



MAX LIGHT

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EXHIBIT A

SAMPLE LABEL



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Label Format:

This device complies with Part15 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 received, including.
Interference that may cause undesired operation.

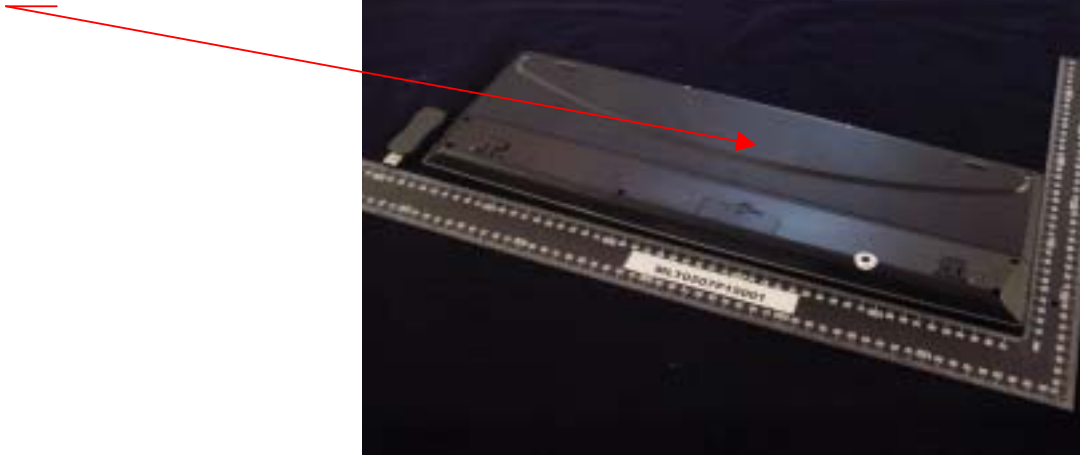
Model No. : ACK-2060UMRD, ACK-2070UMRD, ACK-2080UMRD,
SOL-2110UMRF

FCC ID : L2BACK2060UMRD

Label Position:

Equipment Label

5cmX3cm



Rear View



MAX LIGHT

EXHIBIT B

Measurement report

Measurement Report

Part 15 Subpart B & C (15.227)

Product: ***Slim Compact Multimedia Keyboard***
Applicant: ***Solid Year Co., Ltd.***
FCC ID: ***L2BACK2060UMRD***
Model No.: ***ACK-2060UMRD, ACK-2070UMRD,***
ACK-2080UMRD, SOL-2110UMRF,
Report No.: ***MLT0507P15001R1***
Issue Date: ***July 26, 2005***

Test By

Max Light Technology Co.,Ltd.

*Room 5, 8F, No.125, Section 3 Roosevelt Road,
Taipei, Taiwan., R.O.C.*

Tel: 886-2-2363-2447 Fax: 886-2-2363-2597

The test report consists of 27 pages in total. It may be duplicated completely for legal use with the allowance of the applicant. It shall not be reproduced except in full, without the written approval of our laboratory.



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MEASUREMENT REPORT

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CERTIFICATION

We here by verify that :

The test data, data evaluation, test procedures and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2003. All test were conducted by *MLT (Max Light Technology Co., Ltd) Room 5, 8F, No.125, Section 3 Roosevelt Road, Taipei, Taiwan, R.O.C* Also, we attest to the accuracy of each.

We further submit that the energy emitted by the sample EUT tested as described in the report is in compliance with Class B radiated and conducted emission limit of FCC Rules Part 15 Subpart B & C (15.227).

EUT : Slim Compact Multimedia Keyboard

Applicant : Solid Year Co., Ltd.
No. 3, Pao Chi Lane, Siu Shui Hsiang,
Chang Haw Hsien, Taiwan R.O.C.

Manufacturer : Wonder Union Factory
Tianxin Industrial Area, Qiaotou, Dongguan,
Guandong, China

Model No : ACK-2060UMRD, ACK-2070UMRD,
ACK-2080UMRD, SOL-2110UMRF,

FCC ID : L2BACK2060UMRD

Prepared by : *Country Huang* Approved by : *Roger Chen*
Country Huang *Roger Chen*



I. GENERAL

1.1 Introduction

The following measurement report is submitted on behalf of Solid Year Co., Ltd. In support of a Class B Digital Device certification in accordance with Part 2 Subpart J and Part 15 Subpart A And B&C of the Commission's and Regulations.

1.2 Description of EUT

EUT : Slim Compact Multimedia Keyboard

Applicant : Solid Year Co., Ltd.
No. 3, Pao Chi Lane, Siu Shui Hsiang,
Chang Haw Hsien, Taiwan R.O.C.

Manufacturer : Wonder Union Factory
Tianxin Industrial Area, Qiaotou, Dongguan,
Guandong, China

Model No : ACK-2060UMRD, ACK-2070UMRD,
ACK-2080UMRD, SOL-2110UMRF,

FCC ID : L2BACK2060UMRD

Power Type : TX: Battery 3Vdc, RX: 5Vdc via PC

Operating Frequency : 27.14MHz

Type of Modulation : FSK

Type of Antenna : Loop Antenna

During testing the EUT was operated at Tx or Rx mode for each emission measured. This was done in order to ensure that maximum emission levels were attained.



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1.3 Summary Of Tests

47 CFR Part 15 Subpart C			
Reference	Test	Results	Note
15.207	AC Power Conducted Emission	PASS	
15.227	Transmitter Radiated Emissions	PASS	
15.227	26dB Bandwidth	PASS	



1.4 Description of Support Equipment

In order to construct the minimum system which required by the ANSI C63.4-2003, following equipments were used as the support units.

Computer : IBM
Model No. : 16W
Serial No. : BNL345M
FCC ID : FCC DOC

Keyboard : IBM
Model No. : KB-9930
Serial No. : 09N5395
FCC ID : FCC DOC

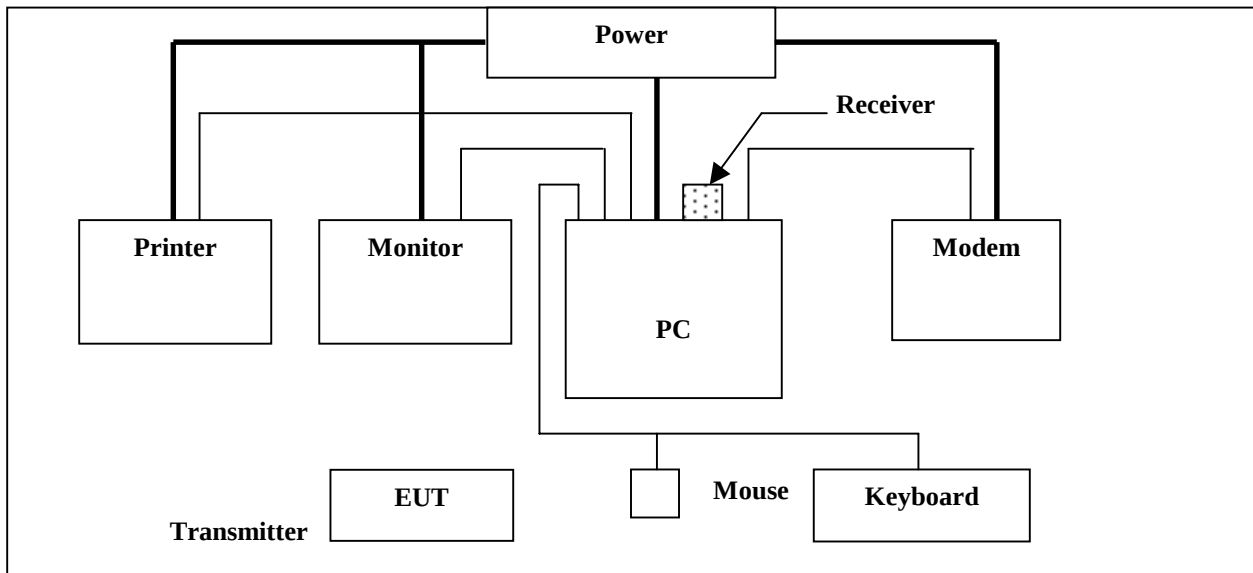
Monitor : IBM
Model No. : 10L6145 030
Serial No. : 23-092079
FCC ID : FCC DOC

Mouse : IBM
Model No. : 0180-05N
Serial No. : 23-96142
FCC ID : EMJMUSJJ

Printer : Panasonic
Model No. : KX-P10801
Serial No. : N/A
FCC ID : FCC DOC

Modem : ASKEY
Model No. : WS1414SV
Serial No. : N/A
FCC ID : FCC DOC

1.5 Configuration of System Under Test



During testing the EUT(Keyboard) transmit the RF signal to receiver, and the receiver connected to PC.

1.6 Test Procedure

All measurements contained in this report were performed according to the techniques described in Measurement procedure ANSI C63.4-2003 "Measurement of un-Intentional Radiators."

1.7 General Test Condition

The conditions under which the EUT operates were varied to determine their effect on the equipment's emission characteristics. The final configuration of the test system and the mode of operation used during these tests were chosen as that which produced the highest emission levels. However, only those conditions which the EUT was considered likely to encounter in normal use were investigated. The system's radiated and conducted emissions were investigated while the computer alternately transferred data to the EUT as well as to the monitor and printer. Using a test program which sent a continuous data and transferred data to and from the EUT was proven to worst case emissions. The system's physical layout and cabling was randomly arranged to ensure that maximum emission levels were attained.



II. Conducted Emissions Requirements

2.1 General & Setup :

The power line conducted emission measurements were performed in a shielded enclosure. The EUT was assembled on a wooden table which is 80 centimeters high, was placed 40 centimeters from the back-wall and at least 1 meter from the sidewall.

Power was fed to the EUT from the public utility power grid through a line filter and EMCO Model 3825/2 Line Impedance Stabilization Networks (LISN). The LISN housing, measuring instrumentation case, ground plane, etc., were electrically bonded together at the same RF potential. The Spectrum analyzer was connected to the AC line through an isolation transformer. The 50-ohm output of the LISN was connected to the spectrum analyzer directly. Conducted emission levels were in the CISPR quasi-peak detection mode. The analyzer's 6 dB bandwidth was set to 9 KHz. No post-detector video filter was used.

The spectrum was scanned from 150 KHz to 30 MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in paragraph 2.6.

2.2 Test Equipment List:

- A. EMCO 3825/2 LISN (S/N:2654)
- B. EMCO 3825/2 LISN (S/N:2658)
- C. HP 8591EM 9KHZ-1.8GHz Spectrum Analyzer (S/N:73412A00110)
- D. R&S ESH3 Test Receiver (S/N:892108/025)
- E. Shielded Room (MLT-SR1)

2.3 Test Configuration:



Front View of The Test Configuration



Rear View of The Test Configuration



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2.4 Test condition:

EUT tested in accordance with the specifications given by the Manufacturer , and exercised in the most unfavorable manner.

2.5 Conducted Emissions Limits:

<i>Frequency range (MHz)</i>	<i>Limits (dBuV)</i>	
	<i>Quasi-peak</i>	<i>Average</i>
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5.0	56	46
5.0 to 30	60	50

2.6 Measurement Data Of Conducted Emissions:

2.6.1 Conducted Emissions (Subpart B & C)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : Solid Year Co., Ltd.
 Model No : Receiver
 EUT : Slim Compact Multimedia Keyboard
 Test Date : 07/11/2005

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.15	41.97	65.74	--	55.74
	0.23	40.81	62.13	--	52.13
	1.37	43.07	56	--	46
	6.35	48.63	60	--	50
	8.41	49.57	60	--	50
	15.89	48.35	60	--	50
	27.13	57.17	60	30.30	50
L2	0.24	41.10	62.04	--	52.04
	1.36	44.78	56	--	46
	6.29	46.99	60	--	60
	8.41	48.80	60	--	50
	9.71	47.56	60	--	50
	16.05	45.97	60	--	50
	27.27	57.76	60	30.08	50

Notes : 1.L1: One end & Ground L2: The other end & Ground
 2.Height of table on which the EUT was placed: 0.8 m.
 3.The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
 4.The above test results are obtained under the normal condition.



III. Radiated Emissions Requirements

3.1 General Configuration:

Prior to open-field testing, the EUT was placed in a shielded enclosure and scanned at a close distance to determine its emission characteristics. The physical arrangement of the EUT was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude, directivity, and frequency. The exact system configuration which produced the highest emissions was noted so it could be reproduced later during the open-field tests. This was done to ensure that the final measurements would demonstrate the worst-case interference potential of the EUT.

3.2 General Configuration:

Final radiation measurements were made on a three-meter, open-field test site. The EUT system was placed on a nonconductive turntable which is 0.8 meters height, top surface 1.0 x 1.5 meter. The spectrum was examined from 26 MHz to 1.8 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 26 MHz to 1.8GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

A nonconductive material surrounded the EUT to supporting the EUT for standing on three orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.



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The field strength below 1 GHz was measured by EMCO Biconilog Antenna (mode 3142) at 3 Meter and the SCHWARZBECK Double Ridged Guide Antenna (model BBHA9120D&9170) was used in frequencies 1 – 40 GHz at a distance of 1 meter. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20dB/decade).

For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in microvolts per meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in microvolts per meter (dBuV/m).

The actual field intensity in referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.



(1) Amplitude (dBuV/m) = FI(dBuV) + AF(dBuV) + CL(dBuV) - Gain(dB)

FI = Reading of the field intensity.

AF = Antenna factor.

CL = Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

(2) Actual Amplitude (dBuV/m) = Amplitude (dBuV) - Dis(dB)

3.3 Test Equipment List:

- A. HP 8591EM 9KHz-1.8GHz Spectrum Analyzer (S/N:73412A00230)
- B. HP 8447D Pre Amplifier (S/N:2944A08954)
- C. EMCO 3142 26MHz~2000MHz Biconilog Antenna (S/N:1184)
- D. R&S ESVP 20MHz~1300MHz Test Receiver (S/N:881121/01)
- E. Agilent E4407B 9KHz-26.5GHz Spectrum Analyzer (S/N:A872JS02291)
- F. HP 8449B 1GHZ~26.5GHZ PRE Amplifier (S/N:1982901A91)
- G. SCHWARZBECK BBHA 9120D 1GHz~18GHz Horn Antenna (S/N:141S3)
- H. SCHWARZBECK BBHA 9170 15GHz~40GHz Horn Antenna (S/N:192S5)

3.4 Test Configuration:



Front View of The Test Configuration



Rear View of The Test Configuration



Front View of The Test Configuration



Rear View of The Test Configuration



3.5 Test condition:

EUT tested in accordance with the specifications given by the manufacturer , and exercised in the most unfavorable manner.

3.6 Radiated Emissions Limits:

3.6.1 Fundamental frequency

<i>Frequency range (MHz)</i>	<i>Peak(dBuV)</i>
26.96 to 27.28	80

3.6.2 Spurious frequency

<i>Frequency range (MHz)</i>	<i>Peak(dBuV)</i>
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960	54

3.7 Measurement Data Of Radiated Emissions:

3.7.1 Open Field Radiated Emissions (Subpart C)

The highest peak values of radiated emissions from the EUT at various antenna heights, antenna polarization, EUT orientation , etc. are recorded on the following

Applicant : Solid Year Co., Ltd.
Model No : ACK-2060UMRD
EUT : Slim Compact Multimedia Keyboard
Test Date : 07/15/2005

Fundamental Frequency Radiated Emissions						
Frequency (MHz)	Amplitude (dBUV/m)	Ant. (m)	Table (Degree)	Limits (dBUV/m)	Margin (dB)	polarization
27.14	60.12	1	260	80	-19.88	V
27.14	50.11	3.2	330	80	-29.89	H

Notes : 1.Margin= Amplitude - Limits
 2.Distance of Measurement : 3 Meter
 3.Height of table for EUT placed: 0.8 Meter.
 4.ANT= Antenna height.
 5.Amplitude= Reading Amplitude –Amplifier gain+ Cable loss
 +Antenna factor
 (Auto calculate in spectrum analyzer)

3.7.2 Open Field Radiated Emissions (Subpart B & C)

The highest peak values of radiated emissions from the EUT at various antenna heights, antenna polarization, EUT orientation , etc. are recorded on the following

Applicant : Solid Year Co., Ltd.
 Model No : ACK-2060UMRD & Receiver
 EUT : Slim Compact Multimedia Keyboard
 Test Date : 07/15/2005

Radiated Emissions (HORIZONTAL)					
Frequency (MHz)	Amplitude (dBUV/m)	Ant. (m)	Table (Degree)	Limits(Class B) (dBUV/m)	Margin (dB)
104.91	23.56	1	260	43.5	-19.94
120.53	33.12	1.5	330	43.5	-10.38
135.76	25.17	1.5	150	43.5	-18.33
162.01	25.69	1	150	43.5	-17.81
177.52	30.99	1	200	43.5	-12.51
190.06	33.17	2	310	43.5	-10.33
217.17	28.33	1.5	300	46	-17.67
400.66	26.51	2.5	310	46	-19.49
433.29	26.38	1	240	46	-19.62
517.10	28.98	1.5	240	46	-17.02
804.11	28.53	1	180	46	-17.47

Notes : 1.Margin= Amplitude - Limits
 2.Distance of Measurement : 3 Meter (30-1000MHz)
 3.Height of table for EUT placed: 0.8 Meter.
 4.ANT= Antenna height.
 5.Amplitude= Reading Amplitude –Amplifier gain+ Cable loss
 +Antenna factor
 (Auto calculate in spectrum analyzer)

3.7.3 Open Field Radiated Emissions (Subpart B & C)

The highest peak values of radiated emissions from the EUT at various antenna heights, antenna polarization, EUT orientation , etc. are recorded on the following.

Applicant : Solid Year Co., Ltd.
 Model No : ACK-2060UMRD & Receiver
 EUT : Slim Compact Multimedia Keyboard
 Test Date : 07/15/2005

Radiated Emissions (VERTICAL)					
Frequency (MHz)	Amplitude (dBUV/m)	Ant. (m)	Table (Degree)	Limits(Class B) (dBUV/m)	Margin (dB)
43.37	20.67	1	260	40	-19.33
93.13	21.39	1.5	310	43.5	-22.11
108.47	20.51	1	150	43.5	-22.99
149.35	20.59	1	150	43.5	-22.91
166.56	25.62	2.5	260	43.5	-17.88
190.06	25.21	2	310	43.5	-18.29
433.29	25.69	1.5	300	46	-20.31
499.51	29.51	1	310	46	-16.49
643.15	30.21	1	240	46	-15.79
804.11	28.39	1.5	200	46	-17.61
928.60	28.35	1.5	180	46	-17.65

Notes : 1.Margin= Amplitude - Limits
 2.Distance of Measurement : 3 Meter (30-1000MHz)
 3.Height of table for EUT placed: 0.8 Meter.
 4.ANT= Antenna height.
 5.Amplitude= Reading Amplitude –Amplifier gain+Cable loss
 +Antenna factor
 (Auto calculate in spectrum analyzer)

IV. Occupied Bandwidth

4.1 General Configuration :

1. The EUT was placed on the turn table which is 0.8m above ground plane.
2. Set EUT as normal operation.
3. Set SPA Center Frequency = fundamental frequency, RBW, VBW = 10kHz, Span = 100kHz.
4. Set SPA Max hold Mark peak, -26dB.

4.2 Test Equipment list

Same as 3.3 Radiated Emissions Requirements

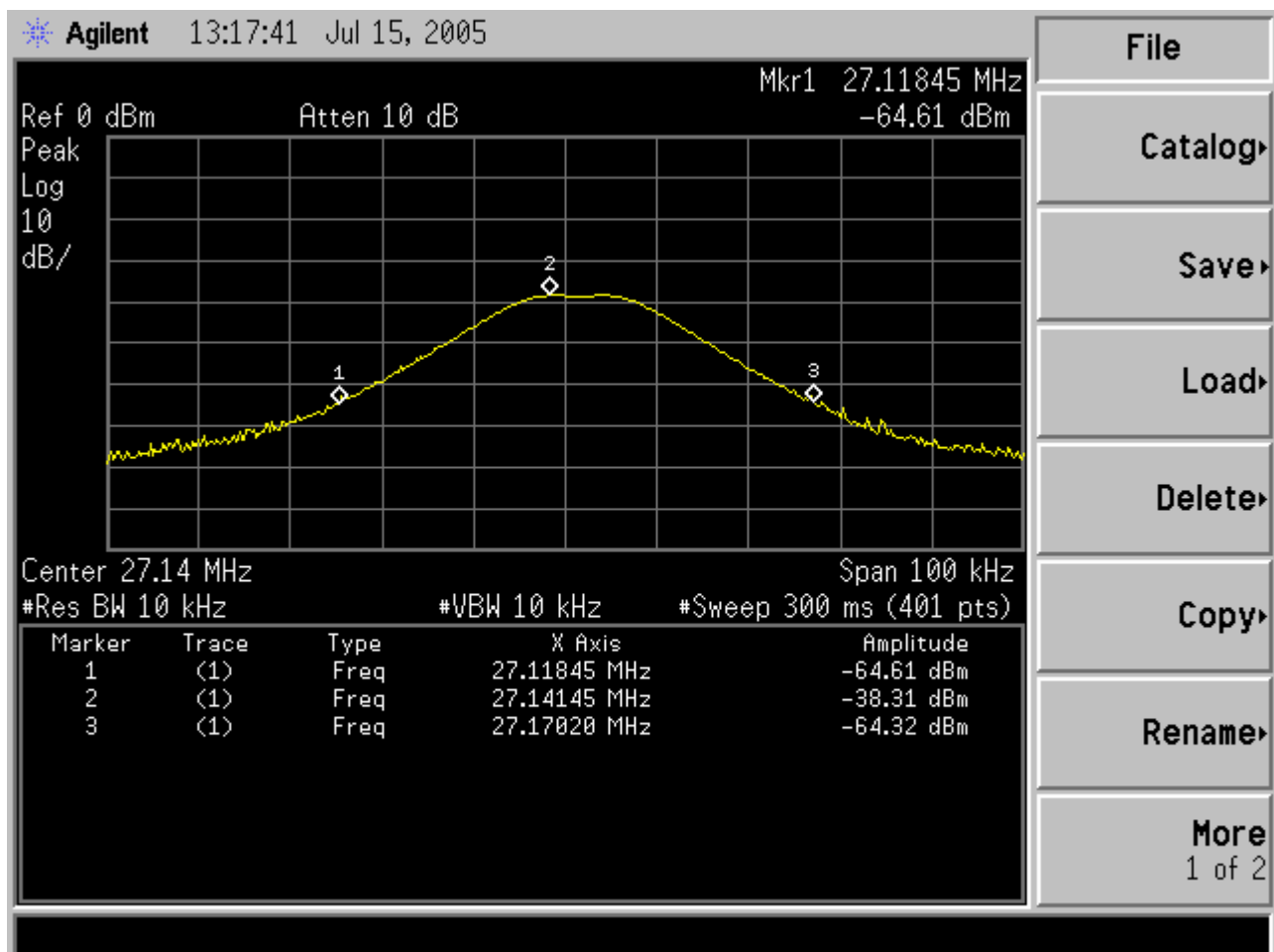
4.3 Test Condition

EUT tested in accordance with the specifications given by the manufacturer , and exercised in the most unfavorable manner.

4.4 Test result

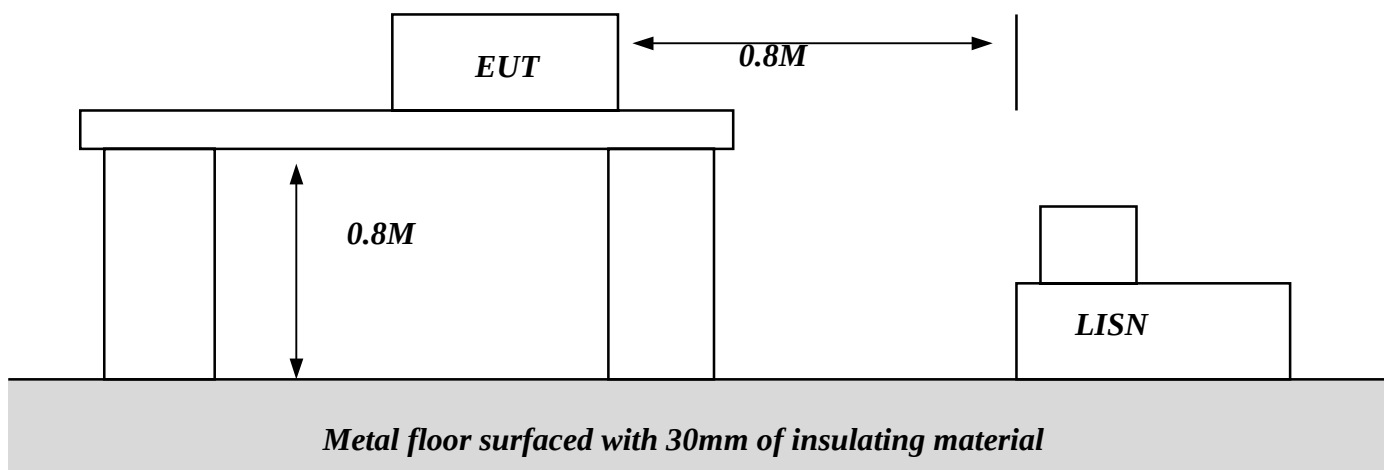
26dB bandwidth = 52kHz
Refer to attached data chart.

26 dB Bandwidth Test Data



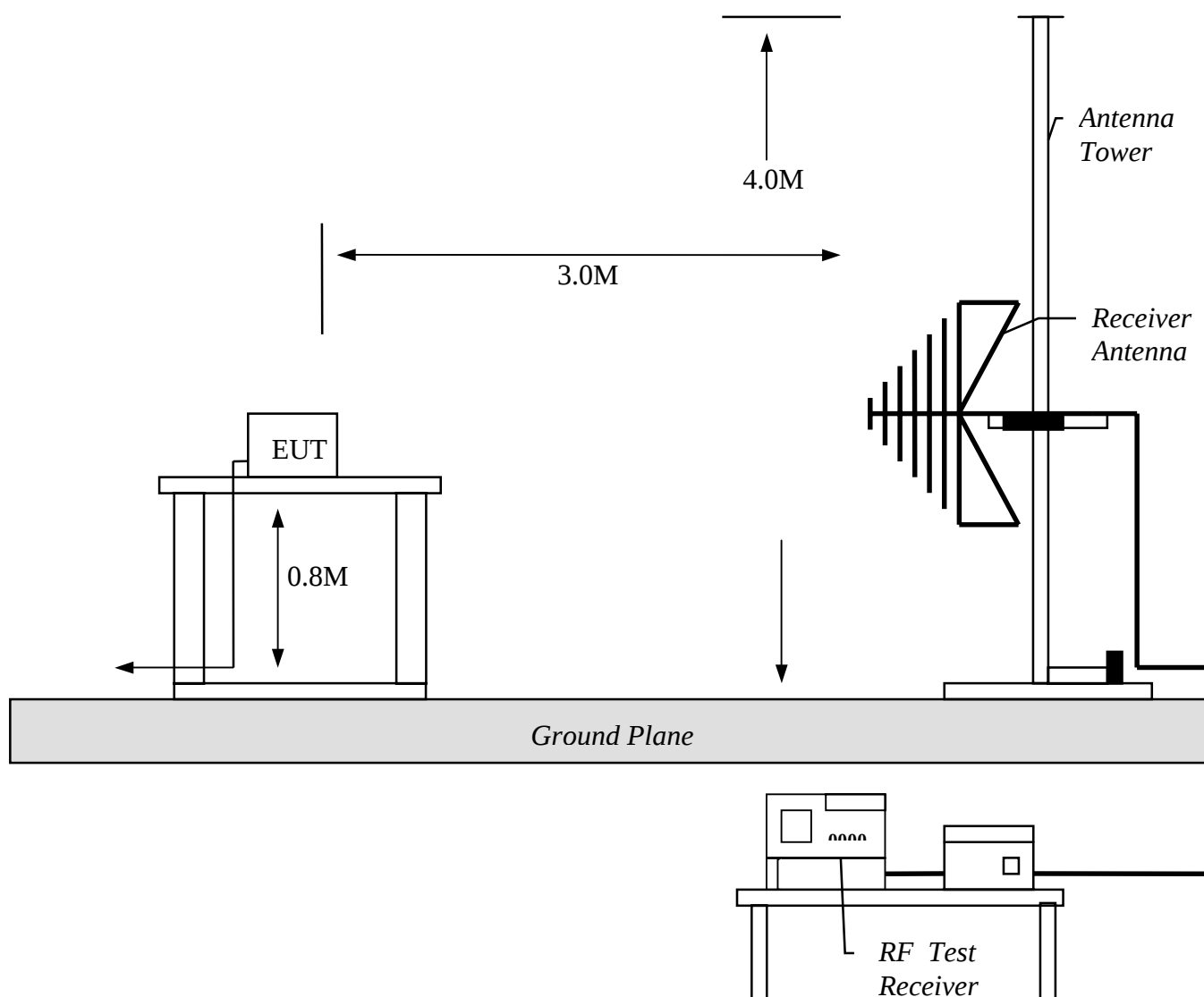
Appendix I- EUT Test SETUP

MEASUREMENT OF POWER LINE CONDUCTED RFI VOLTAGE



Appendix I- EUT Test SETUP

MEASUREMENT OF RADIATED EMISSION





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EXHIBIT C

User Manual

Quickly

ACK-2060UMRD Keyboard & Mouse Combo

Setup Guide & instruction

Welcome

First of all, welcome to join the unlimited cordless world. Please follow the instruction below to start using the cordless RF product.

Initial your product

1. Please put two (AAA) Alkaline batteries in the mouse battery room in the back of the mouse and follow the pole mark in mouse battery room.
2. Please put two (AA) Alkaline batteries in the keyboard battery room in the back of the keyboard and follow the pole mark in keyboard battery room.
3. Plug in the receiver cable to your computer connector ports.
4. Turn on your computer to prepare for getting into the ID setting process in keyboard, mouse and the receiver.

ID Setting Process

If you feel the mouse does not move smooth as usual or the keyboard does not work when typing, then the batteries have lost their charge, so please replace them. Furthermore, do not mix or use different types of batteries at the same time. You should set up the channel every time you replace the batteries. The channel buttons are factory preset. The red LED, the data transmission indicator, on the receiver will be lit when the keyboard or mouse is in normal operation. If your keyboard/mouse does not work, then you have to set the ID channel setting.

Please press the button on the receiver first (RB) and press the button under the mouse (MB) and the keyboard (KB) within twenty seconds. So you press RB, MB and KB to set the channel setting.



Receiver



Connect Button

Quickly

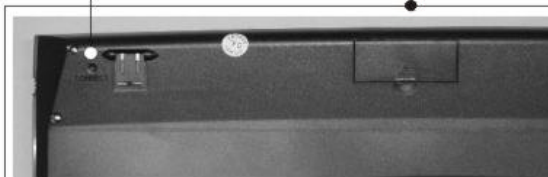
Setup Guide & instruction



Connect Button



Battery Room



Keyboard Bottom Side



Connect Button



Battery Room



Mouse Bottom Side

ACK-2060UMRD Keyboard & Mouse Combo

quickly Setup Guide & instruction

Hot Key function list

ICON	Function	ICON	Function
	Web Back		Play/Pause
	Web Forward		Stop
	Web Search		Mute
	Web Favorites		Volume up
	Web Browser		Volume Down
	Mail		Scan Previous Track
	Media Select		Scan Next Track

quickly Setup Guide & instruction

Notice

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

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 received, including interference that may cause undesired operation.**

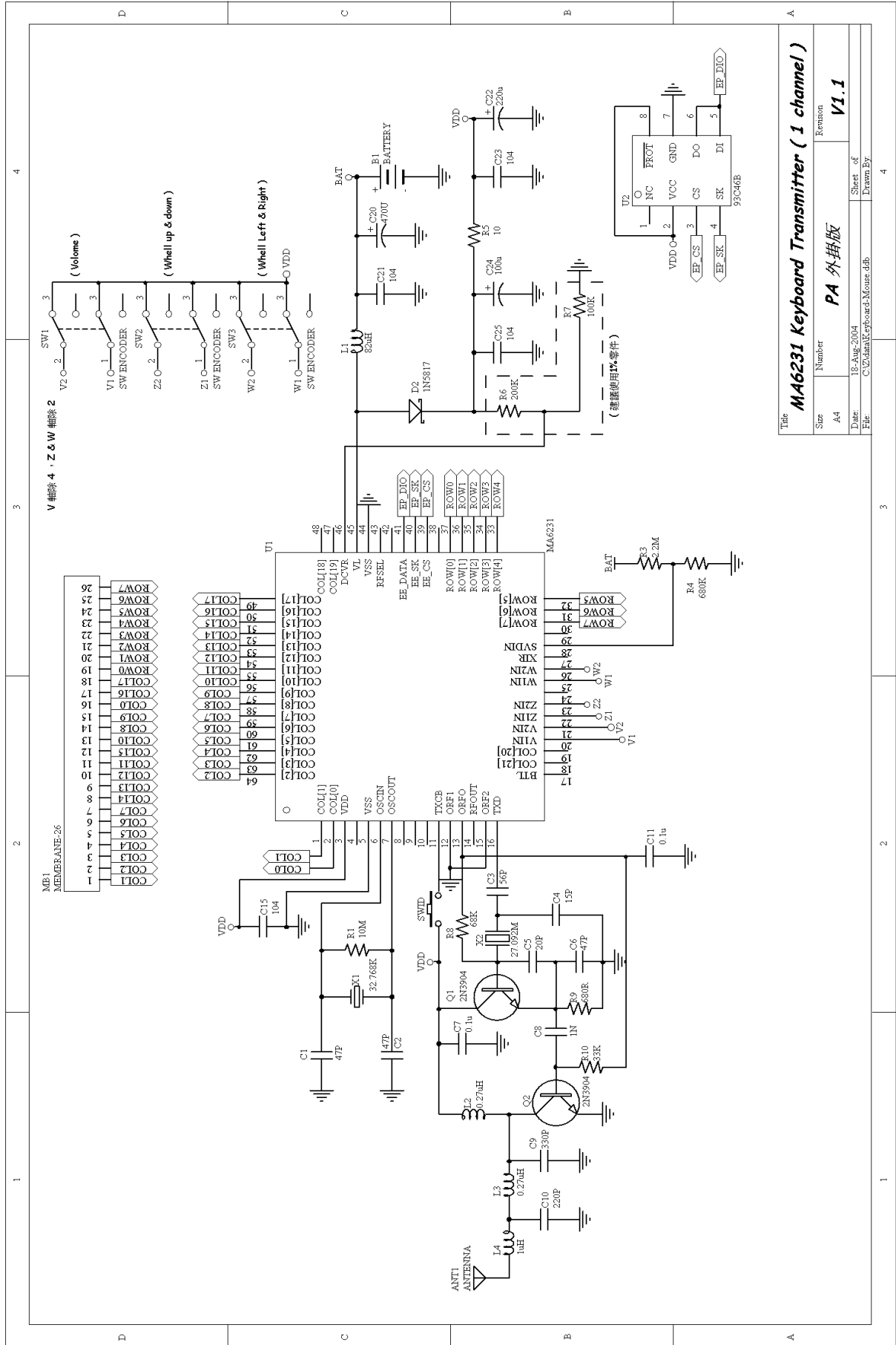
KP C5229



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EXHIBIT D

Circuit Diagram



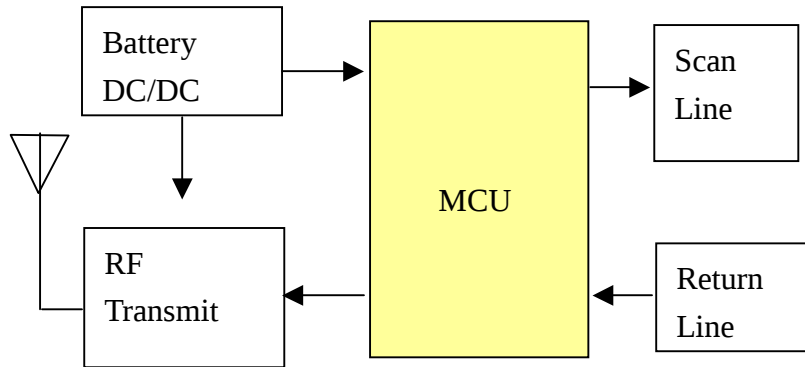


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EXHIBIT E

Block Diagram

RF 27MHz Keyboard Block Diagram





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EXHIBIT F

Photographs of EUT



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Front View of Apparatus (ACK-2060UMRD)



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Rear View of Apparatus (ACK-2060UMRD)



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Front View of Apparatus (ACK-2070UMRD)



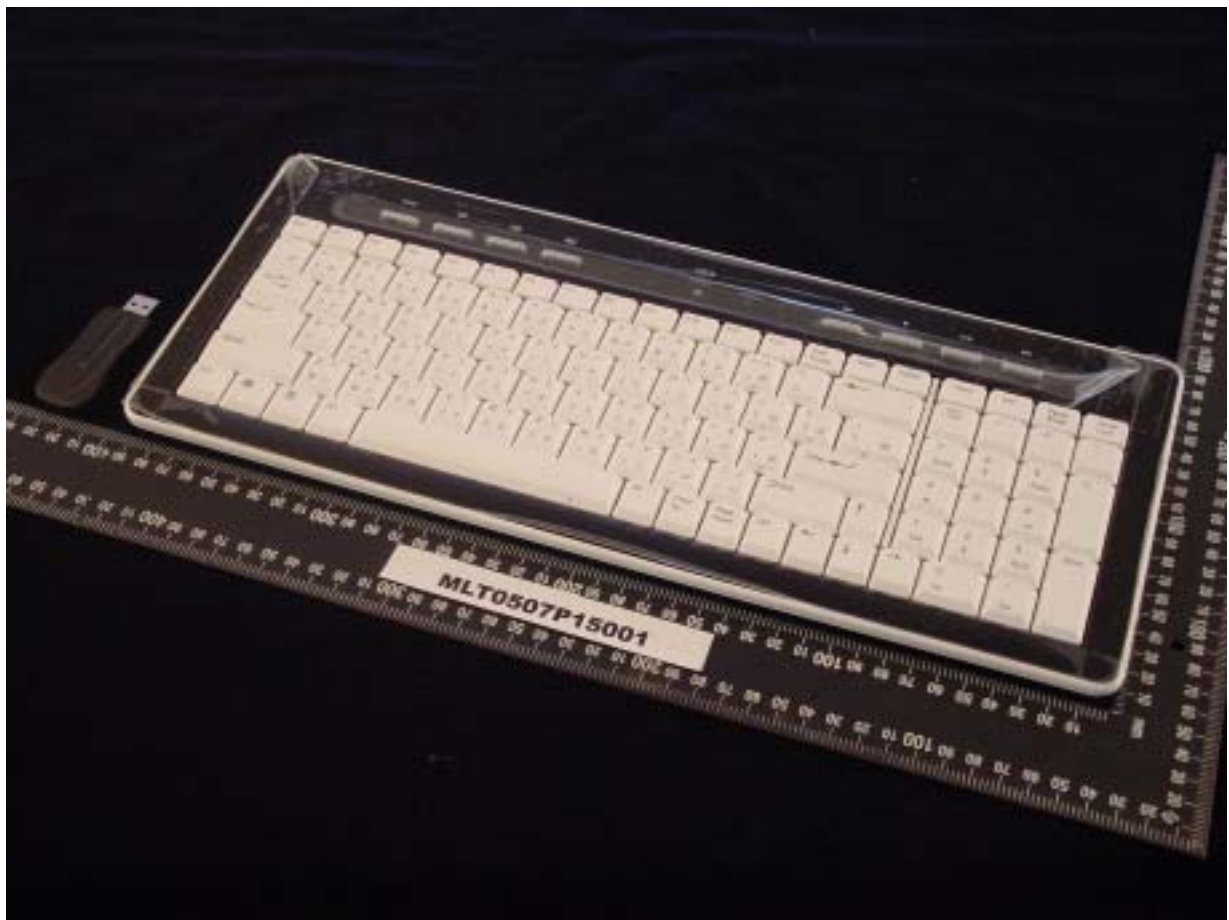
MAX LIGHT



Rear View of Apparatus (ACK-2070UMRD)



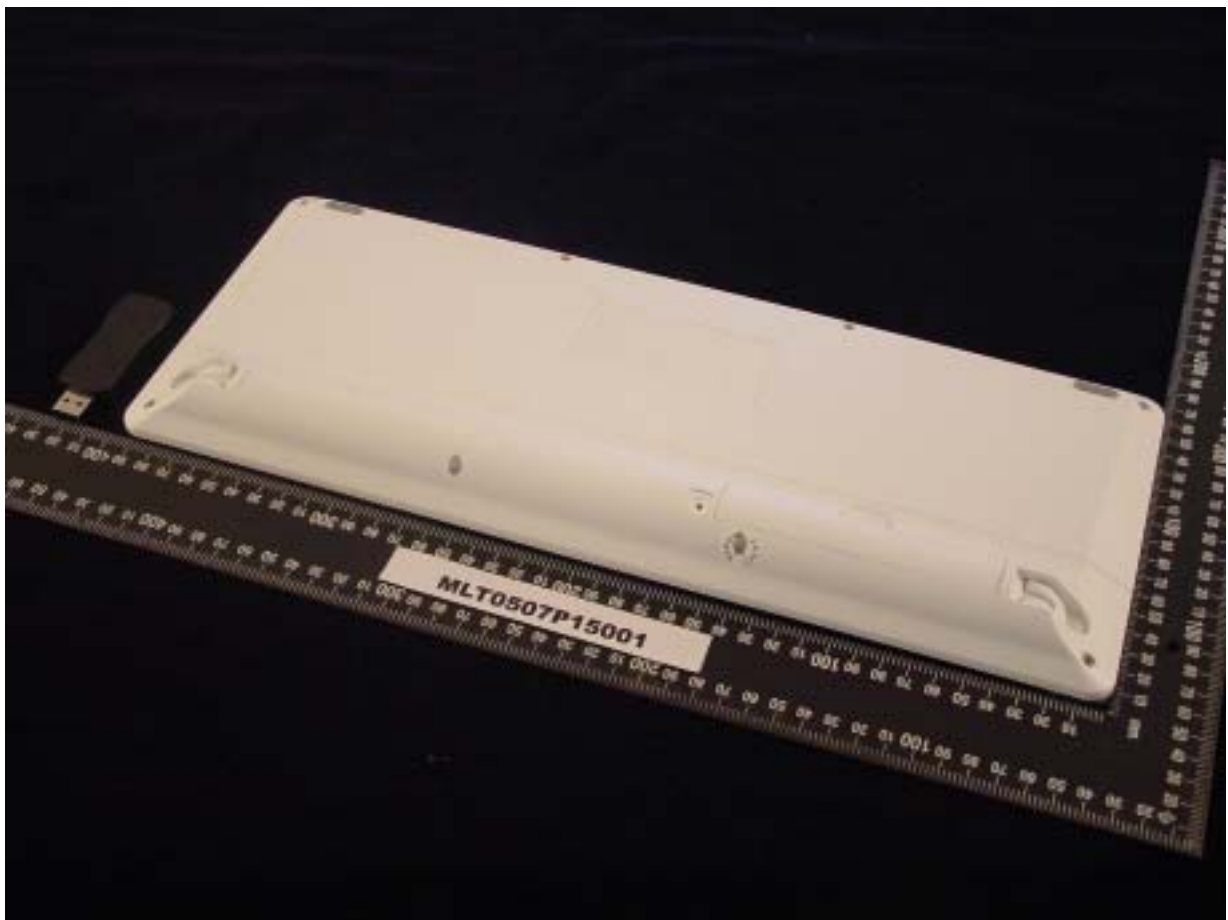
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Front View of Apparatus (ACK-2080UMRD)



MAX LIGHT



Rear View of Apparatus (ACK-2080UMRD)



MAX LIGHT



Front View of Apparatus (SOL-2110UMRF)



MAX LIGHT



Rear View of Apparatus (SOL-2110UMRF)



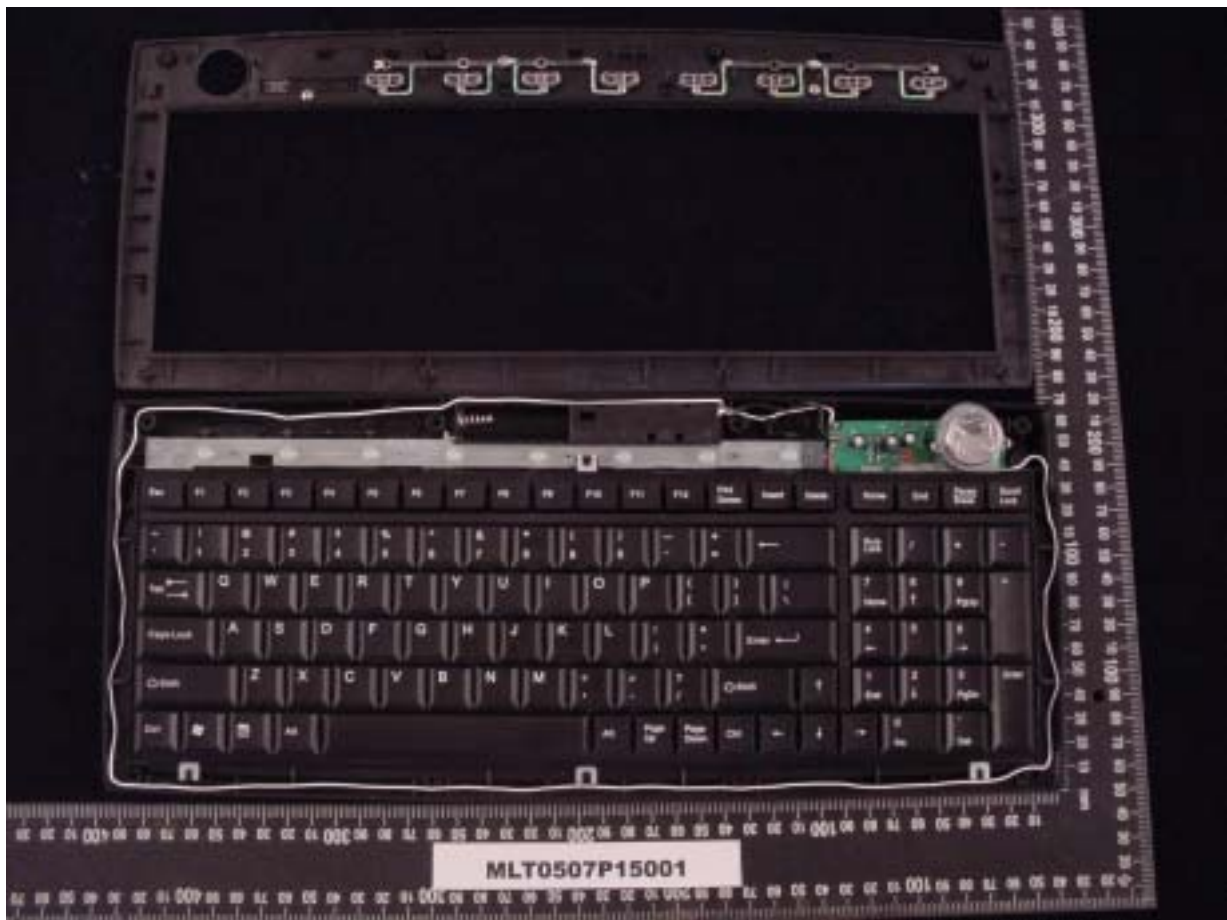
MAX LIGHT



Inside View of Apparatus (ACK-2060UMRD)



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Inside View of Apparatus (ACK-2070UMRD)



MAX LIGHT



Inside View of Apparatus (ACK-2080UMRD)



MAX LIGHT



Inside View of Apparatus (SOL-2110UMRF)



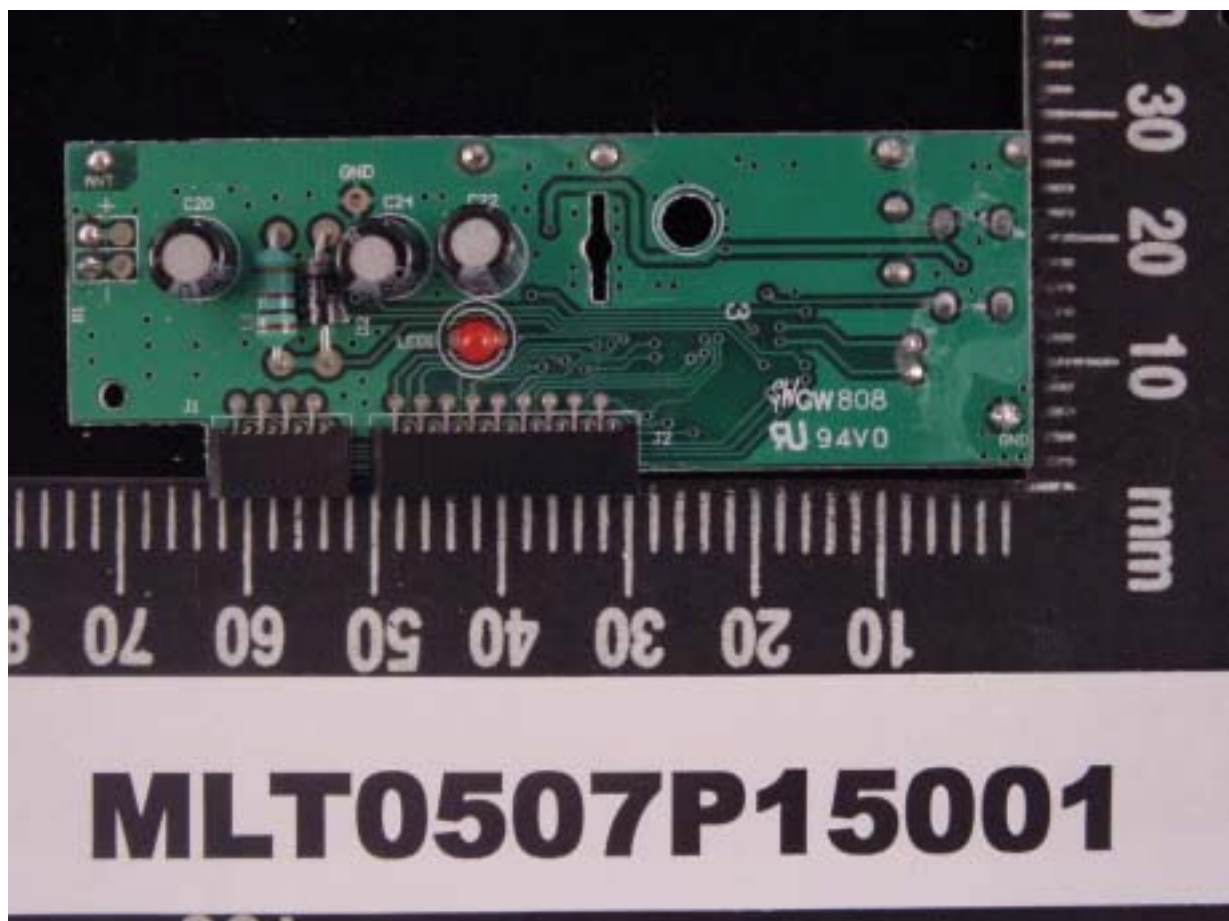
MAX LIGHT



Solder Side of Apparatus for Main-board



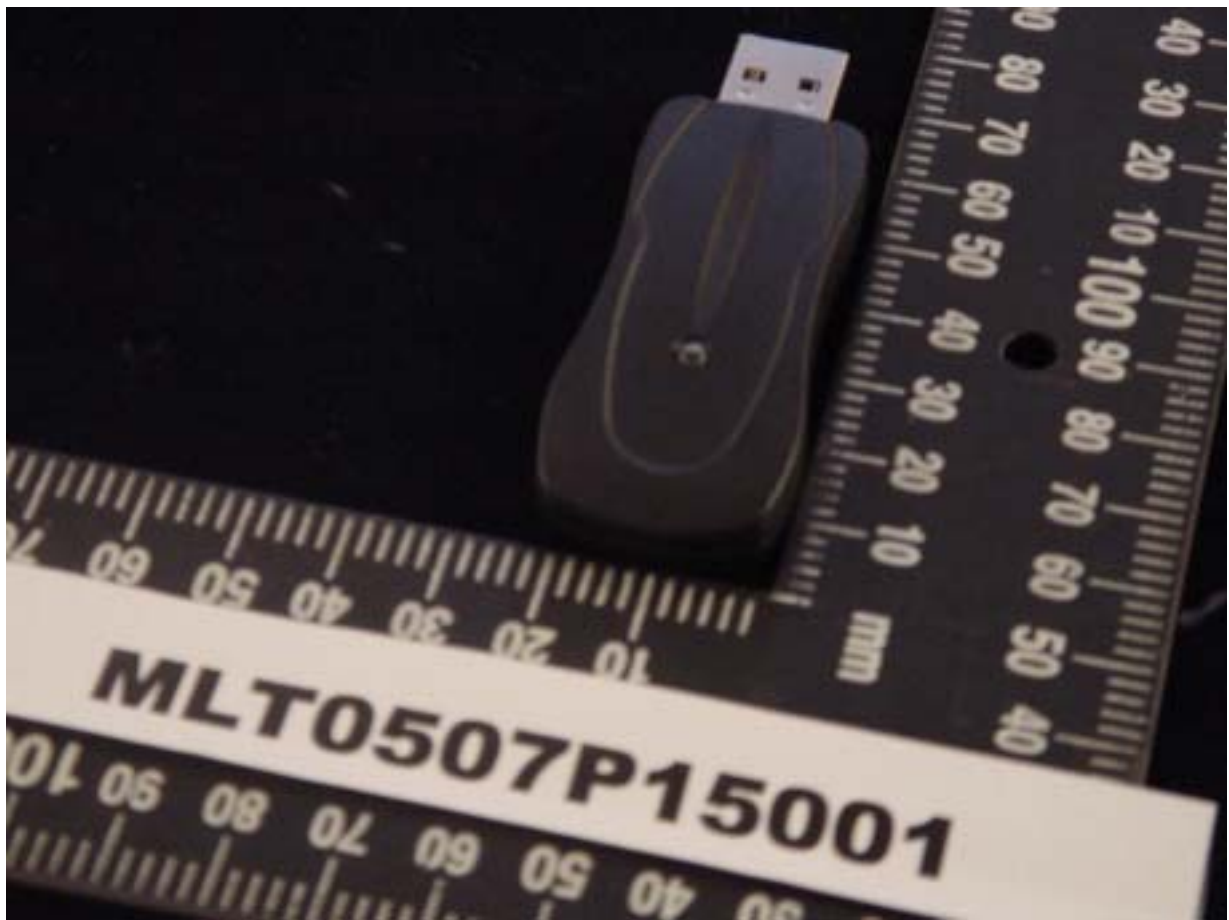
MAX LIGHT



Component Side of Apparatus for Main-board



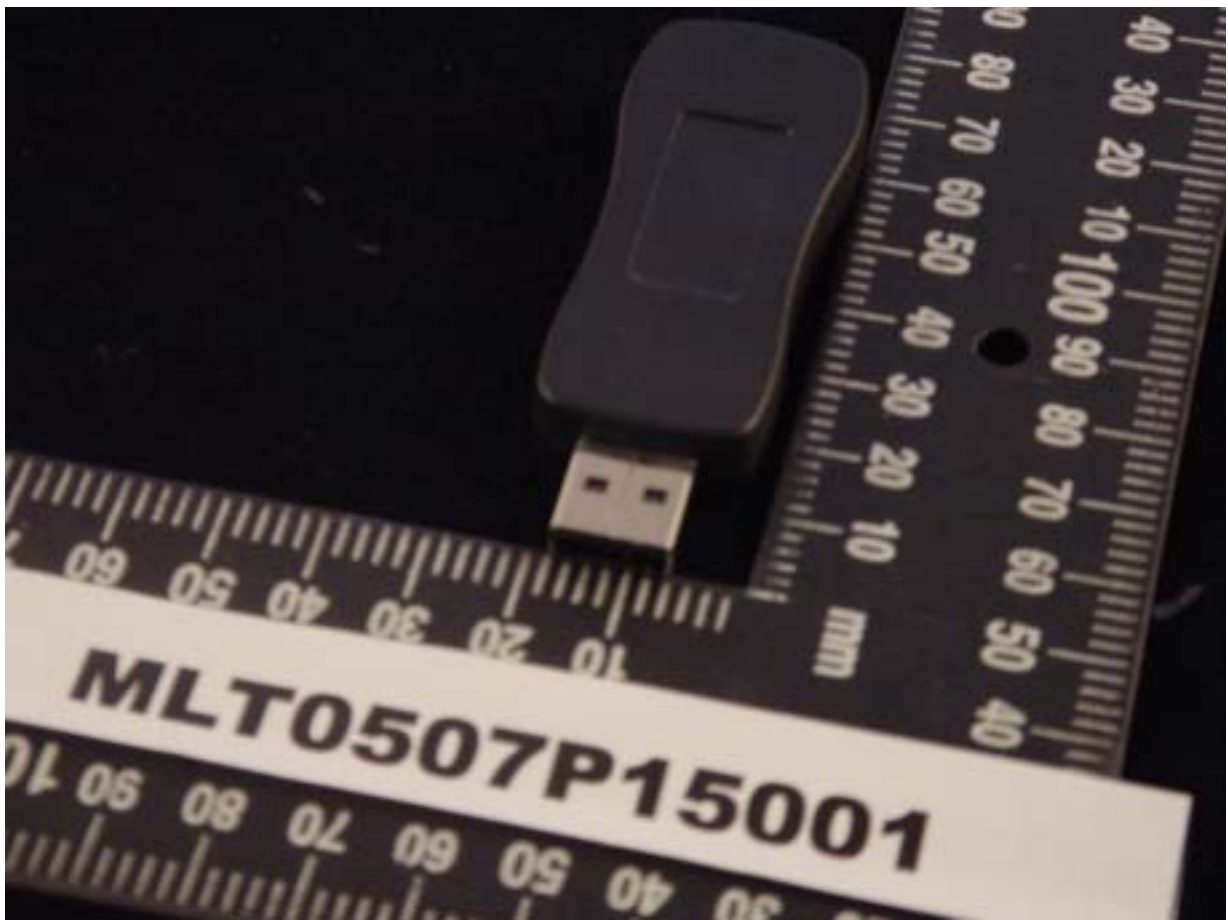
MAX LIGHT



Front View of Receiver



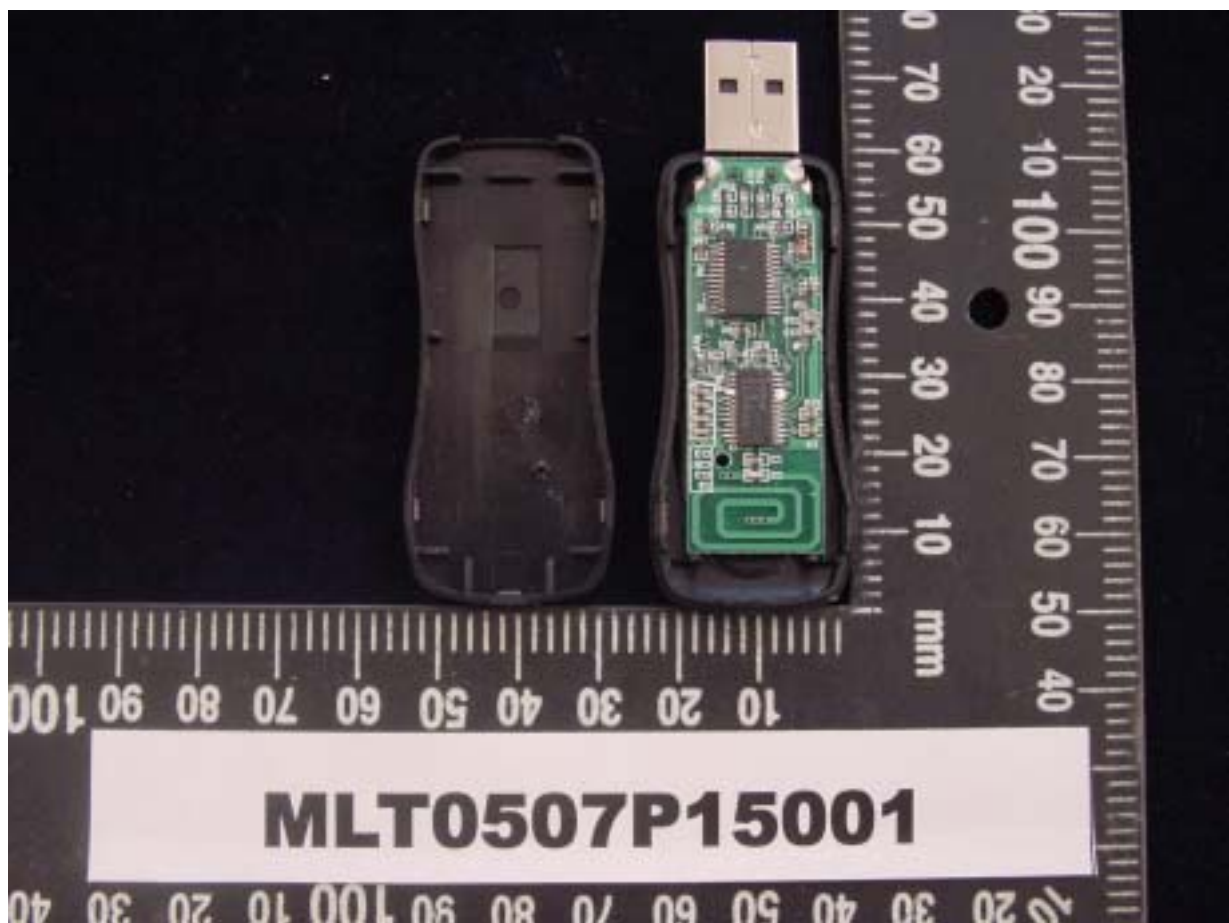
MAX LIGHT



Rear View of Receiver



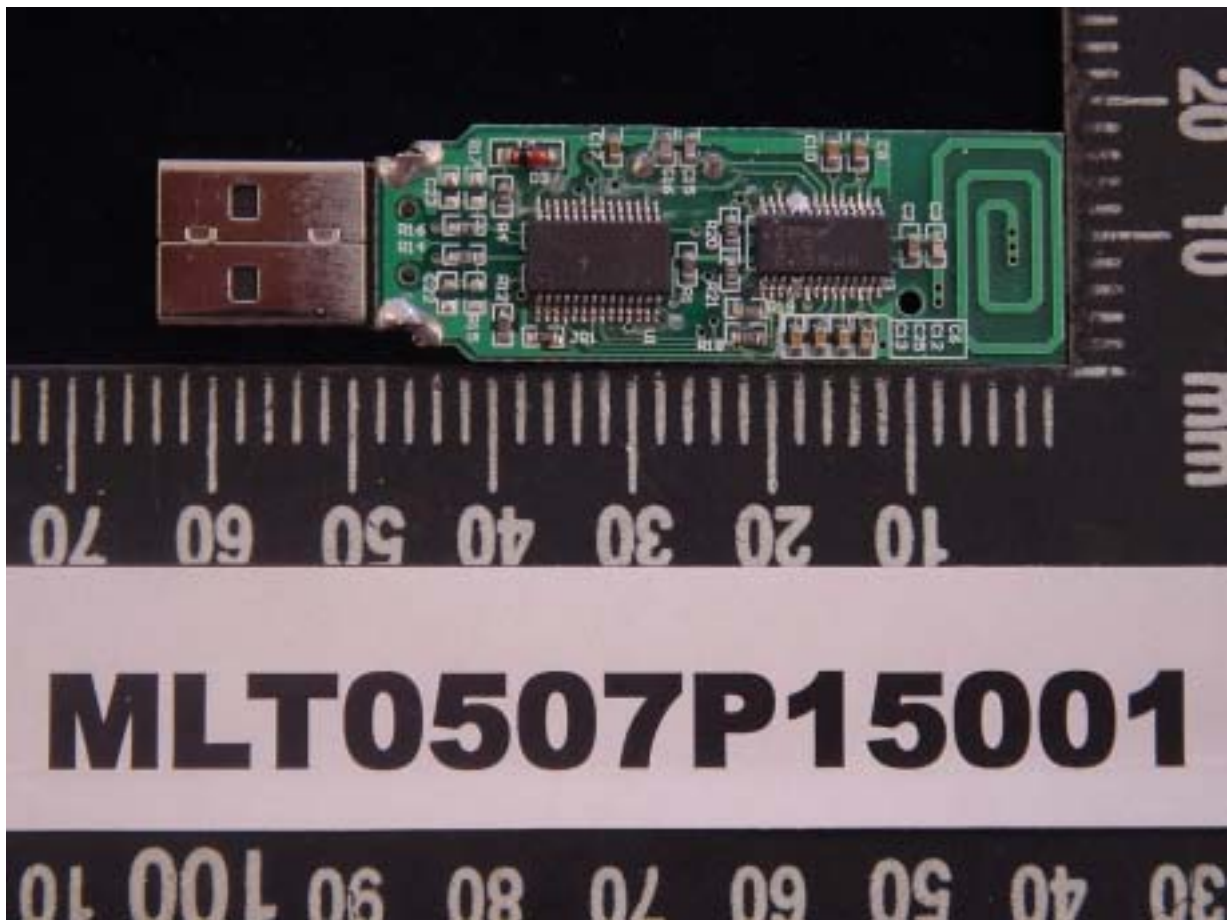
MAX LIGHT



Inside View of Receiver



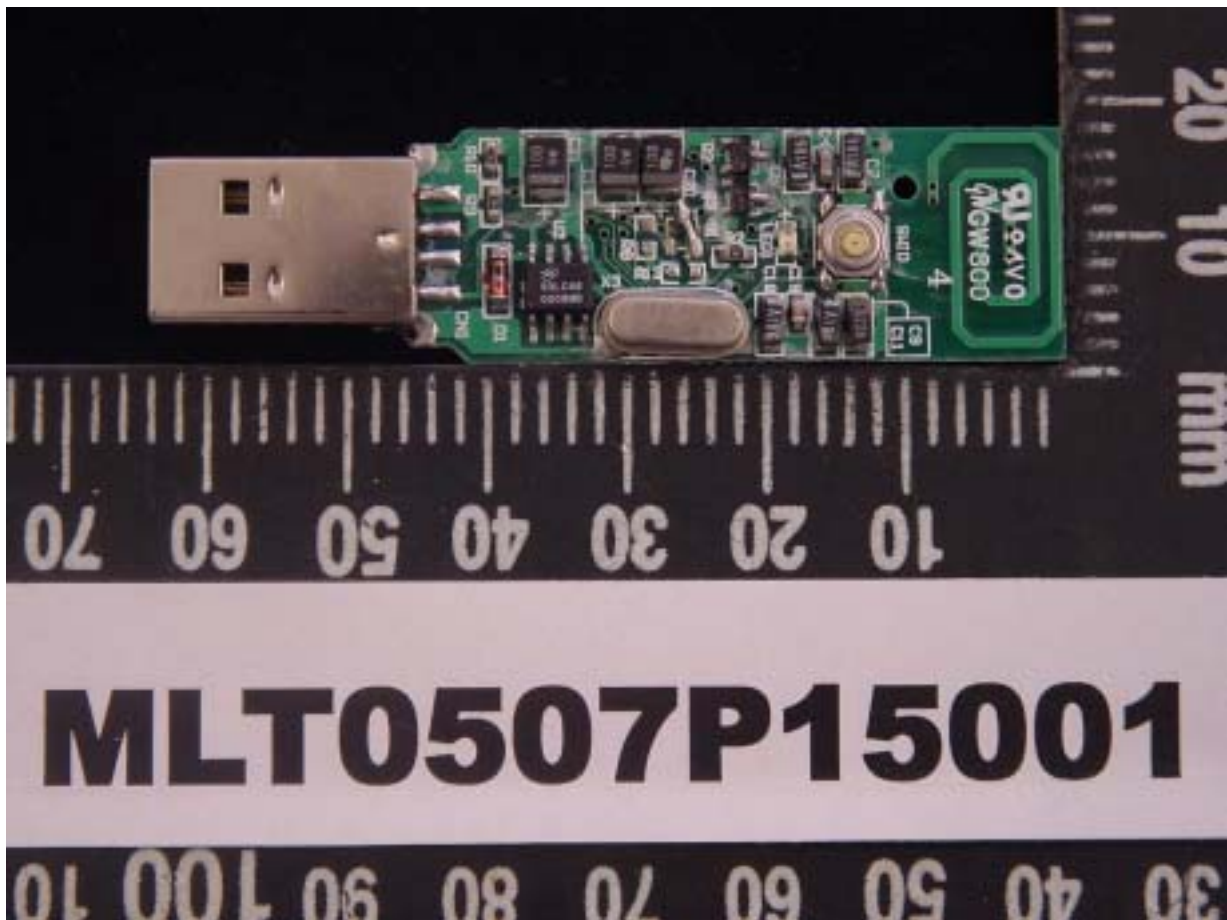
MAX LIGHT



Solder Side of Receiver



MAX LIGHT



Component Side of Receiver