

FCC COMPLIANCE REPORT

Reference No. : SKI-03-0223
Report No. : F690501/LF-EMC000173
Applicant : Hobbico Inc.
Address of Applicant : 2904 Research Road, P.O. Box 9021, Champaign,
Illinois 61826-9021, USA

Equipment Under Test (EUT) :

Name : NEXSTAR .46 SELECT ARF
Model No. : USB TX INTERFACE

Standards : FCC Part 15, Subpart B, Class B
ANSI C63.4:1992

Date of Receipt : 25 August 2003
Date of Test : 10 October 2003 to 11 October 2003
Date of Issue : 13 October 2003

Test Result :	PASS
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In the configuration tested, the EUT complied with the standards specified above.

Remarks :

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report shall not be reproduced except in full, without the written approval of the laboratory. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.



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1. General Information

1.1 Manufacturer Information

Manufacturer : Hobbico Inc.
Address : 2904 Research Road, P.O. Box 9021, Champaign,
Illinois 61826-9021, USA

1.2 General Description of EUT

Name : USB TX INTERFACE
Model No. : NEXSTAR .46 SELECT ARF
Serial No : N/A

1.3 Details of EUT

Tested Power Supply : AC 110V, 60Hz
Port : USB, Interface
Description of Operating : Input signal from Radio Control System and Convert it
into USB signal.
Modifications to the EUT : None

1.4 Description of Support Units

Product	Model No.	Serial No.	Manufacturer
Printer	BJC-2100SP	CME010503119	CANON
PS/2 Mouse	M-S34	LZB00207183	LOGITECH
Keyboard	SEM-DT35	05068271	SAMSUNG
PC	Dreamsys EX/TLB	N/A	TriGem Computer
LCD Monitor	TGL170PX	FFSJ330232176	TriGem Computer
Radio Control System	SYSTEM 3000	N/A	TOWER HOBBIES

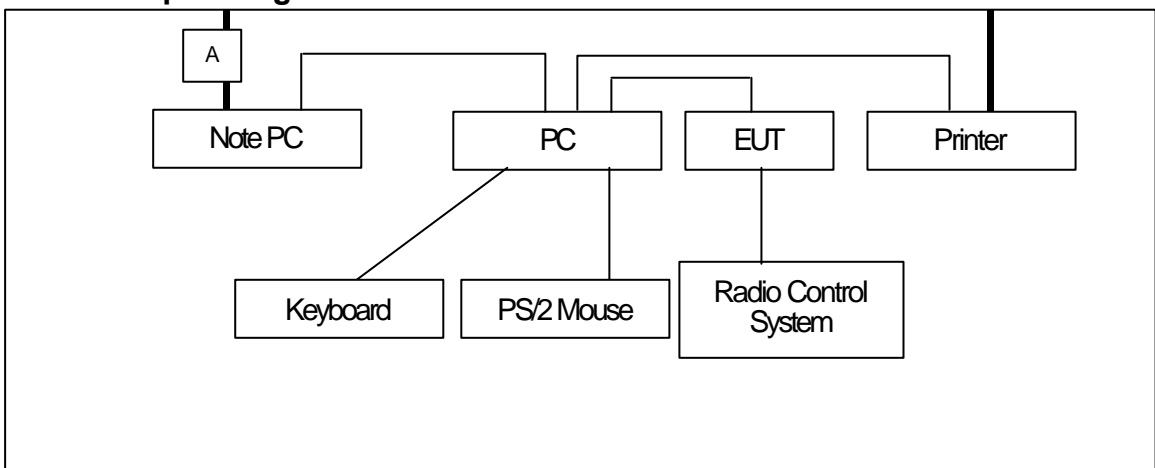
1.5 Cable List

Start		END		Cable Spec.	
Name	I/O Port	Name	I/O Port	Length	Shield
EUT	-	PC	USB	1.5	Shielded
	-	Radio Control System	I/O	1.5	Unshielded
PC	RGB	LCD Monitor	-	1.8	Shielded
	Parallel	Printer	-	1.8	Shielded
	PS/2 Mouse	PS/2 Mouse	-	1.8	Shielded
	Keyboard	Keyboard	-	1.7	Shielded
	USB	EUT	-	1.5	Shielded

1.6 System Configuration

Description	Model	Serial No.	Manufacturer
Main Board	SJ-S199	N/A	N/A

1.7 Test Set-Up Configuration



1.8 Measurement Procedure

Conducted Emission Testing was performed according ANSI C63.4:1992 in a shielded room with peripherals placed on a table, 0.8m high over a metal floor. It was located more than required distance away from the shielded room wall.

Radiated Emission Testing was performed according to ANSI C63.4:1992 at the open field test site. The EUT was placed in a 0.8m high table along with the peripherals. The turn table was separated from the antenna distance 10meters. Cables were placed in a position to produce maximum emissions as determined by experimentation, and operation mode was selected for maximum.

The frequencies and amplitudes of maximum emission were measured at varying azimuths, antenna heights and antenna polarities. Reported are maximized emission levels.

1.9 Standards Applicable for Testing

Table of tests to be carried out under FCC Part 15, Subpart B, CLASS B

Test Standards	Status
FCC Part 15,Subpart B, Class B	Applicable
Deviation from Standard	No Deviation

1.10 Summary of Results

The data collected shows that Model **NEXSTAR .46 SELECT ARF** complies with Part 15.109 and 107 of FCC Technical Rules.

The highest emission level observed was at 0.27MHz for Q/P mode conducted emission with a margin of 18.5dB and at 0.27MHz for AV mode conducted emission with a margin of 18.0dB and at 528.04MHz radiated emission with a margin of 4.83dB.

1.11 Alternative Type(s) / Model(s)

Model **NEXSTAR .46 SELECT ARF** was chosen to test. The models to be certified are identical to the certified model, **NEXSTAR .46 SELECT ARF** except for model name.

	Part Number	Model Name
Basic Model	HCAA17**	NEXSTAR .46 SELECT ARF
Added Models	HCAA1736 HCAA1738 HCAA1740 HCAA1742 HCAA1744 HCAA1746 HCAA1748 HCAA1750 GPMZ4510	NEXSTAR .46 SELECT ARF 72.510MHz NEXSTAR .46 SELECT ARF 72.550MHz NEXSTAR .46 SELECT ARF 72.590MHz NEXSTAR .46 SELECT ARF 72.630MHz NEXSTAR .46 SELECT ARF 72.670MHz NEXSTAR .46 SELECT ARF 72.710MHz NEXSTAR .46 SELECT ARF 72.750MHz NEXSTAR .46 SELECT ARF 72.790MHz USB TRANSMITTER INTERFACE

Radio Disturbance

2.1 Test Results

	Results
Conducted Emission	PASS
Radiated Emission	PASS

2.2 Frequency Range

Conducted Emission : 150 kHz - 30 MHz

Radiated Emission : 30 MHz - 1000 MHz, Above 1000MHz

2.3 Limits Of Conducted And Radiated Emission

2.3.1 Limit Of Conducted Emission Of FCC Part 15, Subpart B

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi - peak	Average	Quasi - peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Note : (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected there to, shall not exceed the level of field strengths specified above.

2.3.2 Limit Of Radiated Emission Of FCC Part 15, Subpart B

FREQUENCY (MHz)	Class A (at 10m)*	Class B (at 10m)*
	dBuV/m	dBuV/m
30-230	40	30
230-1000	47	37

* Detector Function : Quasi - Peak

2.4. Test of Conducted Emission**2.4.1 Test Equipments**

Equipment	Manufacturer	Model No.	Date of Calibration
Test Receiver	PMM	ESPC	Nov. 2002
LISN	EMCO	3825/2	Dec. 2002
LISN	EMCO	3825/2	Nov. 2002
Pulse Limiter	PMM	PL-01	Jul. 2003

2.4.2 Test SiteName and address : **SGS KES Co., Ltd.**

705, Dongchun-Dong, Yongin, Korea 449-840

2.4.3 Operating Environment

Temperature : 23.2 degree C

Humidity : 35.7 %RH

Atmospheric Pressure : 1001 mBar

2.4.4 Measurement Data**Measurement Bandwidth : 9kHz****Date of Test : October 10 2003**

FREQ. (MHz)	LEVEL(dB μ V)		LINE	LIMIT(dB μ V)		MARGIN(dB)	
	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.27	42.6	33.1	H	61.1	51.1	18.5	18.0
0.40	34.9	26.9	H	57.9	47.9	23.0	21.0
12.76	35.3	23.5	H	60.0	50.0	24.7	26.5
15.70	35.4	24.3	N	60.0	50.0	24.6	25.7
16.10	35.7	27.5	H	60.0	50.0	24.3	22.5
16.50	35.7	23.4	N	60.0	50.0	24.3	26.6

* Measurements using CISPR quasi-peak mode



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2.5 Test of Radiated Emission**2.5.1 Test Instruments**

Description	Manufacturer	Model No.	Date of Calibration
Test Receiver	R & S	ESVS30	Nov. 2002
Spectrum Analyzer	H.P	E4411A	Oct. 2002
RF Amplifier	H.P	8447F	May. 2003
Bilog Antenna	Schaffner	CBL6111C	Apr. 2003
RF Select s/w	DAIWA	CS201	Oct. 2002

2.5.2 Test SiteName and address : **SGS KES Co., Ltd.**

705, Dongchun-Dong, Yongin, Korea 449-840

2.5.3 Operating Environment

Temperature : 22.3 degree C

Humidity : 45.1 %RH

Atmospheric Pressure : 1011 mBar

2.5.4 Measurement Data

Measurement Bandwidth : 120kHz

Date of Test : October 11 2003

FREQ. (MHz)	LEVEL (dB μ V)	POL (H/V)	AF (dB)	CL (dB)	F/S (dB μ V/m)	LIMIT (dB μ V/m)	MARGIN (dB μ V)
144.01	5.7	V	11.24	3.88	20.32	30.0	9.68
195.46	5.1	V	8.85	4.50	18.45	30.0	11.55
200.45	9.8	V	8.88	4.30	22.98	30.0	7.02
312.02	8.7	H	14.60	5.30	28.60	37.0	8.40
366.40	10.1	H	15.80	5.73	31.63	37.0	5.37
528.04	6.5	V	18.24	7.42	32.16	37.0	4.83

* AF = Antenna Factor. ** CL = Cable Loss.

*** Margin=Each Frequency Limit Level(dBuV) - (Level+AF+CL)


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3. Photographs of Test

- Front View of Conducted Emission



- Rear View of Conducted Emission



- Front View of Radiated Emission



- Rear View of Radiated Emission

