

FCC PART 15 SUBPART B
CERTIFICATION REPORT for E-File

KENWOOD CORPORATION COMMUNICATION EQUIPMENT DIVISION

SCANNING RECEIVER

FCC ID : K4428451110

Report No.: Z02C-99246

Report Issue Date: September 16, 1999

ZACTA TECHNOLOGY CORPORATION
YONEZAWA TESTING CENTER

4149-7 Hachimanpara 5-chome
Yonezawa-shi Yamagata
992-1128 Japan

NVLAP[®]
Lab code : 200306-0

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CERTIFICATE COMPLIANCE

ZACTA TECHNOLOGY CORPORATION
YONEZAWA TESTING CENTER
4149-7 Hachimanpara 5-chome
Yonezawa-shi Yamagata 992-1128
Japan

This device was measured pursuant to ANSI C63.4-1992 by Zacta Technology Corporation. The data in this application complies with the applicable technical standards as indicated in the measurements report and FCC Part 15 Class B limits. The EUT complies with section 15.37 "Transition provision for compliance with the rules".

APPLICANT : KENWOOD CORPORATION COMMUNICATION EQUIPMENT
DIVISION
FCC ID : K4428451110
FCC RULE PART : FCC Part 15 Subpart B, Docket 87-389
EQUIPMENT CLASS : Class B
EUT TYPE : SCANNING RECEIVER
FREQ. RANGE : 118MHz - 523.995MHz
800MHz - 1299.995MHz
MAX USED FREQ. : 1299.995MHz
DATE OF TEST : September 14,16, 1999
MEASUREMENT : ANSI C63.4-1992
TEST RESULT : PASS
REPORT NO. : Z02C-99246
REMARKS : No modification was made during testing.
Power cord is not connected to AC line.

Zacta Technology Corporation certifies that no party to the application is subject to a denial of federal benefits, that include FCC benefits, pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21U.S.C. 853(a).

Authorized by : Shin-ichi Abe
General Manager, Zacta Technology Corporation Yonezawa
Testing Center

The results in this test report apply only to the samples tested.
This report shall not be re-produced except in full without the

FCC ID: K4428451110

Zacta Technology Corp.

written approval of Zacta Technology Corporation.

LABORATORY MEASUREMENTS

PURSUANT TO PART 15, SUBPART B

COMPANY NAME : KENWOOD CORPORATION COMMUNICATION
EQUIPMENT DIVISION
EUT : SCANNING RECEIVER
MODEL NO. : TM-D700A
FCC ID : K4428451110
SERIAL NO. : N/A
DATE OF TESTS : September 14,16, 1999
MEASUREMENT : ANSI C63.4-1992
FCC CLASS : B
DISTANCE : 3m
POWER SUPPLIED : DC 13.8V(From DC Power Supply)
REPORT NO. : Z02C-99246

JUSTIFICATION / ENGINEERING COMMENT

The detector function in frequency range of 30MHz-1GHz was set to Quasi-peak mode.

Peak and average detectors were used for measurements above 1GHz.

Used maximum frequency of this device is 1299.995MHz, therefore, we were measured up to 7GHz when Radiated Emission Test.

Cables were manipulated to produce the worst case emissions.

This device is composite device, and it is provided another Certification Filing No:Z02C-99247 as PC peripheral.

All operating configuration, combination of Accessory: Microphone were measured.

The worst case data were reported.

Sufficient warm up time is proved for these testing.

Frequency Rang: A Band 118MHz-523.995MHz

B Band 136MHz-523.995MHz and 800MHz-1299.995MHz

Four points of frequency: at bottom, middle, top of the band and scanning mode were measured, and SCAN mode was the worst case.

Antenna power conduction for external receiving antenna were measured.

ENGINEER : Takuya Osato

SUMMARY OF TEST DATA

RADIATION DATA

OPERATING CONFIGURATION			RESULT
TEST MODE		FREQUENCY	MARGIN
A Band 118MHz, 800MHz	B Band	377.50MHz	-16.1dB
A Band 320MHz, 1050.05MHz	B Band	1973.67MHz	-14.3dB
A Band 523.995MHz, 1299.995MHz	B Band	2183.15MHz	-9.7dB
A Band 523.995MHz, 523.995MHz	B Band	2183.15MHz	-8.4dB
A Band 523.995MHz 330MHz	B Band	2183.15MHz	-9.1dB
A Band 118MHz 136MHz	B Band	2352.73MHz	-16.0dB
A Band SCAN SCAN	B Band	2288.67MHz	-2.6dB

CONDUCTION DATA

OPERATING CONFIGURATION			RESULT
TEST MODE		FREQUENCY	MARGIN
A Band SCAN SCAN	B Band	1.359MHz	-13.7dB

POWER CONDUCTED EMISSION DATA

KENWOOD TM-D700A Scan Mode

A Band(MHz)	B Band(MHz)	FREQ. (MHz)	READ (dBm)	Amp Gen (dB)	Cable Loss (dB)	Sum (dBm)	Limit (uW)	Data (uW)	Margin (uW)
151.995	-	199.85	-456	292	08	-740	200	0.039811	-1.960189
248.625	389.500	425.46	-480	300	12	-768	200	0.020941	-1.979059
403.750	-	843.62	-490	299	18	-771	200	0.019724	-1.980276
514.405	-	951.09	-456	300	19	-737	200	0.042855	-1.957145
437.245	-	995.98	-494	300	19	-775	200	0.017673	-1.982327
461.200	-	1.05587	-453	37.1	38	-786	200	0.013709	-1.986291
463.285	-	1.09096	-366	37.1	38	-699	200	0.103467	-1.896533
486.405	-	2.97409	-407	35.9	70	-696	200	0.110230	-1.889770
507.405	-	5.62265	-482	35.3	91	-744	200	0.036241	-1.963759

KENWOOD TM-D700A Point Mode

A Band(MHz)	B Band(MHz)	FREQ. (MHz)	READ (dBm)	Amp Gen (dB)	Cable Loss (dB)	Sum (dBm)	Limit (uW)	Data (uW)	Margin (uW)
118.000		156.89	-480	292	07	-765	200	0.022605	-1.977395
321.000		179.91	-634	292	07	-919	200	0.000646	-1.999354
	800.000	318.53	-596	295	1	-88.1	200	0.001560	-1.998440
	1050.050	318.54	-601	295	1	-88.6	200	0.001384	-1.998616
	136.000	318.56	-597	295	1	-88.2	200	0.001503	-1.998497
118.000		470.68	-599	300	13	-88.6	200	0.001382	-1.998618
	330.000	478.97	-532	300	13	-81.9	200	0.006442	-1.993558
523.995		485.13	-611	300	12	-89.9	200	0.001035	-1.998965
	523.995	487.91	-558	297	12	-84.3	200	0.003687	-1.996313
	1299.950	554.04	-647	299	14	-93.2	200	0.000483	-1.999517
321.000		899.60	-538	30.1	18	-82.1	200	0.006119	-1.993881
523.995		970.36	-493	300	19	-77.4	200	0.018374	-1.981626
	523.995	1.91576	-530	36.1	52	-83.9	200	0.004074	-1.995926
523.995		1.94056	-381	36.1	52	-69.0	200	0.125603	-1.874397
321.000		1.97916	-467	36.1	52	-77.6	200	0.017470	-1.982530
	1299.950	2.01748	-640	36.1	53	-94.8	200	0.000331	-1.999669
321.000		2.69886	-529	36.1	62	-82.8	200	0.005216	-1.994784
118.000		2.82330	-588	36.1	66	-88.3	200	0.001496	-1.998504
321.000		2.87878	-537	36.1	66	-83.2	200	0.004742	-1.995258
523.995		2.91085	-436	35.9	7	-72.5	200	0.055642	-1.944358
523.995		3.15342	-506	35.9	68	-79.7	200	0.010678	-1.989322
523.995		3.63857	-531	35.3	79	-80.5	200	0.008882	-1.991118
321.000		3.95833	-578	35.3	79	-85.2	200	0.003040	-1.996960
321.000		5.57767	-596	35.3	89	-86.0	200	0.002485	-1.997515

CONFIGURATION INFORMATION**DEVICE INFORMATION**

COMMENT :

NO .	EQUIPMENT	COMPANY	MODEL NO.	SERIAL NO.	FCC ID	COMMENT
1	Scanning Receiver	KENWOOD	TM-D700A	N/A	K4428451110	EUT
2	Panel	KENWOOD	N/A	N/A	K4428451110	EUT
3	Microphone	KENWOOD	N/A	N/A	N/A	Accessory
4	Communications Speaker	KENWOOD	SP-50B	N/A	N/A	
5	Communications Speaker	KENWOOD	SP-50B	N/A	N/A	
6	DC Power Supply	KENWOOD	PS-33	30200384	N/A	

CABLES INFORMATION

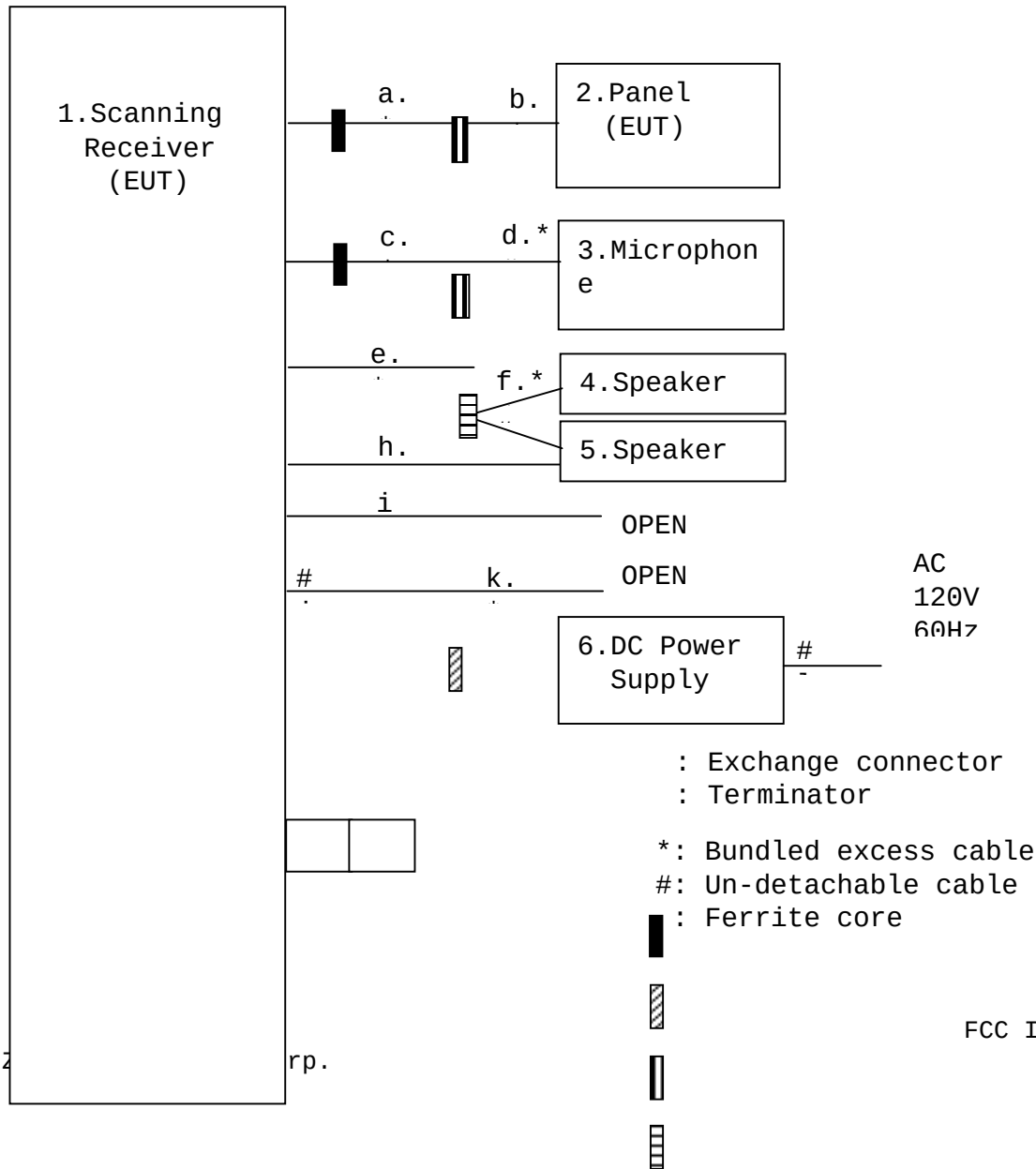
NO .	CABLE	COMPANY	LENGTH	SHIELDED		Connected Situation		COMMENT
			[m]	Cable	Connector	From	To	
a	Panel cable	KENWOOD	4.0	Unshielded	Plastic	EUT	Modular ADP	*
b	Panel cable	KENWOOD	3.0	Unshielded	Plastic	Modular ADP	Panel	*
c	Microphone cable	KENWOOD	4.0	Unshielded	Plastic	EUT	Modular ADP	*
d	Microphone cable	KENWOOD	3.0	Unshielded	Plastic	Modular ADP	Microphone	*
e	SP cable	KENWOOD	4.0	Unshielded	Metal	EUT	SP cable CN	*
f	SP cable	KENWOOD	2.5	Unshielded	Metal	SP cable CN	Speaker	*
g	SP cable	KENWOOD	2.5	Unshielded	Metal	SP cable CN	Speaker	*
h	DATA cable	KENWOOD	1.0	Shielded	Metal	EUT	(OPEN)	
i	GPS cable	KENWOOD	1.0	Unshielded	Metal	EUT	(OPEN)	
j	DC cable	KENWOOD	0.25	Unshielded	Plastic	EUT	Connector	

k	DC cable	KENW00D	1.8	Unshielded	Plastic	Connector	Power supply	*
l	AC Power cord	KENW00D	1.8	Unshielded	Plastic	Power Supply	AC Outlet	

* Bundled excess cable.

SYSTEM CONFIGURATION

COMMENT: _____



: Connector
: Modular Adapter
: SP cable connector

LABORATORY DESCRIPTION

DESCRIPTION FOR TEST SITE

1. LOCATION:

ZACTA TECHNOLOGY CORPORATION YONEAZAWA TESTING CENTER
4149-7 Hachimanpara 5-chome, Yonezawa-shi Yamagata 992-1128
Japan
Phone: +81-238-28-2880 Fax: +81-238-28-2888

2. THE NUMBER OF SITE:

Total: 4 sites - site #1, site #2, site #3, site #4

3. THE TYPE OF SITE:

Whether protected site

4. TEST TYPE:

All sites could perform as follows tests:

- 1) 3/10m Radiated disturbance test
- 2) Conducted disturbance test

5. FACILITY FILING INFORMATION

FCC FINAL SITE FILING: 2.948 Pursuant to ANSI C63.4-1992

Site #1, Site #2, Site #3 (Final date: January 29, 1997)

Site #4 (Final date: June 18, 1998)

*3m/10m Radiated emission test & Conducted emission test could
be performed on each site

VCCI FINAL SITE FILING: V-5/97.04 Pursuant to VCCI Regulations
for Registration of measurement facilities

Site #1 R - 136 C - 132 (Final date: April 1, 1997)

Site #2 R - 137 C - 133 (Final date: April 1, 1997)

Site #3 R - 138 C - 134 (Final date: April 1, 1997)

Site #4 R - 752 C - 775 (Final date: June 23, 1998)

NVLAP ACCREDITATION:

NVLAP CODE: 200306-0

NVLAP INFORMATION: NVLAP accreditation does not constitute any product endorsement by NVLAP or any agent of the U.S. Government

DESCRIPTION OF CONDUCTION TESTING

The line-conducted emissions testing facility is located inside of the site which used for radiated emissions testing.

A 1 meter x 1.5 meter surface, 0.8 meter height from conducting ground plane wooden table is placed 40 cm away from the vertical conducting surface.

Two 50 /50 H Line Impedance Stabilization Network (LISN) are placed on the conducting ground plane.

The EUT was powered from the KYORITSU LISN and the support Equipment were another KYORITSU LISN.

50 BNC connector of the KYORITSU LISN (for peripheral) is terminated in 50 .

An isolation transformer has 50A which is large enough to not affect the peak consumption current by the EUT.

All interconnecting cables more than 1 meter were bundled to 1 meter length.

Sufficient time for the EUT, support equipment, and test equipment were allowed in order for them to warm up to their normal operating condition.

The frequency range was scanned from 450KHz to 30 MHz. The detector function of the test receiver was set to CISPR Quasi-peak mode and the bandwidth was set to 10KHz.

The EUT, support equipment and interconnecting cables were arranged and manipulated to maximize worst emissions for each emission in this test report.

DESCRIPTION OF RADIATION TESTING

Measurements: were made at 3 meter using broadband antenna (Biconical Antenna and log-periodic antenna) & Test receiver. Frequency Range : 30MHz - 1GHz was scanned and investigated using receiver. Six highest emissions (Min.) was reported. The test results represents the worst case emissions for each emission with manipulating the EUT, support equipment and interconnecting cables maximize the worst emissions in this test report.

Condition:

The detector function of the test receiver was set to CISPR Quasi-peak mode and the bandwidth was set to 120kHz. Sufficient time for the EUT, support equipment, and test equipment were allowed in order for them to warm up to their normal operating condition.

The EUT and support equipment were placed on a top of a 0.8 meter height wooden table.

For Floor-Standing devices, the EUT and all cables were installed on electrical insulating material.

The antenna height was varied 1 to 4 meters and stopped at height producing the maximum emission. The turntable was rotated by 360 degrees and stopped at azimuth of producing the maximum emission.

Interconnecting cables which are connected to a peripheral was bundled in center, and its length was not exceed 1 meter.

Each emissions were maximized by: varying the mode of operation, changing the polarity of the antenna, whichever determined the worst case emission.

The normalized site attenuation graph for the both horizontal and vertical polarization are shown in Description for site.

As specified in CFR section 15.33, in case of the highest frequency used in the device is maximum frequency 1.2GHz, the frequency range was investigated from 30MHz up to the frequency 7GHz.

For measurements above 1GHz, double-ridged guide antenna was used as specified in ANSI C63.4-1992 section 4.1.5.4.

Pursuant to CFR section 15.35(b) and ANSI C63.4-1992 section 4.2., Peak and Average detectors were used for measurements above 1GHz. The bandwidth of spectrum analyzer was set to 1MHz.

When measuring emissions above 1GHz, the frequencies of maximum emissions were determined by manually positioning the antenna close to the EUT and by moving the antenna over all sides of the EUT while observing a spectral display. The beam width of the antenna at that time was larger than EUT.

DESCRIPTION OF ANTENNA POWER CONDUCTION TEST FOR RECEIVERS

Since the EUT is the receiver that provide terminals for the connection of an external receiving antenna, in addition to section 15.109 radiated emission limits, the test for Antenna power conduction limits was demonstrated pursuant to section 15.111.

The receiver antenna terminal was connected to the spectrum analyzer which resistive termination is equal to the antenna impedance.

The exchange connector was used between antenna termination and coaxial cable.

Spectrum analyzer was set to read dBm as specified in charts of the spectrum analyzer display and it converted to the value of nanowatts.

The measurement data was investigated at bottom, middle, top of the band and scanning mode.

UNCERTAINTY

Conducted Emission Test

Total Uncertainty @95%min.Confidence probability	±1.78dB
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Radiated Emission Test

Total Uncertainty @95%min.Confidence probability	3m	10m
	±2.66dB	±2.01dB

TEST SITE CONDITION & INSTRUMENTATION

TEST SITE CONDITION

Test date	September 14,16, 1999			
Site #	Site 1			
Power supply	DC 13.8V			
Weather	September 14	Weather: Sunny	Temp.: 28	Humidity: 55%
	September 16	Weather: Cloudy	Temp.: 25	Humidity: 60%
Standard	ANSI C63.4-1992			
Deviation from The standards	Not applicable			

TEST EQUIPMENT FOR CONDUCTION

Equipment	Manufacture	Model name / Serial No.	Calibration date	Period
Spectrum Analyzer	Hewlett Packard	8568B / 2634A02803	Jun. 1999	1 year
Test Receiver	Kyoritsu Electrical Works, Ltd.	KNM-2402 / 4N-192-1	Nov. 1998	1 year
Line Impedance Stabilization Network	Kyoritsu Electrical Works, Ltd.	KNW-242C / 8-1096-3 (For EUT)	Jan. 1999	1 year
Line Impedance Stabilization Network	Kyoritsu Electrical Works, Ltd.	KNW-242C / 8-875-19 (For peripheral)	Feb. 1999	1 year
Coaxial cable	FUJIKURA	8D-2W / H110601#1/15C	Jun. 1999	1 year

TEST EQUIPMENT FOR ANTENNA POWER CONDUCTION

Equipment	Manufacture	Model name / Serial No.	Calibration date	Period
Spectrum Analyzer	ADVANTEST	R3271A / 65050042	May. 1999	1 year
RF	Hewlett Packard	8449B / 3008A00589	May. 1999	2 year

Preamplifier				
RF Preamplifier	Anritsu	MH648A / M09967	Dec. 1998	1 year
Coaxial cable	SUHNER	SUCOFLEX 104 108014/4 & 108015/4	May. 1999	2 year

TEST EQUIPMENT FOR RADIATION

Equipment	Manufacture	Model name / Serial No.	Calibrati on date	Perio d
Spectrum Analyzer	Hewlett Packard	8568B / 2634A02803	Jun. 1999	1 year
RF Preamplifier	Anritsu	MH648A / M96057	Nov. 1998	1 year
Test Receiver	Kyoritsu Electrical Works, Ltd.	KNM-5002 / 4N-200-5 KCV-6002 / 4-288-2	Jun. 1999	1 year
Biconical Antenna	Schwarzbeck	BBA9106/VHA9103LE / 13130919	Jun. 1999	1 year
Log Periodic Antenna	Electro-Mechanics Co.	3146 / 8901-2336	Jun. 1999	1 year
Coaxial cable	FUJIKURA	8D-2W / H110601#1/08R	Jun. 1999	1 year
Coaxial cable	FUJIKURA	23D-HA/ H110601#1/23D-HA	Jun. 1999	1 year
Site attenuation	Zacta Technology Corp.	Site 1	Dec. 1998	1 year

*** Measurement above 1GHz ***

Equipment	Manufacture	Model name / Serial No.	Calibrati on date	Perio d
Spectrum Analyzer	ADVANTEST	R3271A / 65050042	May. 1999	1 year
RF Preamplifier	Hewlett Packard	8449B / 3008A00589	May. 1999	2 year
Double Ridged Guide Antenna	Electro-Mechanics Co.	3115 / 4328	Jun. 1998	2 year
Coaxial cable	SUHNER	SUCOFLEX 104 108014/4 & 108015/4	May. 1999	2 year

Calibration is traceable to NIST or an equivalent standards reference organization.

SAMPLE OF FIELD STRENGTH CALCULATION

$$\text{dB } V = 20 \log_{10} (V)$$

$$\text{dB V/m} = 20 \log_{10} \left(\frac{\text{V/m}}{\text{V/m}} \right)$$

[Sample Calculation]

*For Conduction

Class B limit = 250 V = 48.0dB V

@ 3.332MHz

Reading = 41.6dB V

Cable Loss = 0.2dB

$$\text{Total} = 41.6 + 0.2 = 41.8\text{dB V}$$
$$\text{Margin} = 41.8 - 48.0 = -6.2\text{dB}$$

6.2 dB below the limit

*For Radiation

Class B limit = 150 V/m = 43.5dB V/m

@ 181.0MHz

Reading = 35.7dB V

$$\text{Ant. Factor} + \text{Cable Loss} - \text{Amp. Gain} = 15.8 + 1.4 - 15.0 = 2.2\text{dB/m}$$
$$\text{Total} = 35.7 + 2.2 = 37.9\text{dB V/m}$$
$$\text{Margin} = 37.9 - 43.5 = -5.6\text{dB}$$

5.6 dB below the limit

*For Antenna Power Conduction

limit = 2.00 nW

@ 156.89MHz

Reading = -48dBm

Cable Factor - Amp. Gain = -28.5dBm

$$\text{Total } -48 - 28.5 = -76.5\text{dBm}$$
$$nW = 10^{-6} \times 10^{\text{dBm}/10}$$
$$76.5 \text{ dBm} = 0.022605 \text{ nW}$$
$$\text{Margin} = 2.00 - 0.022605 = -1.977395 \text{ nW}$$

1.977395 nW below the limit

~~FCC~~ PART 15B Class B 3m RADIATION DATA SHEET @

DATE OF TESTS: 99/09/14 SITE: 1 CHART NO SHEET NO 1
 COMPANY NAME: KENWOOD MODEL: TMD700A MODE:
 COMMENT: A Band 118 MHz
 B Band 800 MHz

POL	ANT	TABLE	FREQ	READ	FACTOR	NET	LIMITS	MARGIN	COMMENT
H/V	[m]	[deg]	[MHz]	[dB _i V]	[dB/m]	[dB _i V/m]	[dB _i V/m]	[dB]	
H	1.0	240	313.72	31.3	-13.4	17.9	46.0	-28.1	
H	1.0	290	377.50	42.1	-12.2	29.9	46.0	-16.1	
V	1.2	320	377.50	35.1	-12.2	22.9	46.0	-23.1	
H	1.2	160	2195.89	43.7	-1.6	42.1	54.0	-11.9 *	PEAK
H	1.2	160	2195.89	36.4	-1.6	34.8	54.0	-19.2	AVERAGE

Except for above emissions, no emissions were observed during Radiated testing.

~~FCC~~ PART15B Class B 3m RADIATION DATA SHEET @

DATE OF TESTS: 99/09/14 SITE: 1 CHART NO - SHEET NO 2
 COMPANY NAME: KENWOOD MODEL: TMD700A MODE:
 COMMENT: A Band 320 MHz
 B Band 1050.05 MHz

POL	ANT	TABLE	FREQ	READ	FACTOR	NET	LIMITS	MARGIN	COMMENT
H/V	[m]	[deg]	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
H	1.0	295	365.05	42.9	-12.5	30.4	46.0	-15.6	
V	1.5	310	365.05	33.7	-12.5	21.2	46.0	-24.8	
H	1.1	155	1973.67	41.9	-2.2	39.7	54.0	-14.3 *	PEAK
H	1.1	155	1973.67	35.0	-2.2	32.8	54.0	-21.2	AVERAGE

Except for above emissions, no emissions were observed during Radiated testing.

FCC PART 15B Class B 3m RADIATION DATA SHEET @

DATE OF TESTS: 99/09/14 SITE: 1 CHART NO SHEET NO 3
 COMPANY NAME: KENWOOD MODEL: TMD700A MODE:
 COMMENT: A Band 523.995 MHz
 B Band 1299.995 MHz

POL	ANT	TABLE	FREQ	READ	FACTOR	NET	LIMITS	MARGIN	COMMENT
H/V	[m]	[deg]	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
H	1.0	240	336.28	34.7	-12.8	21.9	46.0	-24.1	
H	1.0	235	485.17	31.3	-9.3	22.0	46.0	-24.0	
V	1.8	35	485.17	32.2	-9.3	22.9	46.0	-23.1	
H	1.0	230	970.31	31.4	2.1	33.5	54.0	-20.5	
H	1.9	160	2183.15	45.9	-1.6	44.3	54.0	-9.7	-PEAK
H	1.9	160	2183.15	41.7	-1.6	40.1	54.0	-13.9	AVERAGE

FCC PART 15B Class B 3m RADIATION DATA SHEET @

DATE OF TESTS: 99/09/14 SITE: 1 CHART NO - SHEET NO 4
 COMPANY NAME: KENWOOD MODEL: TMD700A MODE:
 COMMENT: A Band 523.995 MHz
 B Band 523.995 MHz

POL	ANT	TABLE	FREQ	READ	FACTOR	NET	LIMITS	MARGIN	COMMENT
H/V	[m]	[deg]	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
H	1.0	275	478.97	37.7	-9.6	28.1	46.0	-17.9	
H	1.0	230	485.17	31.7	-9.3	22.4	46.0	-23.6	
V	2.0	295	485.17	33.7	-9.3	24.4	46.0	-21.6	
H	1.0	230	970.31	28.6	2.1	30.7	54.0	-23.3	
H	1.1	180	2183.15	47.2	-1.6	45.6	54.0	-8.4	-PEAK
H	1.1	180	2183.15	43.8	-1.6	42.2	54.0	-11.8	AVERAGE

~~FCC~~ PART15B Class B 3m RADIATION DATA SHEET @

DATE OF TESTS: 99/09/14 SITE: 1 CHART NO - SHEET NO 5
 COMPANY NAME: KENWOOD MODEL: TMD700A MDE:
 COMMENT: A Band 523.995 MHz
 B Band 330 MHz

POL	ANT	TABLE	FREQ	READ	FACTOR	NET	LIMITS	MARGIN	COMMENT
H V	[m]	[deg]	[MHz]	[dBuV]	[dB/m]	[dBuV m]	[dBuV m]	[dB]	
H	1.0	190	375.08	44.8	-12.2	32.6	46.0	-13.4	
V	1.0	150	375.08	40.8	-12.2	28.6	46.0	-17.4	
H	1.0	235	485.17	30.9	-9.3	21.6	46.0	-24.4	
V	2.0	285	485.17	32.4	-9.3	23.1	46.0	-22.9	
H	1.0	230	970.31	28.4	2.1	30.5	54.0	-23.5	
H	1.0	170	1940.58	45.3	-2.2	43.1	54.0	-10.9	PEAK
H	1.0	170	1940.58	40.2	-2.2	38.0	54.0	-16.0	AVERAGE
H	1.0	175	2183.15	46.5	-1.6	44.9	54.0	-9.1 *	PEAK
H	1.0	175	2183.15	43.9	-1.6	42.3	54.0	-11.7	AVERAGE

~~FCC~~ PART15B Class B 3m RADIATION DATA SHEET @

DATE OF TESTS: 99/09/14 SITE: 1 CHART NO - SHEET NO 6
 COMPANY NAME: KENWOOD MODEL: TMD700A MODE:
 COMMENT: A Band 118 MHz
 B Band 136 MHz

POL	ANT	TABLE	FREQ	READ	FACTOR	NET	LIMITS	MARGIN	COMMENT
H/V	[m]	[deg]	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
H	1.0	310	313.72	31.3	-13.4	17.9	46.0	-28.1	
H	1.0	225	362.10	37.9	-12.5	25.4	46.0	-20.6	
V	1.3	320	362.10	35.2	-12.5	22.7	46.0	-23.3	
H	1.0	175	2195.90	39.5	-1.6	37.9	54.0	-16.1	PEAK
H	1.0	175	2195.90	38.6	-1.6	37.0	54.0	-17.0	AVERAGE
H	1.0	175	2352.73	38.5	-0.5	38.0	54.0	-16.0 *	PEAK
H	1.0	175	2352.73	36.8	-0.5	36.3	54.0	-17.7	AVERAGE
V	1.1	145	2352.73	35.0	-0.5	34.5	54.0	-19.5	PEAK
V	1.1	145	2352.73	30.2	-0.5	29.7	54.0	-24.3	AVERAGE

FCC PART15B Class B 3m RADIATION DATA SHEET @

DATE OF TESTS: 99/09/16 SITE: 1 CHART NO - SHEET NO 7
 COMPANY NAME: KENWOOD MODEL: TMD700A MODE:
 COMMENT: A Band SCAN
 B Band SCAN

POL	ANT	TABLE	FREQ	READ	FACTOR	NET	LIMITS	MARGIN	COMMENT
H V	[m]	[deg]	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
H	1.0	110	391.75	46.9	-11.8	35.1	46.0	-10.9	
V	1.5	140	391.75	40.1	-11.8	28.3	46.0	-17.7	
H	1.0	110	400.80	46.7	-11.8	34.9	46.0	-11.1	
V	1.7	195	400.80	41.9	-11.8	30.1	46.0	-15.9	
H	1.0	200	931.03	35.0	0.2	35.2	46.0	-10.8	
V	1.5	125	931.03	34.2	0.2	34.4	46.0	-11.6	
H	1.0	25	1641.37	55.3	-4.0	51.4	54.0	-2.7	PEAK
H	1.0	25	1641.37	54.8	-4.0	50.9	54.0	-3.2	AVERAGE
V	1.0	225	1641.37	52.6	-4.0	48.7	54.0	-5.4	PEAK
V	1.0	225	1641.37	49.4	-4.0	45.5	54.0	-8.6	AVERAGE
H	1.0	170	1969.65	53.4	-2.2	51.2	54.0	-2.8	PEAK
H	1.0	170	1969.65	52.9	-2.2	50.7	54.0	-3.3	AVERAGE
V	1.0	230	1969.65	51.6	-2.2	49.4	54.0	-4.6	PEAK
V	1.0	230	1969.65	50.6	-2.2	48.4	54.0	-5.6	AVERAGE
H	1.0	140	2197.92	49.8	-1.6	48.2	54.0	-5.8	PEAK
H	1.0	140	2197.92	49.0	-1.6	47.4	54.0	-6.6	AVERAGE
V	1.0	155	2197.92	47.4	-1.6	45.8	54.0	-8.2	PEAK
V	1.0	155	2197.92	45.5	-1.6	43.9	54.0	-10.1	AVERAGE
H	1.0	140	2288.67	52.5	-1.1	51.4	54.0	-2.6	PEAK
H	1.0	140	2288.67	50.5	-1.1	49.4	54.0	-4.6	AVERAGE
V	1.8	105	2288.67	50.8	-1.1	49.7	54.0	-4.3	PEAK
V	1.8	105	2288.67	47.9	-1.1	46.8	54.0	-7.2	AVERAGE

~~FCC~~ PART 15B Class B 3m CONDUCTION DATASHEET @

DATE OF TESTS : 99/09/14 SITE 1 CHART NO 1 SHEET NO 8
 COMPANY NAME : KENWOOD MODEL: TMD700A MODE SCAN
 COMMENT:

FREQ [MHz]	READ A [dBμV]	READ B [dBμV]	FACTOR [dB]	NET A [dBμV]	NET B [dBμV]	LIMITS [dBμV]	MARGIN [dB]	COMMENT
0.450	20.4	20.5	0.1	20.5	20.6	48.0	-27.4	
0.915	29.4	29.2	0.1	29.5	29.3	48.0	-18.5	Ambient Noise
1.359	34.0	33.5	0.3	34.3	33.8	48.0	-13.7	Ambient Noise
3.941	25.4	26.0	0.3	25.7	26.3	48.0	-21.7	Ambient Noise
6.036	13.5	14.2	0.3	13.8	14.5	48.0	-33.5	Ambient Noise
9.649	29.5	28.9	0.4	29.9	29.3	48.0	-18.1	Ambient Noise