NATIONAL CERTIFICATION LABORATORY

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FCC REPORT OF CLASS II PERMISSIVE CHANGE

For

Super Star Technology Co. Ltd.
No. 5, Lane 306, Tai Lin Rd
Tai-Shan Hsiang, Taipei Taiwan

Model: SKY 1410 Remote Control Receiver

FCC ID: JA7AP-1300N

December 15, 2001

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EXHIBITS

NCL PROJ.# SKY - 1410

1.0 Introduction

This report has been prepared on behalf of Super Star Technology Co. Ltd., to support the attached FCC Class II Change of an Unintentional Radiator. The Equipment Under Test was the **Model: SKY-1410 Remote Control Receiver**. Modification made: Slide switch added for manual over-ride.

Radio-Noise Emissions tests were performed according to the ANSI C63.4- 1992, ***"Method of Measurement of RFI from Low-Voltage Electronic Equipment in the Range of 9 KHz- 40 GHz"***. The measuring equipment conforms to ANSI C63.2 Specifications for electromagnetic Noise and Field Strength-Instrumentation.

Test was performed at National Certification Laboratory in Ellicott City, MD. Site description and site attenuation data have been placed on file with the FCC's sampling and Measurements Branch. FCC acceptance was granted on May 26, 1993.

1.1 Summary

The Super Star Technology Co. Ltd. **Model: SKY-1410 Remote Control Receiver**, complies with the Part 15 Radio Limits for an Unintentional Radiator.

2.0 Description of Equipment Under Test (EUT)

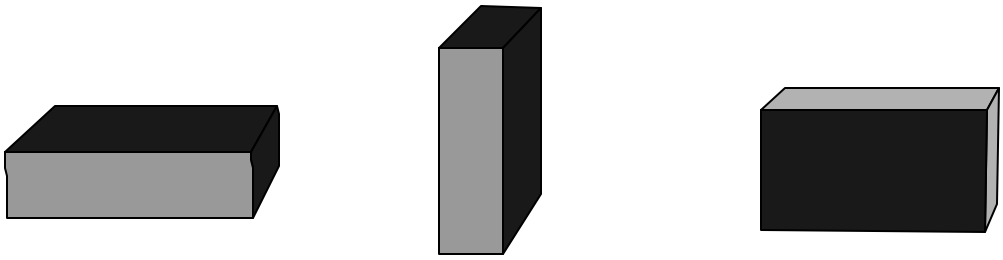
The EUT Features:

FEATURES	FREQUENCY
Internal PCB Antenna	304.00 MHz
Superregenerative Design	
Gas Valve Millivolt Switch Application	
120 VAC Operation	

3.0 Test Configuration

The EUT was setup on the test table in a manner which follows the general guidelines of ANSI C63.4, Section 6 "**General Operating Conditions and Configurations."** Tests were performed by exercising the receiver with an RF signal from the associated transmitter.

The EUT was configured in 3 orthogonal positions to determine the maximum RF level at each emission frequency. The data tables give the EUT position designation that produces worst-case field strength, in an X, Y, Z system. This is described below:



X **Y** **Z**

4.0 Conducted Emissions Scheme

The EUT is placed on an 80 cm high 1 X 1.5 meter non-conductive table. Power to the CPU is provided through a Solar Corporation 50 Ω/50 μH line Impedance Stabilization Network bonded to a 2.2 X 2 meter horizontal ground plane, and a 2.2 X 2 meter vertical ground plane. The LISN has its AC input supplied from filtered AC power source. A separate LISN provides AC power to the peripheral equipment. I/O cables are moved about to obtain maximum emissions.

The 50Ω output of the LISN is connected to the input of the spectrum analyzer and emissions in the frequency range of 450 kHz to 30 MHz are searched. The detector function is set to quasi-peak and the resolution bandwidth is set at 9 kHz, with all post-detector filtering no less than 10 times the resolution bandwidth for final measurements. All emissions within 20 dB of the limit are recorded in the data tables.

5.0 Radiated Emissions Scheme

The EUT was initially scanned in the frequency range 30 to 3040 MHz indoors, at a distance of one (1) meter to determine its emissions profile. The EUT was then placed on an 80 cm high 1 X 1.5 meter non-conductive motorized turntable for radiated testing on the 3-Meter open area test site. The emissions from the EUT are measured continuously at every azimuth by rotating the turntable. Waveguide horn and log periodic broadband antennas are mounted on an antenna mast

to determine the height of maximum emissions. The height of the antenna is varied between one (1) and four (4) meters. Both the horizontal and vertical field components are measured. The output from the antenna is connected to the input of the spectrum analyzer. The detector function is set to Peak. All emissions within 20 dB of the limit are recorded in the data table.

Measurements from 30-1000 MHz: The output from the antenna is connected to the input of the spectrum analyzer. The detector function is set to **Quasi-Peak**. The resolution bandwidth of the spectrum analyzer system is set at 120 kHz for the range 30-1000 MHz with all post-detector filtering no less than 10 times the resolution bandwidth.

Measurements from 1-4 GHz: The output from the horn antenna is connected to the input of a 30 dB pre-Amp, which is in turn attached to the spectrum analyzer. The detector function is set to **Peak**. The resolution bandwidth of the spectrum analyzer system is set at 1 MHz for the range 1-4 GHz.

To convert the spectrum analyzer reading into a quantified E-field level to allow comparison with the FCC limits. It is necessary to account for various calibration factors. These factors include cable loss (CL) and antenna factors (AF). The AF/CL in dB/m is algebraically added to the Spectrum Analyzer voltage in dBµV/m. This level is then compared with the FCC limit.

EXAMPLE:

Spectrum Analyzer Volt:	VdBµV
Composite factor:	AF/CLdB/m
Electric Field:	EdBµV/m= VdBµV + AF/CLdB/m
Linear Conversion:	EµV/m= Antilog (EdBµV/m/20)

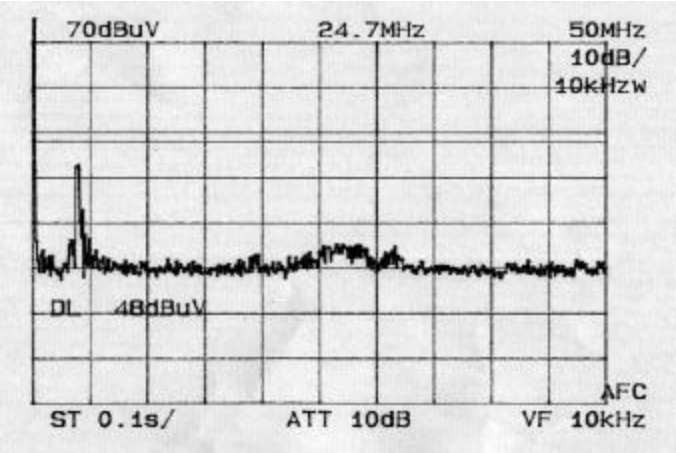
FCC RADIATED EMISSIONS DATA

CLIENT: **SUPER STAR**
EUT: **SKY-1410 RC**
CPU:
TUNE: **304 MHz**
MODE: **Receiver**

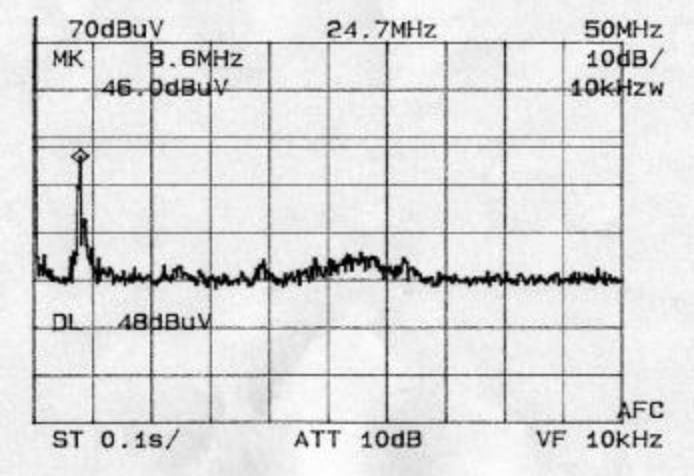
3 METER TEST **Quasi-Peak** **DATE: 12/15/01**

FREQUENCY MHz	POLARITY Ant.	POLARITY EUT	SPEC A dBuV	AF/C dB/m	AMP Gain dB	Average Factor dB	QP E-Field dbuV/m	QP Limit dBuV/m	MARGIN dB	CONDITION
54.23	V	Y	19.00	15.00	0.00	0.00	34.00	40.00	6.00	PASS
65.48	V	Y	15.00	16.00	0.00	0.00	31.00	40.00	9.00	PASS
78.91	V	Y	16.00	12.00	0.00	0.00	28.00	40.00	12.00	PASS
112.36	V	Y	19.00	15.00	0.00	0.00	34.00	43.50	9.50	PASS
234.56	H	Z	15.00	21.00	0.00	0.00	36.00	46.00	10.00	PASS
312.45	H	Z	14.00	14.00	0.00	0.00	28.00	46.00	18.00	PASS

1.1 AC Conducted Emissions Line 1 Plot:



1.2 AC Conducted Emissions Line 2 Plot:



FCC CLASS "B" CONDUCTED EMISSIONS DATA

CLIENT: SUPER STAR

EUT: SKY-1410 RC RX

CPU:

TUNE: 304 Mhz

MODE: Receive

LINE 1-Neutral: Quasi-Peak Level Date: 12/15/2001

FREQUENCY MHz	SPEC. Ana. dBuV	Calc. Volt. uV	FCC LIMIT uV	MARGIN dB	CONDITION
3.600	42.40	131.83	250.00	5.56	PASS
4.100	32.80	43.65	250.00	15.16	PASS
26.200	25.20	18.20	250.00	22.76	PASS

LINE 2-Phase: Quasi-Peak Level

FREQUENCY MHz	SPEC. Ana. dBuV	Calc. Volt. uV	FCC LIMIT uV	MARGIN dB	CONDITION
3.600	46.00	199.53	250.00	1.96	PASS
4.100	32.60	42.66	250.00	15.36	PASS
27.600	25.80	19.50	250.00	22.16	PASS

TEST ENGINEER:

Brian Haghtalab

Table 1

Support Equipment

MANUFACTURER	FCC ID #	SERIAL #
NONE	N/A	

Table 2

Interface Cables Used

EUT to Printer	N/A
EUT to Modem	N/A
Modem (connected to telephone jack)	N/A
EUT Power	N/A
Note:	

Table 3

Measurement Equipment Used

The following equipment is used to perform measurements:

EQUIPMENT	SERIAL NUMBER
Wavetek 2410A 1100 MHz Signal Generator	1362016
EMCO Model 3110 Biconical Antenna	1619
EMCO Model 3146 Log Periodic Antenna	1222
Antenna Research LPD-3500 Log Antenna	1005
Advantest Model R4131D Spectrum Analyzer	54378A
Solar 8012-50-R-24-BNC LISN	927230
4 Meter Antenna Mast	None
Motorized Turntable	None
RG-233U 50 ohm coax Cable	None

EUT PHOTOGRAPHS