ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
CERTIFICATION TO FCC PART 15 REQUIREMENTS

for

INTENTIONAL RADIATOR

27 MHz RF KEYBOARD

MODEL NO: FK720

FCC ID NO: FSQ010412

PROJECT NO: 01T0783

ISSUE DATE: JUNE 01, 2001

Prepared for
FOCUS ELECTRONIC CO., LTD.
5F, 306, SEC 4, CHENGTEH ROAD
TAIPEI, TAIWAN ROC

Prepared by
COMPLIANCE ENGINEERING SERVICES, INC.
d.b.a.
COMPLIANCE CERTIFICATION SERVICES
561F MONTEREY ROAD
MORGAN HILL, CA 95037, USA
TEL: (408) 463-0885
FAX: (408) 463-0888

1. VERIFICATION OF COMPLIANCE

COMPANY NAME	:	FOCUS ELECTRONIC CO., LTD.. 5F, 306, SEC 4 TAIWAN, TAIPEI ROC
CONTACT PERSON	:	HWA, CHIN-SHIU
TELEPHONE NO.	:	(2) 2880-5512
EUT DESCRIPTION	:	27 MHz RF KEYBOARD
MODEL NAME/NUMBER	:	FK720
SERIAL NUMBER	:	99714516
FCC ID	:	FSQ010412
DATE TESTED	:	JUNE 01, 2001
PROJECT NUMBER	:	01T0783

TYPE OF EQUIPMENT	REMOTE CONTROL
EQUIPMENT TYPE	27 MHZ RF KEYBOARD
MEASUREMENT PROCEDURE	ANSI 63.4 / 1992
LIMIT TYPE	CERTIFICATION
FCC RULE	CFR 47, PART 15.227

The above equipment was tested by Compliance Engineering Services, Inc. for compliance with the requirements set forth in CFR 47, PART 15. This said equipment in the configuration described in this report shows that maximum emission levels emanating from equipment are within the compliance requirements. **Warning** : This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification will constitute fraud and shall nullify the document.

Reviewed By *Approved By*

THU CHAN / EMC SENIOR ENGINEER
COMPLIANCE CERTIFICATION SERVICES

STEVE CHENG / EMC ENGINEERING MANAGER
COMPLIANCE CERTIFICATION SERVICES

2. PRODUCT DESCRIPTION

CHASSIS TYPE	**PLASTIC**
Fundamental Frequency	**27.0975 or 27.1875MHz**
Power Source	**3 VOLT BATTERY**
Transmitting Time	**CONTINUOUS**
NO. OF LAYER	**1**
Local Oscillators	**N/A**

3. TEST FACILITY

The 3/10/30 meter open area test site and conducted measurement facility used to collect the radiated data is located at 561F Monterey Road, Morgan Hill, California, U.S.A. A detailed description of the test facility was submitted to the Commission on May 27,1994.

4. MEASUREMENT STANDARDS

The site is constructed and calibrated in conformance with the requirements of ANSI C63.4/1992.

5. TEST METHODOLOGY

For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 KHz, up to at least the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. (CFR 47 Section 15.33)

6. MEASUREMENT EQUIPMENT USED

TEST EQUIPMENTS LIST				
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
Pre-Amplifier,25 dB	HP0.1 - 1300MHz	8447D (P5)	2944A06550	9/19/01
Antenna, Bicon	Eaton30 - 200MHz	94455-1	1214	8/10/01
Antenna, LP	EMCO200 - 2000MHz	3146	9107-3163	8/10/01
Spectrum Analyzer	HP100Hz - 22GHz	8566B	3014A06685	6/16/01
Spectrum Display	HP	85662A	3026A19146	6/16/01
Quasi-Peak Detector	HP9K - 1GHz	85650A	3145A01654	6/16/01
Antenna, Loop	EMCO_Active Loop Antenna	6502	N/A	2/23/03

7. POWERLINE RFI LIMIT

CONNECTED TO AC POWER LINE	SECTION 15.207
CARRIER CURRENT SYSTEM IN THE FREQUENCY RANGE OF 450 KHz TO 30MHz	SECTION 15.205 AND SECTION 15.209, 15.221, 15.223, 15.225 OR 15.227, AS APPROPRIATE.
BATTERY POWER	NOT REQUIRED.

8. RADIATED EMISSION LIMITS

GENERAL REQUIREMENTS	SECTION 15.209
RESTRICTED BANDS OF OPERATION	SECTION 15.205
OPERATION WITHIN THE BAND 26.96 - 27.28 MHZ	SECTION 15.227

9. SYSTEM TEST CONFIGURATION

The EUT was configured for testing in a typical fashion (as a customer would normally use it).

Radiated Open Site Test Set-up

10. EQUIPMENT MODIFICATION

To achieve compliance to FCC Section 15.227 technical limits, the following change(s) were made during compliance testing:

NOT APPLICABLE

11. TEST PROCEDURE AND RESULT

Powerline RFI Limits	Eut	Radiated Emission Limits	Eut
SECTION 15.207		SECTION 15.209	x
SECTION 15.205, 15.209, 15.221, 15.223, x 15.225 OR 15.227		SECTION 15.205	x
BATTERY POWER	X	SECTION 15.227	X

11.1 Radiated Emission Test Procedure and Result

1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 3 meter from the EUT. The EUT antenna was mounted vertically as per normal installation.

2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205.

3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The readings so obtained are recorded in the data listed below.

COMPLIANCE Certification Services

FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

561F MONTEREY ROAD, SAN JOSE, CA 95037-9001
PHONE: (408) 463-0885 FAX: (408) 463-0888

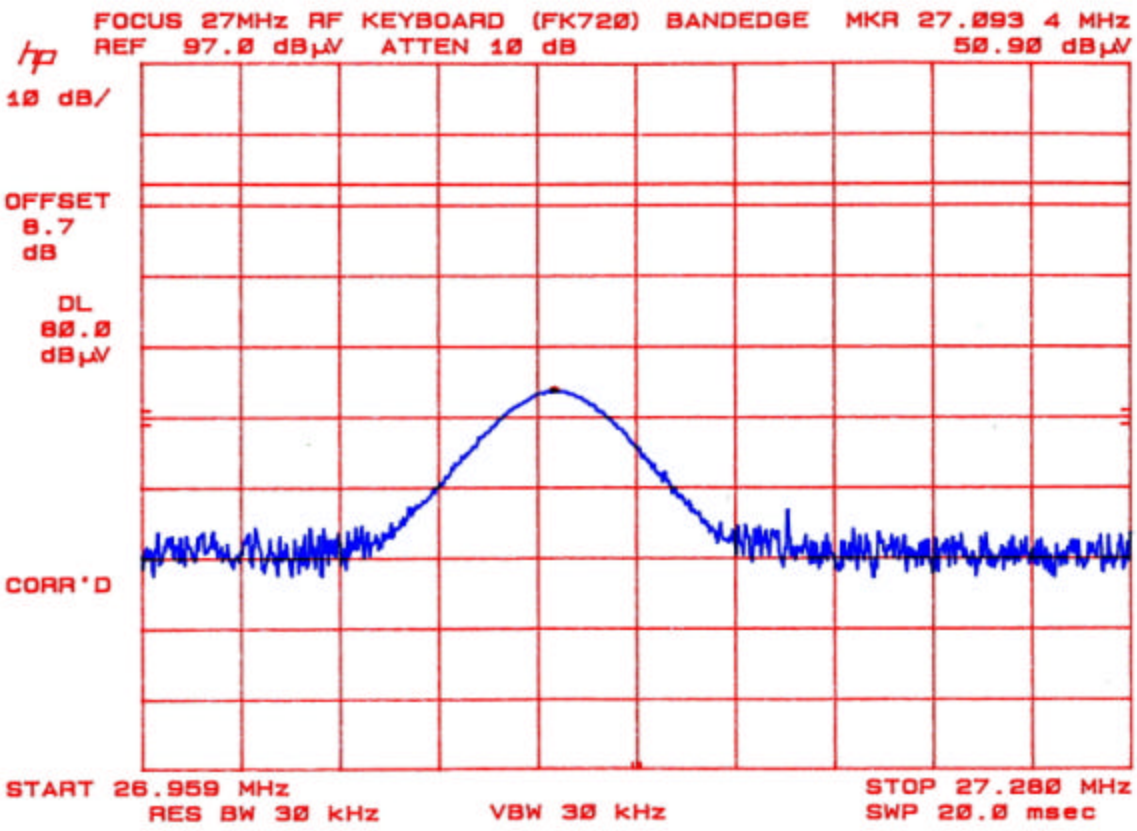
Project #: 01T0783-1
Report #: 010511C1
Date& Time: 05/11/01 11:06 AM
Test Engr: Jesse Saldivar

Company: Focus Electronic Co., LTD.
EUT Description: 27MHz RF Keyboard with PS/2 Interface (M/N: FK720)
Test Configuration : EUT Only
Type of Test: FCC 15.227 & 15.209
Mode of Operation: Transmitting Continuously

○ A-Site ○ B-Site ◉ C-Site ○ F-Site 6 Worst Data Descending

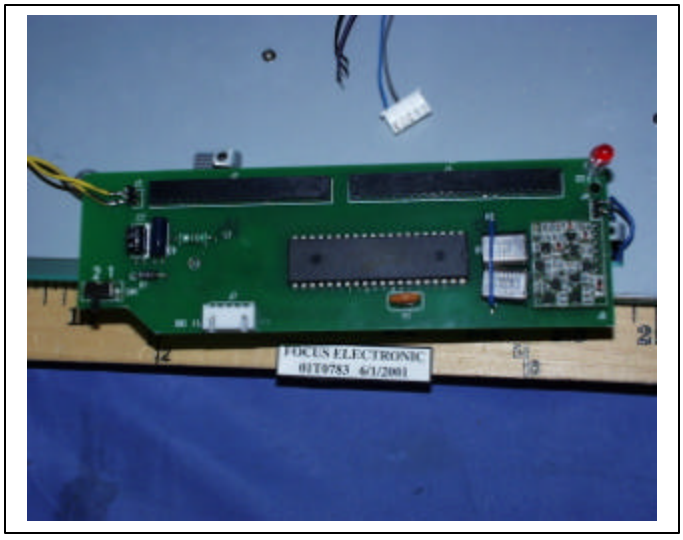
Freq. (MHz)	Reading (dBuV)	AF (dB)	Closs (dB)	Pre-amp (dB)	Level (dBuV/m)	Limit FCC_B	Margin (dB)	Pol (H/V)	Az (Deg)	Height (Meter)	Mark (P/Q/A)
108.38	50.10	11.14	1.47	27.12	35.59	43.50	-7.91	3mH	180.00	3.00	P
135.46	55.20	14.36	1.66	27.03	44.19	43.50	0.69	3mH	90.00	2.50	P
135.46	53.60	14.36	1.66	27.03	42.59	43.50	-0.91	3mH	90.00	2.50	QP
81.28	43.40	8.75	1.22	27.22	26.15	40.00	-13.85	3mH	180.00	3.00	P
117.41	46.00	10.80	1.53	27.10	31.23	43.50	-12.27	3mH	270.00	3.00	P
99.35	45.40	11.41	1.40	27.14	31.07	43.50	-12.43	3mH	270.00	3.00	P
126.44	48.80	12.15	1.59	27.06	35.49	43.50	-8.01	3mH	90.00	3.00	P
144.50	43.30	16.16	1.71	26.99	34.18	43.50	-9.32	3mH	270.00	2.50	P
Using loop antenna:											
27.19	69.49	8.00	0.77	27.36	50.90	80.00	-29.10	3mH	180.00	1.00	P
27.19	66.50	8.00	0.77	27.36	47.91	80.00	-32.09	3mV	180.00	1.00	P

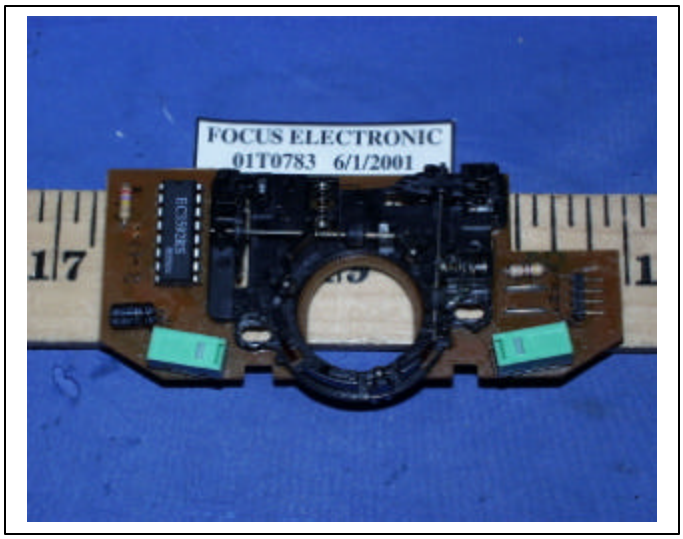
Total data #: 10
V.2c

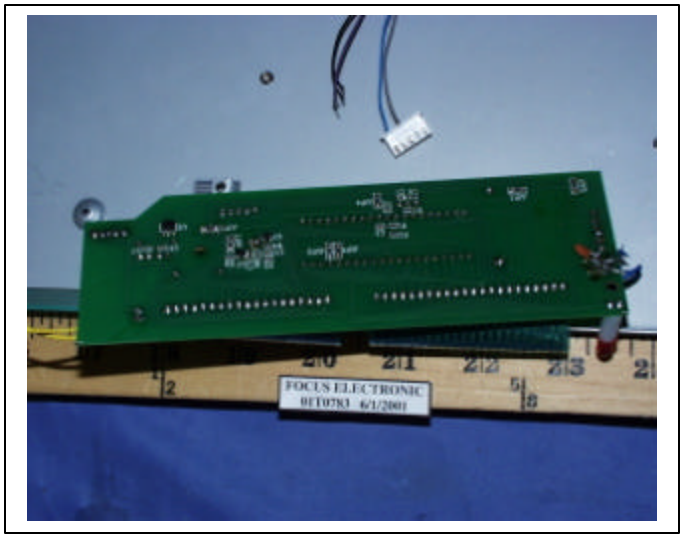


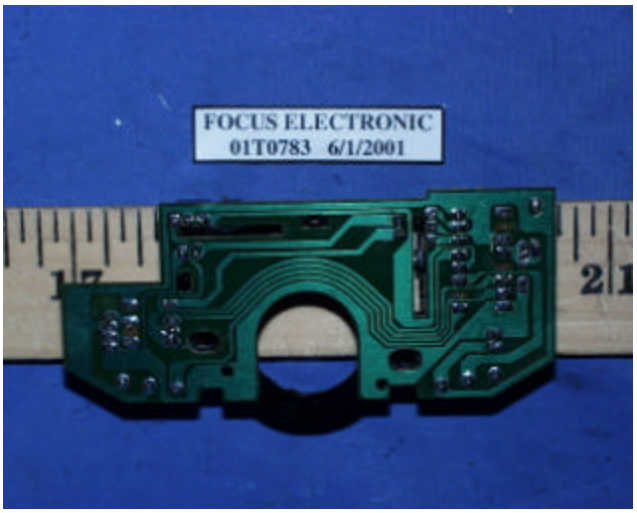
12. Appendix

External & Internal Photos









Schematics

Please refer to attached sheets.

Block Diagram

Please refer to attached sheets.

User Manual

Please refer to attached sheets.