections 2.1047 (a) and 74.861
Limits and Requirements:	ANSI TIA/EIA-603-1992
Nominal Frequency of EUT:	799.600 MHz

Test Procedure:	According to TIA/EIA.603-1992, § 2.2.6
	Note: The audio signal was coupled to the microphone inputof the transmitter via an audio isolation transformer

Audio Frequency Response



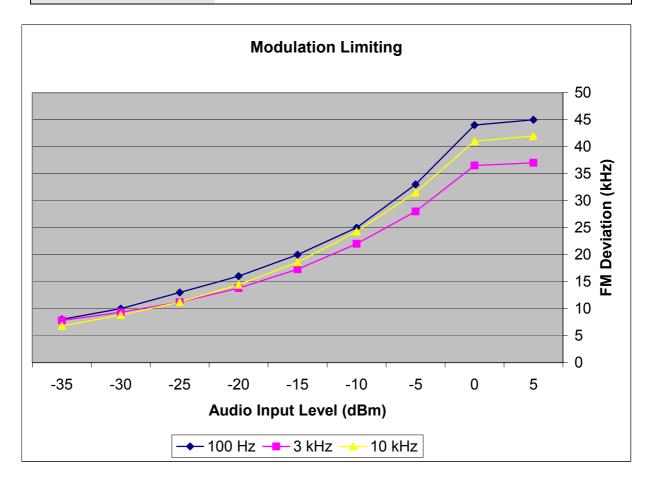
Test Results: See graph above



Measurement of Modulation Limiting

Rules and Specifications:	Sections 2.1047 (b) and 74.861
Limits and Requirements:	ANSI TIA/EIA-603-1992
Nominal Frequency of EUT:	799,600 MHz

Test Procedure:	According to TIA/EIA.603-1992, § 2.2.3
	Note: The audio signal was coupled to the microphone input of the transmitter via a direct connection



Test Results:	Pass	



Type of Emission

Rules and Specifications:	Sections 2.1047 and 74.861
Limits and Requirements:	ANSI TIA/EIA-603-1992
Nominal Frequency of EUT:	799,600 MHz

Bn = 2M + 2DK
M =10 kHz
D =40 kHz
K =1
Bn = 2(10 kHz) + 2(40 kHz) = 20 + 80 = 100 kHz

Type of Emission = 100KF3E



Measurement of Frequency Stability vs Temperature

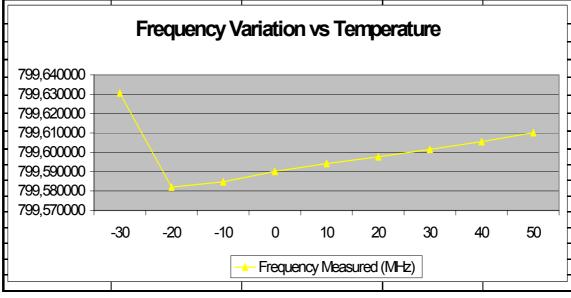
Rules and Specifications: Section 74.861 (e) (4), 2.1055

Limits and Requirements: The frequency tolerance of the transmitter shall be 0.005 %

Nominal Frequency of EUT: 799.600 MHz

Temperature Variation Table

Temperature (°C)	Nominal Frequency (MHz)	Frequency Measured (MHz)	Frequency Tolerance (ppm)	Limit (ppm)
-30	799,600000	799,630592	38,26	50
-20	799,600000	799,582102	-22,38	50
-10	799,600000	799,584734	-19,09	50
0	799,600000	799,590086	-12,40	50
10	799,600000	799,594206	-7,25	50
20	799,600000	799,597716	-2,86	50
30	799,600000	799,601592	1,99	50
40	799,600000	799,605506	6,89	50
50	799,600000	799,610154	12,70	50
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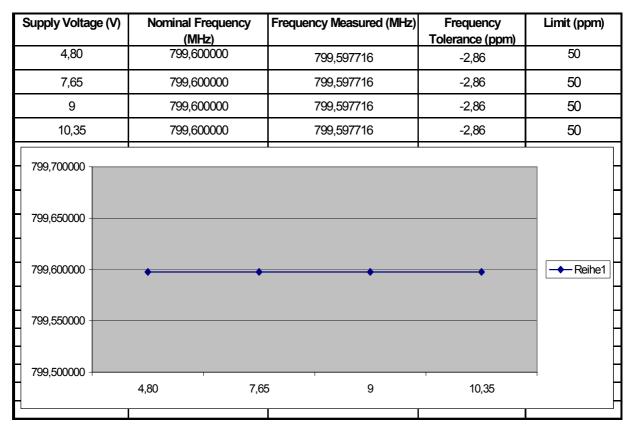




Measurement of Frequency Stability vs Supply Voltage

Rules and Specifications:	Sections 74.861 (e) (4), 2.1055 (d)				
Limits and Requirements:	The frequency tolerance of the transmitter shall be 0.005 %				
Nominal Frequency of EUT:	799.600 MHz				
Battery end-point:	4.80 V				

Voltage Variation Table





8. Referenced Regulations

All tests were performed with reference to the following regulations and standards:

FCC Part 2	Code of Federal Regulations Part 2 Frequency allocationand radio treaty matters; General rules and regulations	October 01, 1999
FCC Part 15 Subpart A	Code of Regulations Part 15 (Radio Frequency Devices), Subpart A (General) of the Federal Communication Commission (FCC)	October 20, 1997
FCC Part 15 Subpart B	Code of Regulations Part 15 (Radio Frequency Devices), Subpart B (Unintentional Radiators) of the Federal Communication Commission (FCC)	October 20, 1997
FCC Part 15 Subpart C	Code of Regulations Part 15 (Radio Frequency Devices), Subpart C (Intentional Radiators) of the Federal Communication Commission (FCC)	October 20, 1997
FCC Part 74 Subpart H	Code of Regulations Part 15 (Radio Frequency Devices), Subpart H (Low Power Auxiliary Stations) of the Federal Communication Commission (FCC)	October 20, 1997
ANSI C63.4	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz - 40 GHz	October, 1992
RSS-210	Radio Standards Specification RSS-210 Issue 2 for Low Power Licence-Exempt Radiocommuniction Devices of Industry Canada	February 24, 1996



10. Charts taken during testing

Radiated Power Test 25 MHz - 200 MHz acc. to FCC Part 74 Subpart H

Model: AW-8H					Comme		odulat	ion			
Serial no.: Sample 3					TX frequency 804.300 MHz						
Applicant: SEKAKU Ele	ektron Industry C	Co. Ltd.									
Test site: Fully anecho											
Tested on:	100111										
Test distance Horizontal Po											
Date of test: 02/22/2003		Operator: J. Roidt									
Test performed: automatically	Test performed: File name:										
Detector: Peak	Detector:					List of values: 10 dB Margin 50 Subranges					
dBm 0					Limit	1: FCC	§74.	861 Transducer	: Substitu	ıtion (H)	
	1			1							
-10		1 14 1	, , , , , , , , , , , , , , , , , , , ,			·					
-20		1 1				·					
-20	1	1 1 1	1 1 1	1	1						
-30			, L ,			·					
-40	1 1 1	1	· ·	1							
-40	1	1 1 1	· · · · ·	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1						
-50		· 	' ' '	· · ·		'_					
-60	1	1	· ·	1							
-00											
-70		1 1 1	 			·					
-80		1 1 1		1 1 1	1 1 1						
	1	1	1	1							
-90	· · · · · · · · · · · · · · · · · · ·	; , , , , , , ,	; !~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~	; , , , , , ,		~~~~~	ment of the second seco	www.man		
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25	4	.0 5	0 6	50 7	70 8	0 9	0 10	00		200 MH:	
Result: Limit kept					Project file: 56408-20818 Page of Pages						

Radiated Power Test 25 MHz - 200 MHz acc. to FCC Part 74 Subpart H

Mode	l:					Comme	ent:					
AW-8H						- Without modulation						
Serial no.: Sample 3						TX frequency 804.300 MHz						
Applic		ron Industry (o I td									
Test		Ton maddily C	o. Liu.									
	anechoic	room										
Teste	d on: distance 3	motors										
	ical Polariz											
	of test:		Operator:									
	2/2003 performed:		J. Roidt File name:									
	matically		default.emi									
Detec	tor:					List of v	alues:					
Peal	<					10 dB	Margi	n		50 Sub	ranges	
dBm 0						Limit	1: FCC	§74.	861	Transduce	r: Substit	ution (V)
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-10												
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				1	1 1	1						
-70	:-				 		:	}				
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-80						1 1 =						
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2	5	4	0 5	50 6	60 7	70 8	80 9	0 10	00			200 MHz
Resul	t: t kept					Project 56408	file: 3-20818	8		Page	of	Pages

Applic SEK.	8H no.: ple 3 sant: AKU Elektron Industry ite: r anechoic room	[,] Co. Ltd.		Comment: - Without mod TX frequency		MHz			
Test	distance 3 meters cal Polarization								
Test p	of test: 2/2003 performed: matically	Operator: J. Roidt File name: default.emi							
Detect Peak				List of values: 10 dB Margin		50 Su	ıbranges	,	
dBm 0				Limit1: FCC §	§74.861	Transduc	er: Subs	stitution	ı (V)
-10									
-20						1 1 1 1 1			
-30								· · · · · · · · · · · · · · · · · · ·	
-40								1 1 1	
-50 -60									
70			· · · · · · · · · · · · · · · · · · ·			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1 1 1	
-80	Manharan Jaman Managaran da	Newlands	ph/vh.H-voyd/habl-v-v-v-deeveckelease	1947-1949 114 114 114 114 114 114 114 114 114	nd katelinder lägt vije ligt en lägdet film	Population displacing the displacement	A STANFARENCE MANAGEMENT		sopr ipping
-90	Mmhhhan maral Marillan 1940	of the state of th							
-100 20)0	300	400	500	600	700	800	900	1000
Result			400	Project file: 56408-20818		Pag			MHz

Model				Comment: - Without mod	dulation				
Serial Sam	no.: ple 3			TX frequency	794.300 ľ	MHz			
Applic SEK	cant: AKU Elektron Industry	Co. Ltd.							
Test s Fully	site: v anechoic room								
Teste	d on:								
	distance 3 meters zontal Polarization								
	of test:	Operator:							
	2/2003	J. Roidt							
1	performed:	File name:							
	matically	default.emi							
Detec Peak				List of values: 10 dB Margin		50 Su	ıbranges		
dBm				Limit1: FCC {	§74.861	Transduc	er: Subs	titution	ı (H)
0		1	1	1	1	1	1	1	
		1		1	1	1	1	1	
-10						1	, \\	1 1 2 2	
		1		1	1	1		1	
		1		1	1	1		1	
-20									
		1	1	1	1	1	1	1	-
		1		1	1	1	1	1	
-30						1	:		
		1	:	1	1	1	1	1	
40		1		1	1	1	1	1	
-40								,	
		1	:	1	1	1	1	1	
-50						1 1 1 1 1			
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		1	:	1	1	1	1	1	
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		1		1	1	1	1	1	
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-70					;	:			
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		المراسيان المسادرات المسادرات	44-7444/AMILLANKA MIKA BARA BARA						
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	Mayayahaman Mayayahama								
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-100					<u>'</u>	<u>'</u>	<u>`</u>		
20	00	300	400	500	600	700	800	900	1000 MHz
Resul Limit	t: t kept			Project file: 56408-20818		Pag	ge of	P	ages

Model: AW-8H	
Serial no.: Sample 3	
Applicant: SEKAKU Elektron Industry	Co. Ltd.
Test site: Fully anechoic room	
Tested on: Test distance 1 metre Horizontal Polarization	
Date of test: 02/22/2003	Operator: J. Roidt
Test performed: automatically	File name: default.emi

Limit kept

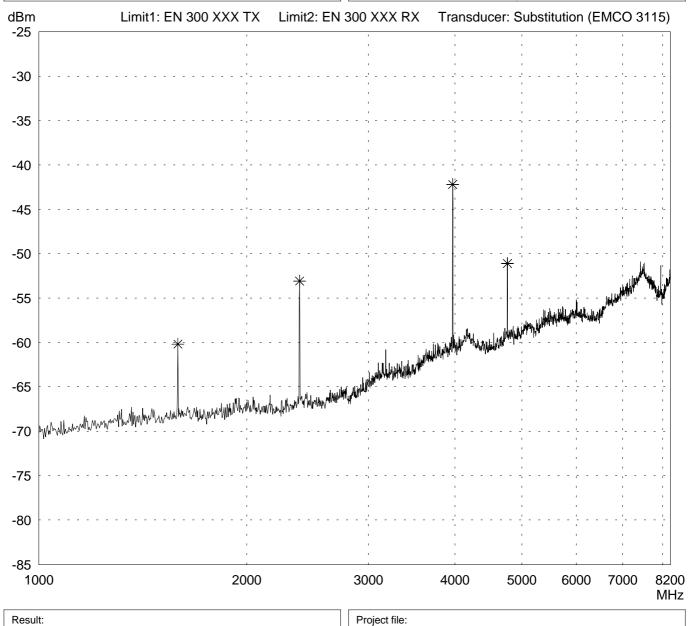
Comment:
- Without modulation

TX frequency 794.300 MHz

Detector:

Peak

List of values:
Selected by hand



56408-20818

Page

of

Model:	
AW-8H	
Serial no.:	
Sample 3	
Applicant:	
SEKAKU Elektron Industry	Co. Ltd.
Test site:	
Fully anechoic room	
Tested on:	
Test distance 1 metre Horizontal Polarization	
Date of test:	Operator:
02/23/2003	J. Roidt
Test performed:	File name:
automatically	default.emi

Limit kept

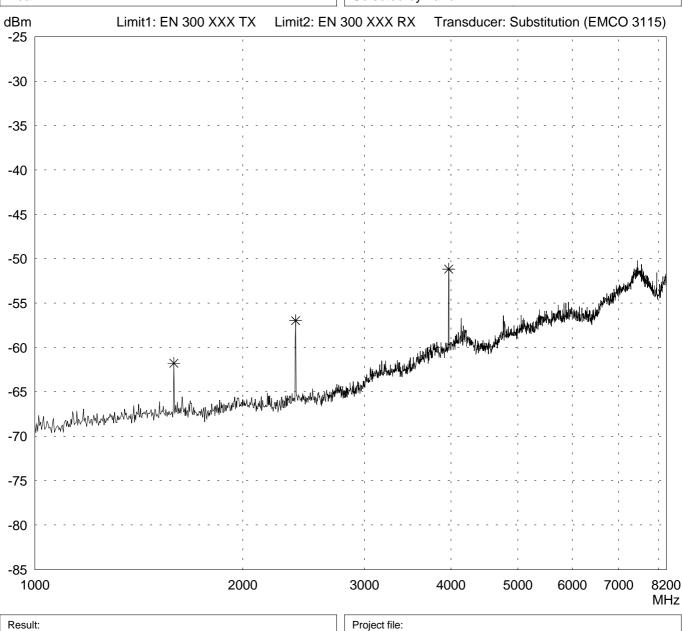
Comment:

- no modulation
- TX frequency 794.300 MHz

Detector:

Peak

List of values:
Selected by hand



56408-20818

Page

of

Mode AW-						Comme		odulation			
Serial Sam	no.: iple 3							y 799.600) MHz		
Applic	cant:	ctron Industry (Co. Ltd.								
Test s	site:		JO. LIU.								
Fully	/ anechoid	croom									
Test	distance ical Polari										
	of test: 2/2003		Operator: J. Roidt								
1	performed: matically		File name: default.emi								
Detec	ctor:					List of v	alues: Margi	n	50 Subrar	nges	
dBm 0						Limit	1: FCC	§74.861	Transducer: S	Substitut	ion (V)
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-100			10	-0	20 -	70 -		0.400			
2	25		40 5	50 6	60 7	70 8	30 9	0 100			200 MHz
Resul Limit	t: t kept					Project 56408	file: 3-2081	8	Page	of	Pages

Model						Comme		odulat	tion			
Serial									.600 MHz			
Applic	ple 3					17/110	quone	, , , , , , , , , , , , , , , , , , ,	.000 1011 12			
SEK	AKU Elel	ktron Industry	Co. Ltd.									
Test s Fully	site: / anechoi	c room										
	distance	3 meters larization										
	of test: 2/2003		Operator: J. Roidt									
1	erformed: matically		File name: default.emi									
Detect Peal						List of v	alues: Margi	in		50 Subrar	nges	
dBm 0		T.	1	1	1	Limit	1: FC0	§74.	861 Tra	insducer: S	Substitu	tion (H)
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Resul						Project		•				
Limi	t kept					56408	3-2081	8		Page	of	Pages

Model				Comment: - Without mod	dulation				
Serial	no.:					4 Ll=			
	ple 3			TX frequency	799.600 1	VIIIZ			
	AKU Elektron Industry	Co. Ltd.							
	anechoic room								
	d on: distance 3 meters zontal Polarization								
	of test: 2/2003	Operator: J. Roidt							
1	performed: matically	File name: default.emi							
Detec Peak				List of values: 10 dB Margin		50 Su	ıbranges		
dBm 0				Limit1: FCC	§74.861	Transduc	er: Subs	titution	(H)
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20	00	300	400	500	600	700	800	900	1000 MHz
Resul	t: t kept			Project file: 56408-20818		Pag	ge of	f P	ages

Model				Comment: - Without modu	ulation				
Serial Sam	no.: ple 3			TX frequency 7	799.600 I	ИНz			
	AKU Elektron Industry	Co. Ltd.							
Test s Fully	ite: anechoic room								
Teste	d on:								
	distance 3 meters cal Polarization								
	of test: 2/2003	Operator: J. Roidt							
	performed:	File name:							
1	matically	default.emi							
Detec Peak				List of values: 10 dB Margin		50 Su	branges		
dBm				Limit1: FCC §	74.861	Transduc			 า (V)
0		1	1	1	1	1	1		
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-10									
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-20								,	
		1	1	1	1	1		1	
-30									
		1	1	1	1	1		1	
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-100		1	1	1	1	1	1		
20	00	300	400	500	600	700	800	900	1000 MHz
Result Limit	t: t kept			Project file: 56408-20818		Pag	je of	f F	ages

Model:	
AW-8H	
Serial no.:	
Sample 3	
Applicant:	
SEKAKU Elektron Industry	Co. Ltd.
Test site:	
Fully anechoic room	
Tested on:	
Test distance 1 metre Horizontal Polarization	
Date of test:	Operator:
02/23/2003	J. Roidt
Test performed:	File name:
automatically	default.emi
·	

Limit kept

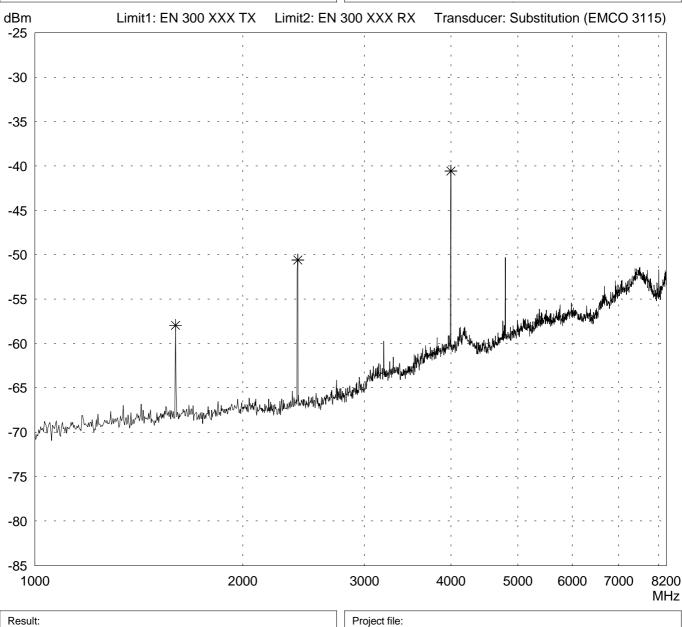
Comment:

- no modulation
- TX frequency 794.300 MHz

Detector:

Peak

List of values:
Selected by hand



56408-20818

Page

of

Model:	
AW-8H	
Serial no.:	
Sample 3	
Applicant:	
SEKAKU Elektron Industry	/ Co. Ltd.
Test site:	
Fully anechoic room	
Tested on:	
Test distance 1 metre Horizontal Polarization	
Date of test:	Operator:
02/23/2003	J. Roidt
Test performed:	File name:
automatically	default.emi
_	

Limit kept

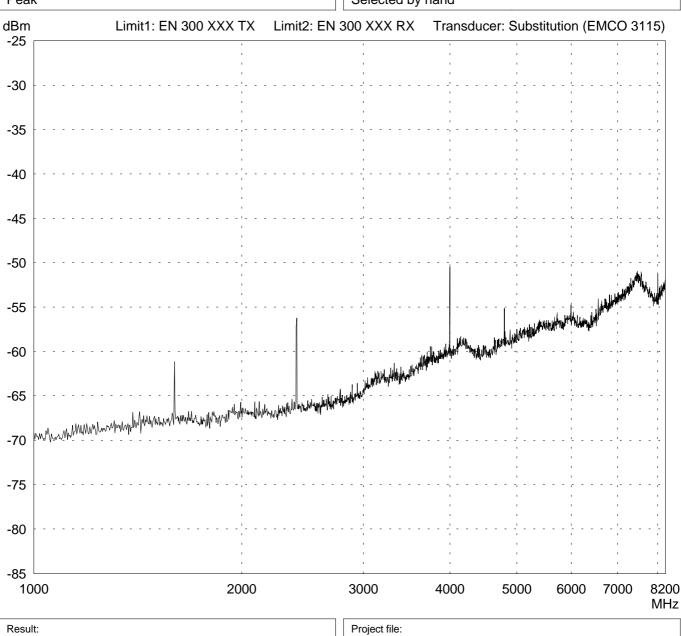
Comment:

- no modulation
- TX frequency 794.300 MHz

Detector:

Peak

List of values:
Selected by hand



56408-20818

Page

of

Model					Comn		nodulation		
Serial Sam	no.: ple 3				TX f	requer	ncy 804.300) MHz	
Applic	cant: AKU Elektron In	dustrv Co. Ltd.							
Test s									
Teste	d on:								
	distance 3 mete ical Polarization	ers							
	of test: 2/2003	Operator: J. Roidt							
1	performed: matically	File name default.							
Detec Peak	etor:					values:		50 Subra	nges
dBm 0					Lim	it1: FC	CC §74.861	Transducer:	Substitution (V)
J						1			
-10				1 - 1		- (
	1	1		1 1		1	1 1		
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-90						~~~M	- Minimanian	Jammannon James	
		~^^;·				1	1 1	1. L. A. A. M. W.	VANY
-100 2	5	40	50	60	70	80	90 100		200
Resul	t:				Projec				MH
1	t kept)8-208	18	Page	of Pages

Model: AW-8H	I					ment:	modul	ation			
Serial no.)4.300 N	ИНz		
Applicant SEKAK	: (U Elektron Indu	ıstry Co. Ltd.									
Test site: Fully a	nechoic room										
	^{n:} stance 3 meters ntal Polarization										
Date of to 02/22/2	est:	Operator J. Roio									
Test perfo		File nam default									
Detector: Peak						of values			50 Subra	anges	
dBm 0		1	1	1	Lin	nit1: F0	CC §7	4.861	Transducer:	Substitu	ution (H)
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-30											
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-80		1 1 1 1			1	1 - 1	1 -1				
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-100	:	1	1	1		1					
25		40	50	60	70	80	90	100			200 MH:
Result: Limit ke	ept					ect file: .08-208	318		Page	of	Pages

Model: AW-8H				Comment: - Without modulation						
Serial no.: Sample 3				TX frequency 804.300 MHz						
Applicant: SEKAKU Elektron Industry Co. Ltd.										
Test site: Fully anechoic room										
Tested	d on:									
	distance 3 meters cal Polarization									
Date o		Operator:								
	2/2003	J. Roidt								
1	erformed:	File name:								
	matically	default.emi								
Detect Peak				List of values: 10 dB Margin 50 Subranges						
dBm				Limit1: FCC §	74.861	Transduc	er: Subs	stitution	ı (V)	
0		1	1	1	1	1	1	1		
		1		1	1	1	1	1		
-10										
		1		1	1	1	*	1		
		,		1	1	1		,		
-20		;			;			;		
					1					
00										
-30										
		1	1	1	1	i i		1		
-40								,		
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-50					:					
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		1		1	1	1		1		
-60					1	т т		,		
		1		1	1	1		1		
-70										
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	1,21,21,21,21,21,21,21,21,21,21,21,21,21	1	1	1	1	1	1	1		
-100		<u> </u>	1	1	1	1	, , , , , , , , , , , , , , , , , , ,			
20	00	300	400	500	600	700	800	900	1000 MHz	
Result Limit	t: : kept			Project file: 56408-20818		Pag	je of	f F	ages	

Model: AW-8H				Comment: - Without modulation						
Serial no.: Sample 3				TX frequency 804.300 MHz						
Applicant: SEKAKU Elektron Industry Co. Ltd.										
Test site: Fully anechoic room										
Teste										
Test	distance 3 meters zontal Polarization									
	of test:	Operator:								
	2/2003	J. Roidt								
I	performed:	File name:								
	matically	default.emi								
Detect Peal				List of values: 10 dB Margin 50 Subranges						
dBm 0				Limit1: FCC	§74.861	Transduc	er: Subs	titution	(H)	
U		1	1	1	1	1	1	1		
		1			1	1	1	1		
-10										
		1	1	1	1	1	,	1		
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		1	1	1	1	1	,	1	\neg	
-30										
00		1			1	1		1		
40		1	1	1	1	1	1	1		
-40										
		1	1	1	1	1	1	1		
-50										
		1	1	1	1	1		1		
-60			·					,		
		0	1	1	1	1	1	1		
-70										
		0	1	1	1	1		1		
-80	MMal/www.hapharanlarman.ham		, ,	1	1			hankillari de la particio	Marine Marine	
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	00	300	400	500	600	700	800	900	1000 MHz	
Result: Limit kept				Project file: 56408-20818 Page of Pages						

Model:				
AW-8H				
Serial no.:				
Sample 3				
Applicant:				
SEKAKU Elektron Industry Co. Ltd.				
Test site:				
Fully anechoic room				
Tested on:				
Test distance 1 metre Horizontal Polarization				
Date of test:	Operator:			
02/23/2003	J. Roidt			
Test performed:	File name:			
automatically	default.emi			
·				

Limit kept

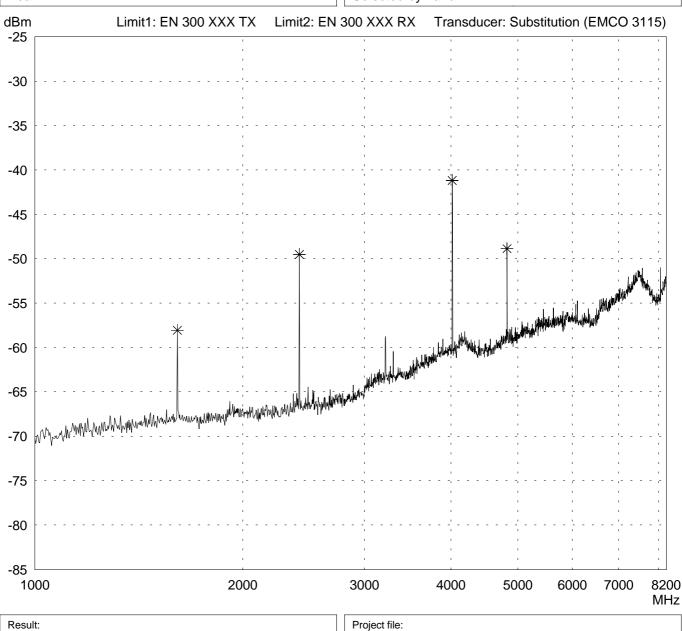
Comment:

- no modulation
- TX frequency 804.300 MHz

Detector:

Peak

List of values:
Selected by hand



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of

Model: AW-8H Serial no.: Sample 3 Applicant: SEKAKU Elektron Industry Co. Ltd. Test site: Fully anechoic room Tested on: Test distance 1 metre Vertical Polarization Date of test: Operator: 02/23/2003 J. Roidt Test performed: File name: default.emi automatically

Limit kept

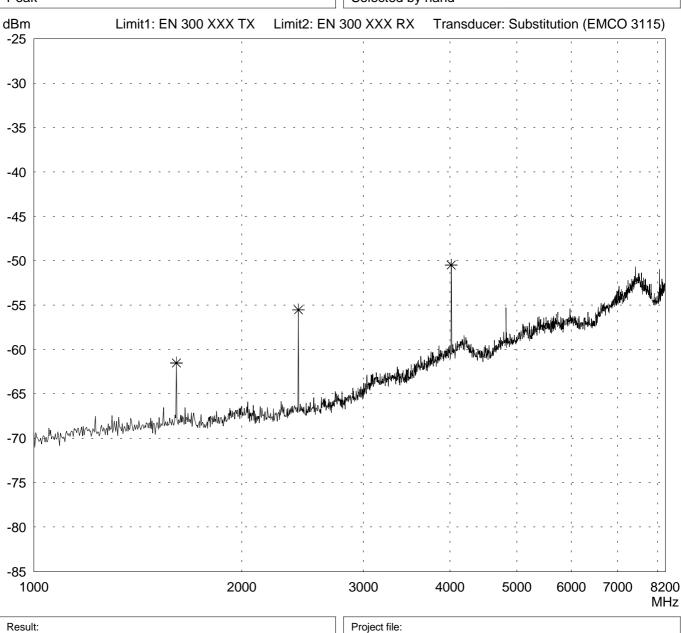
Comment:

- no modulation
- TX frequency 804.300 MHz

Detector:

Peak

List of values:
Selected by hand



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