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GENERAL INFORMATION

1 APPLICANT : SILITEK CORPORATION.

2 ADDRESS : 10F, 25, Sec. 1, Tung Hwa S. Rd.,
Taipei, Taiwan, R. O. C.

3 MANUFACTURER : SILITEK CORPORATION.

4 ADDRESS : 10F, 25, Sec. 1, Tung Hwa S. Rd.,
Taipei, Taiwan, R. O. C.

5 DESCRIPTION OF EUT :

EUT	:	COMPUTER KEYBOARD
FCC ID	:	GYUR49SK
Model Number	:	SK-720C
Serial #	:	N/A
Data Cable	:	UN-SHIELDED
Power Cord	:	N/A
Power Supply Type	:	FROM PC

6 FEATURES OF EUT :

6.1	PC/AT, PS/2	This KEYBOARD is designed to be AT,PS/2 mode Mode Selection selection is done by auto-switchable.
6.2	Mode	There are three LEDs on the KEYBOARD to indicate Indicators 'Caps Lock', 'Num Lock' and 'Scroll Lock'. The LEDs are 'toggled'. The first depression of the key turns on the LED. The second depression turns the LED off and so on. LEDs are off on power-up or software reset, but will flash during power-on initialization.
6.3	Type Ahead	The KEYBOARD has 16 keys type ahead capability.This means that you can depress 16 keys before host can receive. If more keys are pressed before the host allows KEYBOARD output, the additional data is lost.
6.4	Typematic	With the exception of the Pause key, all keys are Delay and typematic. When a key is pressed and held down, the Repeat KEYBOARD delays 0.5 sec. and begins sending a make Rate Code for that key at a rate of 10.9 characters per second. (The delay is called typematic Delay and the rate is called Repeat Rate.) If two or more keys are pressed, only the last key pressed is repeated at the repeat rate. Typematic operation stops only when the last key pressed is released, even if other keys are still held down. If a key is pressed and held down while KEYBOARD transmission is disable, only the first make code is stored in the type ahead buffer. This prevents the type ahead buffer overflow as result of typematic action. In AT mode, the typematic delay and repeat rate are programmable, this is done by command from host. The default data: Typematic Delay = 0.5 sec. Repeat Rate = 10.9 characters per sec.

6.5	Diagnostic	The KEYBOARD microprocessor will perform a diagnostic test self-test after Power-up or after the host system signals the KEYBOARD to perform a software Reset. The microprocessor will check its data memory locations, do a sum-check internal RAM check and check for any depressed keys. If the diagnostic test is correct, the KEYBOARD will transmit an 'AA HEX' code. This will be the first transmission following a Power-Up condition. If the diagnostic test was unsuccessful, then the KEYBOARD will transmit an 'FD/FC HEX' code. In either case, after the diagnostic check the KEYBOARD will begin normal operation.

MODIFICATION LIST

THE FOLLOWING ACCESSORIES WERE ADDED TO THE EUT DURING TESTING :

NO MODIFICATION BY HOMETEK TECHNOLOGY INC.

CONDUCTED POWER LINE TEST

1 TEST INSTRUMENTS & FACILITIES

The following test Instruments was used during the conducted test :

Item	Instruments/ Facilities	Specification	Manufacturer	Model #	Date Of Cal.
1	EMI Receiver	9KHz ~ 30MHz	ROHDE & SCHWARZ	ESHS 30	MAR/99
2	LISN	50Ω/50uH/100A 9KHz ~ 30MHz	SCHWARZ BECK	NNLK 8121	MAR/99
3	LISN	9KHz ~ 30MHz	ROHDE & SCHWARZ	ESH3-Z5	MAR/99
4	ESXS-K1	Version 2.03b	ROHDE & SCHWARZ	1082.9678.02 840.913/246	N/A
5	Cables	10KHz ~ 30MHz		NO : 10	JUL/99

2 TEST PROCEDURE

2.1 The EUT was tested according to **ANSI C63.4 - 1992 & CISPR 22**.

2.2 The EUT was placed 0.4 meter from the conducting wall of shielding room and kept at least 0.8 meter from any other grounded conducting surface.

2.3 The frequency range form 0.15 MHz to 30 MHz was investigated.

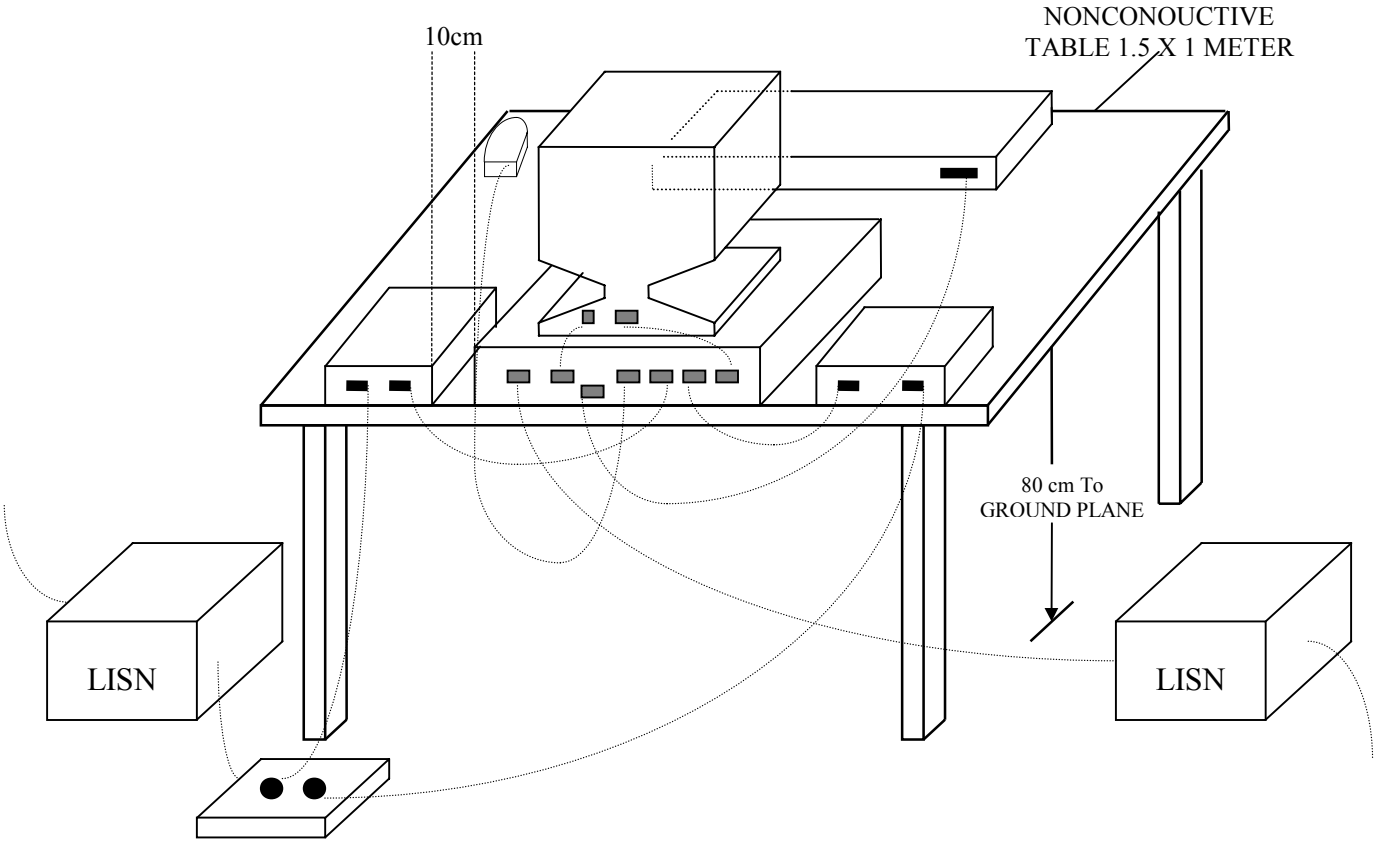
2.4 The LISN used was 50 Ohm / 50 uHenry as specified by **ANSI C63.4 - 1992 & CISPR 22.** and AC power source is 110V/60Hz.

2.5 All the support peripherals are connect to the other LISN.

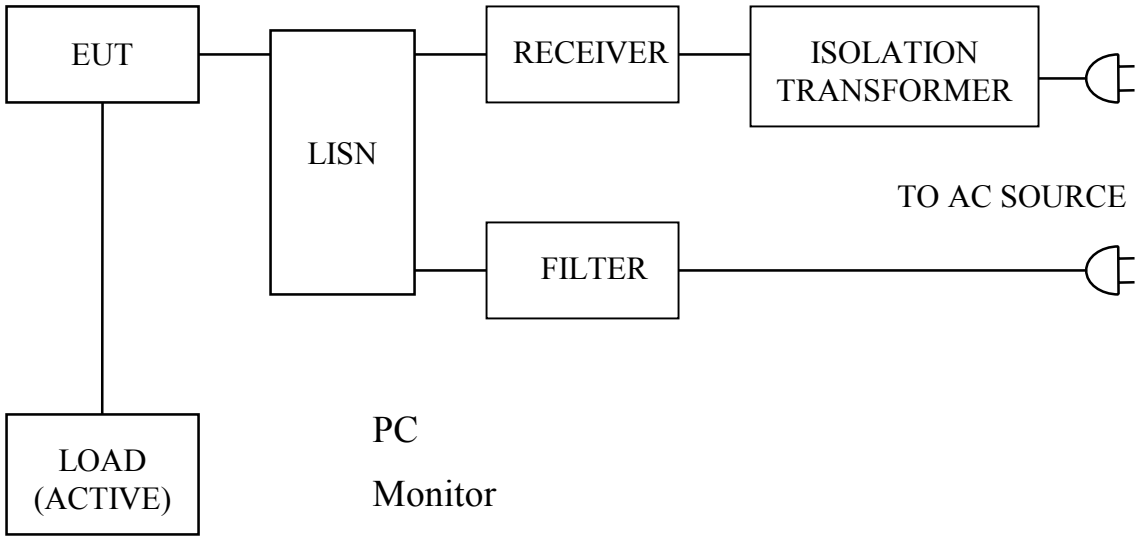
2.6 Cables and peripherals were moved to find the maximum emission levels for each frequency.

3 TEST SETUP

3.1 Typical : Setup Of Conducted Test



3.2 Block Diagram Of Conducted Test



PC

Monitor

Printer

Modem

Mouse

4 CONFIGURATION OF THE EUT

The EUT was configured according to **ANSI C63.4 - 1992 & CISPR 22.** All I/O ports were connected to the appropriate peripherals. All peripherals and cables are listed below (including internal device) :

4.1 EUT

EUT Type	:	☐Proto Type Engineer Type ☐Mass Production
Condition when received	:	Good ☐Damage :
Connector Type	:	Metal Type ☐Plastic Type
Device	:	COMPUTER KEYBOARD
Applicant	:	SILITEK
Manufacturer	:	SILITEK
Model Number	:	SK-720C
Serial Number	:	N/A
FCC ID	:	GYUR49SK
Data Cable	:	Un-Shielded, 1.6 m
Power Cord	:	N/A

4.2 PERIPHERALS

Host Personal Computer

Manufacturer	:	ASUS
Model Number	:	P2B
Serial Number	:	N/A
FCC ID	:	FCC DoC
Data Cable	:	Shielded
Power Cord	:	Shielded

Monitor

Manufacturer	:	GVC
Model Number	:	M1448P
Serial Number	:	4PTA730020050
FCC ID	:	DK4M1448
Data Cable	:	Shielded, 1.5 m, Connected to the VGA port
Power Cord	:	Un-Shielded, 1.8 m

Printer

Manufacturer	:	HP
Model Number	:	DJ400
Serial Number	:	MY77M1C3Q8
FCC ID	:	B94C2642X
Data Cable	:	Shielded, 1.5 m, Connected to the Printer port
Power Cord & Adaptor	:	Un-Shielded, 1.8 m

Modem

Manufacturer	:	ACEEX
Model Number	:	1414
Serial Number	:	9013525
FCC ID	:	IFAXDM1414
Data Cable	:	Un-Shielded, Connected to the COM port
Power Cord & Adaptor	:	Un-Shielded, 1.8 m

Mouse (PSII)		
Manufacturer	:	HP
Model Number	:	M-S34
Serial Number	:	LZA72270727
FCC ID	:	DZL211029
Data Cable	:	Shielded, 1.8 m, Connected to the PSII port
Power Cord	:	N/A

4.3 REMARK :

5 EUT OPERATING CONDITION

5.1 Operating condition is according to **ANSI C63.4 - 1992 & CISPR 22.**

5.2 The oscillator frequency of the EUT were 4 MHz.

5.3 Turn on the power 110VAC/60Hz of all equipments.

5.4 Test program sent "H" pattern to peripherals as following :

5.4.1 Printer

5.4.2 Monitor

5.4.3 Modem

5.4.4 Keyboard

6 LIMIT OF CONDUCTED POWER LINE EMISSION CLASS B :

CISPR 22

Frequency Range	Quasi Peak	Average
0.15 ~ 0.5 MHz	66 - 56 dBuV	56 - 46 dBuV
0.5 ~ 5 MHz	56 dBuV	46 dBuV
5 ~ 30 MHz	60 dBuV	50 dBuV

6.1 In the above table, the tighter limit applies at the band edges.

7 RESULT OF CONDUCTED POWER LINE TEST

7.1 The frequency range from 0.15 MHz to 30 MHz was investigated. All readings are quasi-peak values and average.

7.2 IF bandwidth : 9 kHz, Meas Time : 1 sec.

7.3 Temperature : 27 □, Humidity : 75 % RH.

7.4 Deviations from the specifications : None

7.5 Quasi-Peak :

Frequency (MHz)	Line 1 (dBuV)	Line 2 (dBuV)	Limit (dBuV)
0.192	25.74	25.58	63.93
0.337	33.56	32.25	59.28
1.115	38.10	37.39	56.00
3.995	36.23	37.44	56.00
8.185	29.14	24.59	60.00
28.950	25.70	24.45	60.00

7.6 Average :

Frequency (MHz)	Line 1 (dBuV)	Line 2 (dBuV)	Limit (dBuV)
0.192	24.57	24.09	53.93
0.337	33.69	32.01	49.28
1.115	35.22	34.57	46.00
3.230	21.67	21.46	46.00
8.900	22.96	21.70	50.00
28.950	24.01	20.91	50.00

REMARK :

1. Model : SK-720C
2. Measuring mode :
3. Uncertainty in conduction emission measured : < ± 2.0dB.
4. " * ", means this data is worse case emission level.
5. Result : **PASSED**

8 PHOTO OF CONDUCTED POWER LINE TEST

Front View

Rear View

RADIATED EMISSION TEST

1 TEST INSTRUMENTS & FACILITIES

The following test Instruments was used during the radiated emission test :

Item	Instruments /facilities	Specification	Manufacturer	Model # / S/N#	Location	Date of Cal.
1	OPEN AREA TEST SITE	☐ OATS 1 OATS 2				NOV/99 JUN/99
2	EMI TEST RECEIVER	20MHz ~ 5GHz	ROHDE & SCHWARZ	ESBI 845636/007	Open Site I	SEP/99
3	PRE-AMPLIFIER	0.1MHz ~ 1.3 GHz	HP	8447D 1937A02095	Open Site II	MAY/99
4	EMI TEST RECEIVER	20Hz ~ 26.5GHz	ROHDE & SCHWARZ	ESMI 845442/006	Open Site II	APR/99
5	PRE-AMPLIFIER	20MHz ~ 7GHz	ROHDE & SCHWARZ	ESMI-Z7 664126/008	Open Site I	SEP/99
6	ANTENNA (BI-LOG)	25MHz ~ 2GHz	SCHAFFNER	CBL6112B S/N : 2614	Open Site II	JUN/99
7	ANTENNA (BI-LOG)	25MHz ~ 2GHz	SCHAFFNER	CBL6112B S/N : 2611	Open Site I	JUN/99
8	CABLES	30MHz ~ 1GHz		No. 2, No. 4 No. 1, No. 3	OATS 1 OATS 2	NOV/99 JUN/99
9	ANTENNA (DIPOLE)	30 ~ 300MHz	ROHDE & SCHWARZ	HZ-12 842899/08		JUL/99
10	ANTENNA (DIPOLE)	300 ~ 1000MHz	ROHDE & SCHWARZ	HZ-13 842007/0004		JUL/99
11	EMIVM	30 ~ 1000MHz	AUDIX	A582445 A582443	OATS 1 OATS 2	N/A

Note : 1. Items 1 ~ 8 upon which need to calibrated are with period of 1 year, except item 9-10.

2. Items 4 (for Site 2) is used for the final measurement.

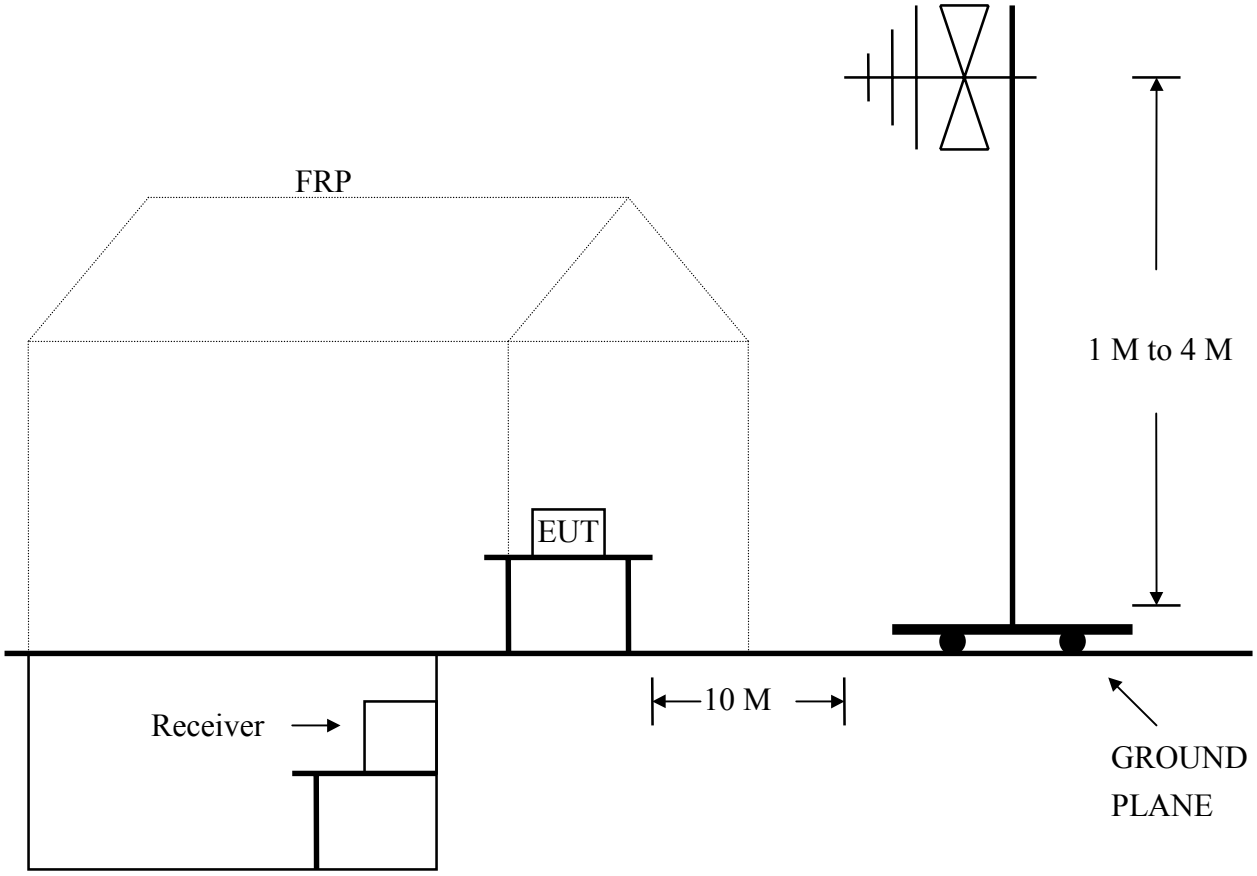
2 TEST PROCEDURE

2.1 The EUT was test according to **ANSI C63.4 - 1992 & CISPR 22.**

2.2 The radiated test was performed at HomeTek Lab's Open Site II.

2.3 The frequency range from 30 MHz to 1 GHz, the measurement were made at 10 meters, with a BI-log antenna.

3 TEST SETUP



4 CONFIGURATION OF THE EUT

Same as "Conducted Power Line test", section 4

5 EUT OPERATING CONDITION

5.1 Same as "Conducted Power Line test", section 5

5.2 The radiated emission in the frequency range from 30 MHz - 1000 MHz was test in a horizontal and vertical polarization at HomeTek Lab's open site II.

6 LIMIT OF RADIATED EMISSION CLASS B :

CISPR 22

Frequency (MHz)	Measurement Distance	Limit (dBuV/m)
30 - 230	10 (M)	30
230 - 1000	10 (M)	37

6.1 The tighter limit shall apply at the edge between two frequency bands.

6.2 Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

7 RESULT OF RADIATED EMISSION TEST

7.1 The frequency range from 30 MHz to 1 GHz was investigated. All readings are quasi-peak values with resolution bandwidth of 120 kHz.

7.2 The measurements above 1 GHz with a resolution bandwidth of 1 MHz are peak reading at 10 meters.

7.3 The measurements were made at 10 meters of HomeTek Lab's open site II.

7.4 Temperature : 27 □, Humidity : 75 % RH.

7.5 Radiated Emission data : **Horizontal**

Frequency (MHz)	Reading Level (dBuV)	ANT factor (dB/m)	Cable Loss (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)
85.03	15.54	7.80	1.14	24.48	30
132.95	9.71	11.15	1.40	22.26	30
142.86	13.59	10.55	1.45	25.59	30
157.64	12.03	9.27	1.40	22.70	30
193.30	13.88	8.77	1.63	24.28	30
211.87	14.28	7.77	1.65	23.70	30
418.67	7.35	16.78	2.39	26.52	37
501.18	8.35	17.30	2.56	28.21	37

- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 501.18 MHz .
- Corrected Reading : (8.35) + (17.30) + (2.56) = 28.21 . (Emission Level)

7.6 Radiated Emission data : **Vertical**

Frequency (MHz)	Reading Level (dBuV)	ANT factor (dB/m)	Cable Loss (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)
83.68	18.12	7.43	1.04	26.59	30
157.40	9.41	9.33	1.37	20.11	30
164.54	10.20	9.20	1.47	20.87	30
216.05	11.77	8.10	1.68	21.55	30
267.28	13.09	12.57	1.83	27.49	37
300.10	18.02	12.90	1.96	32.88	37
481.60	14.03	17.32	2.44	33.79	30
598.31	5.89	18.56	2.77	27.22	37

- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 598.31 MHz .
- Corrected Reading : (5.89) + (18.56) + (2.77) = 27.22 . (Emission Level)

REMARK :

1. Model : SK-720C
2. Measuring mode :
3. Uncertainty in radiated emission measured : < ± 4.0dB.
4. " * ", means this data is worse case emission level.
5. Result : **PASSED**

8 PHOTO OF RADIATED EMISSION TEST

Front View

Rear View

PHOTO OF FCC ID LABEL

SAMPLE OF FCC ID LABEL :

FCC ID : GYUR49SK

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference. And (2) this device must accept any interference that may cause undesired operation.

PHOTOS OF EUT

EUT Front View

EUT Rear View

PHOTOS OF EUT

EUT Inside View

EUT Top and Bottom Case Inside View

PHOTOS OF EUT

Main Board Component Side View

PHOTOS OF EUT

Main Board Solder Side View

PHOTOS OF EUT

Circuit Board Front View

Circuit Board Rear View

PHOTOS OF EUT

Cover Case Front View

Cover Case Rear View

PHOTOS OF EUT

Key Pad