

RETLIF TESTING LABORATORIES
TEST REPORT R-4265N2
AUGUST 25, 2004

FCC COMPLIANCE TEST REPORT
ON

BOSE CORPORATION
27.145MHz REMOTE CONTROL TRANSCEIVER
FCC ID: A94-RCYZH

APPLICANT Bose Corporation 100 Mountain Road Framingham, MA 01701	MANUFACTURER SAME
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TEST SPECIFICATION: FCC Rules and Regulations Part 15, Subpart C, Para. 15.227

TEST PROCEDURE: ANSI C63.4:2001

TEST SAMPLE DESCRIPTION

BRANDNAME: Bose MODEL: RC48S2-27

TYPE: DVD Home Entertainment System Remote Control Transceiver

POWER REQUIREMENTS: 6VDC via Internal Battery

FREQUENCY OF OPERATION: 27.145MHz

MODULATION: Pulsed (On/Off Keying)

TYPE OF TRANSMISSION: Control Signal (Pulse Recognition Codes)

FCC ID: A94-RCYZH

APPLICABLE RULE SECTION: Part 15, Subpart C, Section 15.227

TESTS PERFORMED

15.227 (a) Field Strength of Fundamental 27.145MHz

15.227 (b) Out of Band Emissions (9kHz to 1GHz)

TEST SAMPLE OPERATION

The EUT is powered by 6DC by internal battery. The device is normally manually operated and transmits a control signal for controlling functions of a DVD Home Entertainment System. For testing purposes only the EUT was configured to continuously transmit. All testing was performed with new batteries installed.

TEST SAMPLE / TEST PROGRAM

- The fundamental field strength at 27.145MHz did not exceed 10,000 μ V/M(Average) at a test distance of 3 meters.
- The peak value of fundamental emissions did not exceed a peak field strength limit corresponding to 20dB above the maximum permitted average limit.
- The field strength of out of band emissions did not exceed the general radiated limits specified in Section 15.209.
- The device uses an internal loop antenna
- Radiated Emissions from the EUT were measured in all three axis. The attached Radiated Emissions test data is representative of the worst case orientation.

TEST SAMPLE / TEST PROGRAM (continued)

TRANSMITTER DUTY CYCLE

The maximum duty cycle as stated by the manufacturer is shown below and was determined as follows: The transmitter on time was summed and compared to the time for one full cycle in order to obtain the duty cycle. As the pulse train exceeded 100msec in duration the worst case duty cycle was determined by measuring/calculating the 100msec period with the greatest on time. The on times were determined as follows:

The worst case 100msec period contains 4 pulse bursts. The “on time” within each burst was 6.5msec resulting in a total “on time” of 26msec.

Fundamental Frequency: 27.145MHz

Transmitter On Time	=	26milliseconds (maximum)
Transmitter Cycle Time	=	100 milliseconds
Transmitter Duty Cycle	=	26%
On Time divided by Cycle Time	=	Duty Cycle Factor
26 divided by 100	=	0.26
0.26 converted to dB ($\text{LOG}_{10} .26$)20	=	-11.7
<i>Duty Cycle Factor</i>	=	<i>-11.7dB</i>

A representative pulse train plot is included with this application as a separate attachment.

GENERAL NOTES

1. All readings were taken utilizing a peak detector function at a test distance of 3 meters.
2. The duty cycle factor was applied to the peak readings in order to determine the average value of the pulsed emissions.

EQUIPMENT LISTS

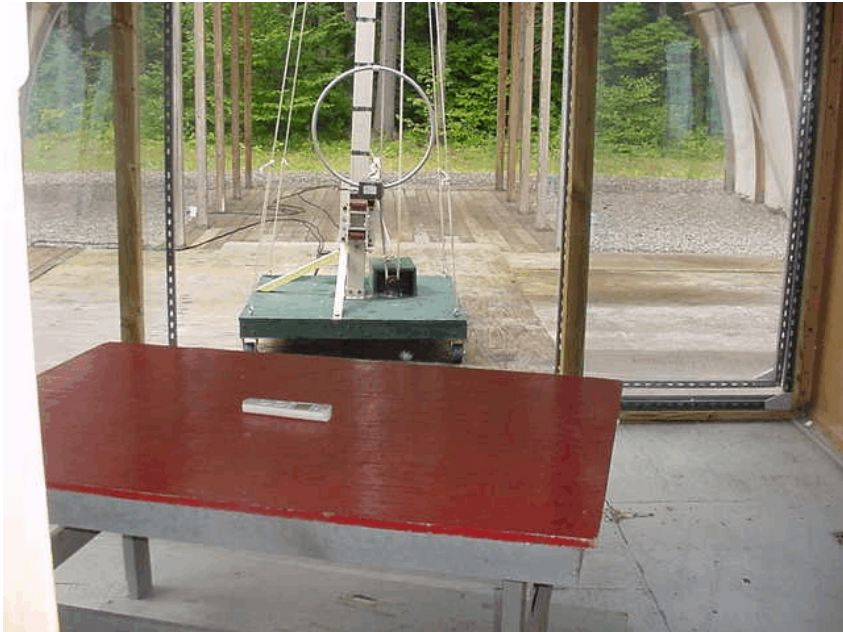
Fundamental Field Strength

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
3207	Loop Antenna, Active	EMCO	10 KHz - 30 MHz	6502	6/1/2004	6/1/2005
4029B	Test Site Attenuation	Retlif	3 / 10 Meters	RNH	7/30/2003	8/30/2004
4895	Spectrum Analyzer	Hewlett Packard	9kHz - 22GHz	8593EM	4/22/2004	4/22/2005

Out of Band Emissions

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
3207	Loop Antenna, Active	EMCO	10 KHz - 30 MHz	6502	6/1/2004	6/1/2005
4029B	Test Site Attenuation	Retlif	3 / 10 Meters	RNH	7/30/2003	8/30/2004
4202	Biconilog	EMCO	26 MHz - 2 GHz	3142	8/29/2003	8/29/2004
4895	Spectrum Analyzer	Hewlett Packard	9kHz - 22GHz	8593EM	4/22/2004	4/22/2005

RADIATED EMISSIONS PHOTOGRAPHS



Test Report No. R-4265N2
FCC ID: A94-RCYZH

TEST DATA

EMISSIONS DATA SHEET

Fundamental Field Strength

Bose Corporation

Job No.

R-4265N2

Hand Held Remote Control Transceiver

RC48S2-27

Serial No.

12

FCC Part 15, Subpart C

Paragraph: 15.227(a)

Transmitting

T. Firkowski

Date:

August 11, 2004

Test Distance: 3 Meters

Detector: Peak

[illegible]

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Out of Band Emissions		
Customer	Bose Corporation	Job No.	R-4265N2
Test Sample	Hand Held Remote Control Transceiver		
Model No.	RC48S2-27	Serial No.	12
Test Specification:	FCC Part 15, Subpart C		
	Paragraph: 15.227(b)		
Operating Mode:	Transmitting		
Technician:	T. Firkowski	Date:	August 11, 2004
Notes:	Test Distance: 3 Meters Detector: Peak		

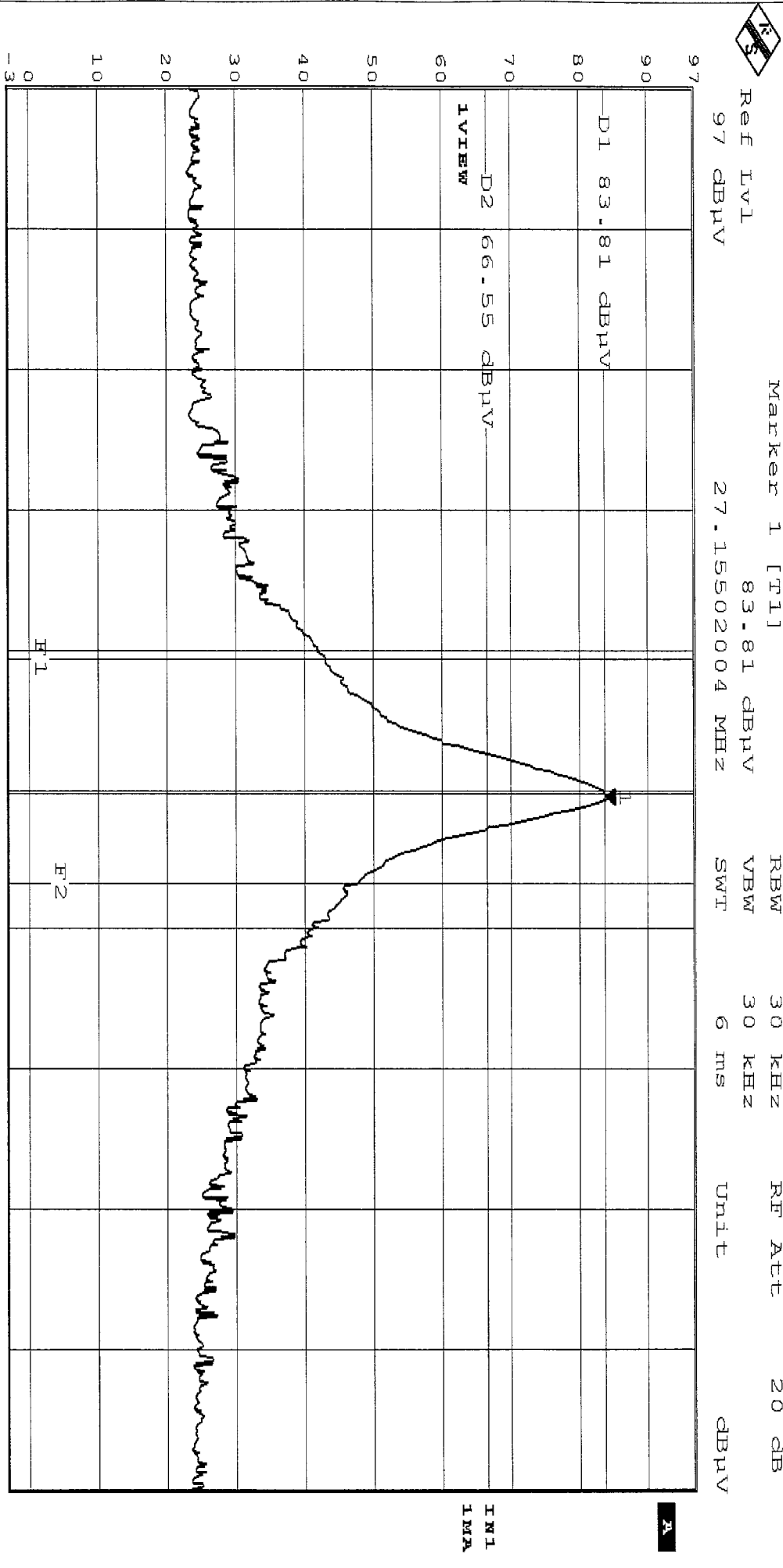
Test Frequency	Antenna/EUT Position	Uncorrected Reading	Correction Factor	Duty Cycle Factor	Corrected Reading				Converted Reading	Limit at 3 Meters
MHz	Polarization/Axis	dBuV	dB	dB	dBuV/m				uV/m	uV/m
30.00	-	-	-	-	-				-	100.00
	-	-	-	-	-				-	
54.29	-	-	-	-	-				-	
81.43	V/X	22.45	12.44	-11.70	23.19				14.44	
	-	-	-	-	-				-	
88.00	-	-	-	-	-				-	100.0
88.00	-	-	-	-	-				-	150.0
	-	-	-	-	-				-	
108.58	H/X	24.85	14.22	-11.70	27.37				23.36	
135.72	H/X	26.79	13.86	-11.70	28.95				28.02	
162.87	H/X	28.41	15.34	-11.70	32.05				40.04	
190.01	H/X	29.93	16.54	-11.70	34.77				54.76	
	-	-	-	-	-				-	
216.00	-	-	-	-	-				-	150.0
216.00	-	-	-	-	-				-	200.0
	-	-	-	-	-				-	
217.16	H/X	32.88	17.78	-11.70	38.96				88.72	
244.31	H/X	29.98	19.40	-11.70	37.68				76.52	
271.45	H/X	26.65	20.42	-11.70	35.37				58.65	
	-	-	-	-	-				-	
	-	-	-	-	-				-	
	-	-	-	-	-				-	
960.00	-	-	-	-	-				-	200.0
960.00	-	-	-	-	-				-	500.0
	-	-	-	-	-				-	
1000.00	-	-	-	-	-				-	500.0

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet.

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

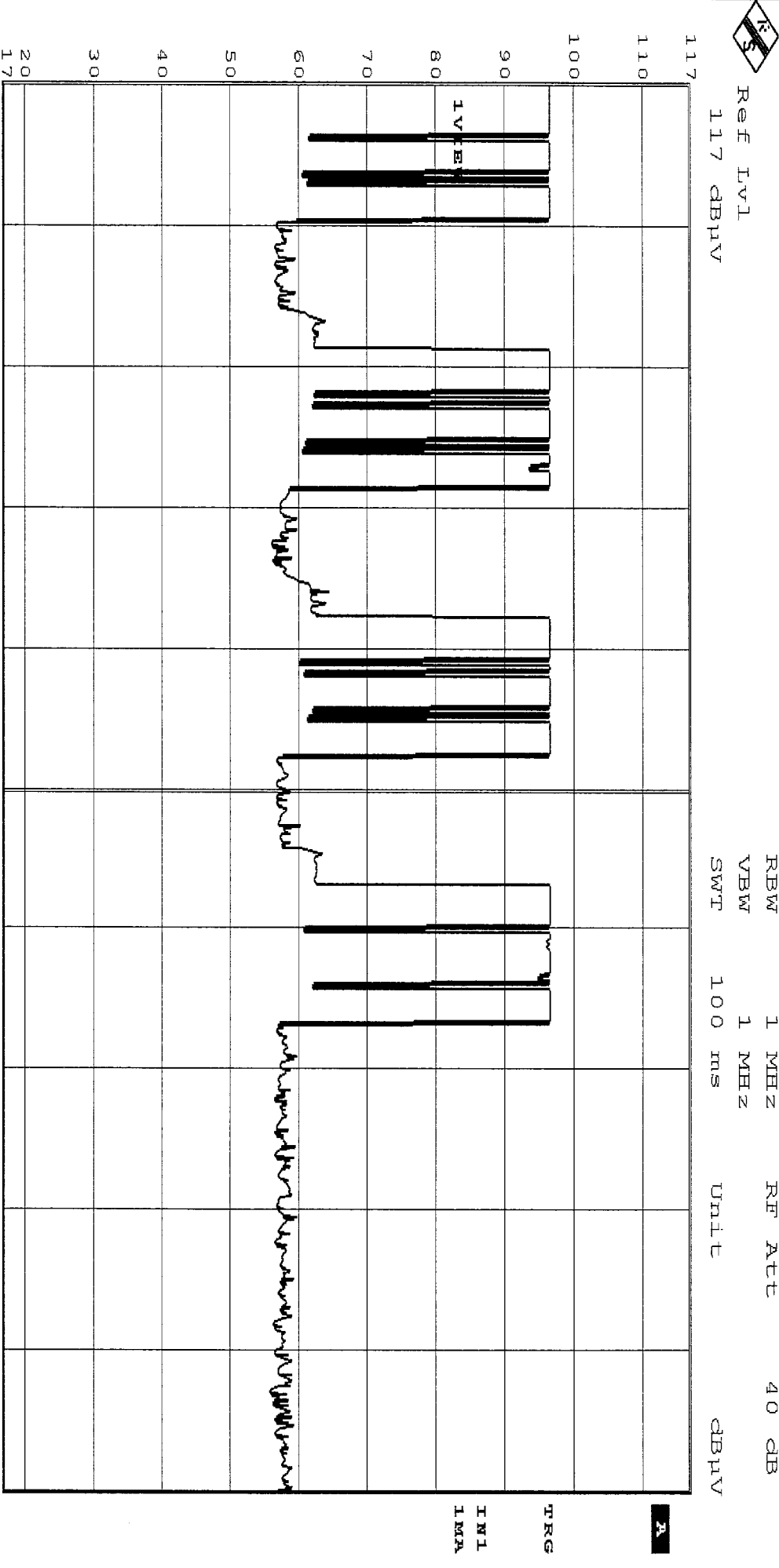
Test Method:		Band Edge Emissions	
Customer:	Bose Corporation	Test Sample:	Hand Held Remote Control Transceiver
Model No:	RC48S2-27	Serial No:	12
Test Specification:	FCC Part 15, Subpart C	Paragraph:	15.227(b)
Operating Mode:	Transmitting	Job No:	R-4265N2
Notes:		Technician:	T. Filkowski
		Date:	August 11, 2004



RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:		Pulse Train Plot	
Customer:	Bose Corporation	Test Sample:	Hand Held Remote Control Transceiver
Model No:	RC48S2-27	Serial No:	12
Test Specification:	FCC Part 15, Subpart C	Paragraph:	15.227
Operating Mode:	Transmitting		
Notes:			
Job No:	R-4265N2	Technician:	T. Firkowski
Date:	August 11, 2004		



RETILF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:		Pulse Train Plot	
Customer:	Bose Corporation	Test Sample:	Hand Held Remote Control Transceiver
Model No:	RC48S2-27	Serial No:	12
Test Specification:	FCC Part 15, Subpart C	Paragraph:	15.227
Operating Mode:	Transmitting modulated Signal		
Notes:			
Job No:	R-4265N2	Technician:	T. Filkowski
Date:	August 11, 2004		

