Produkte
Products

TÜVRheinland®

Prüfbericht - Nr.: *Test Report No.:*	**17028744 001**	**Seite 1 von 17** *Page 1 of 17*
Auftraggeber: *Client:*	**Blue Ocean Innovation Limited** Rm.1813, Fo Tan Industrial Centre, 26-28 Au Pui Wan Street, Hong Kong	
Gegenstand der Prüfung: *Test item:*	RECHARGEABLE PAGER	
Bezeichnung: *Identification:*	450304	**Serien-Nr.:** *Serial No.:* n.a.
Wareneingangs-Nr.: *Receipt No.:*	163098467	**Eingangsdatum:** *Date of receipt:* 2012-09-21
Zustand des Prüfgegenstandes bei Anlieferung: **Condition of test item at delivery:**	Test samples received are sufficient for testing and not damaged.	
Prüfort: *Testing location:*	Shenzhen Accurate Technology Co., Ltd. F1, Bldg. A, Changyuan New Meterial Port, Keyuan Rd., Science & Industry Park Nanshan District, Shenzhen 518057, P.R. China FCC Registration No.: 752051 Test site Industry Canada No.: 5077A	
Prüfgrundlage: *Test specification:*	**FCC Part 15 Subpart B (ANSI C63.4: 2003)** **ICES-003 Issue 4 February 2004 (CAN/CSA-CEI/IEC CISPR 22-02)** **RSS-Gen Issue 3 December 2010**	
Prüfergebnis: *Test Result:*	**Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).** *The test item passed the test specification(s).*	
Prüflaboratorium: *Testing Laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.	

geprüft/ *tested by:*			**kontrolliert/** *reviewed by:*		
2013-01-20	Tonglee/ Project Manager		2013-01- 23	Winnie Hou/ Technical Certifier	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges/ *Other Aspects:*

Abkürzungen:				*Abbreviations:*			
	P(ass)	=	*entspricht Prüfgrundlage*		*P(ass)*	=	*passed*
	F(ail)	=	*entspricht nicht Prüfgrundlage*		*F(ail)*	=	*failed*
	N/A	=	*nicht anwendbar*		*N/A*	=	*not applicable*
	N/T	=	*nicht getestet*		*N/T*	=	*not tested*

TEST SUMMARY

5.1.1 CONDUCTED EMISSION
RESULT: Passed

5.2.1 RADIATED EMISSION
RESULT: Passed

Contents

1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix 1: Test Result

2. Test Sites

2.1 Test Facilities

Shenzhen Accurate Technology Co., Ltd.

F1, Bldg. A, Changyuan New Meterial Port, Keyuan Rd., Science & Industry Park Nanshan District, Shenzhen 518057, P.R. China

FCC Registration No.: 752051
Test site Industry Canada No.: 5077A

The tests at the test site have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Conducted Emission				
Test Receiver	Rohde & Schwarz	ESCS30	100307	2013-01-07
Artificial Mains Network	Schwarzbeck	NLSK8126	8126431	2013-01-07
Radiated Emission				
Spectrum Analyzer	Agilent	E7405A	MY45115511	2013-01-07
Test Receiver	Rohde & Schwarz	ESCS30	100307	2013-01-07
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	2013-01-07
Loop Antenna	Schwarzbeck	FMZB1516	1516131	2013-01-07
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	2013-01-07
50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	2013-01-07
Pre-Amplifier	Rohde & Schwarz	CBLU11835 40-01	3791	2013-01-07

2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements are ±3dB.

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix1 of this report and delivered to the applicant. A copy has been retained in the TUV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The Shenzhen Accurate Technology Co., Ltd. located at F1, Bldg. A, Changyuan New Meterial Port, Keyuan Rd., Science & Industry Park Nanshan District, Shenzhen 518057, P.R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3. General Product Information

3.1 Product Function and Intended Use

The EUT is rechargeable pager, which is UHF recevers work at 467.8MHz. The EUT is used to call customers.
For more information refer to the Instruction Manual & Circuit Diagram.

3.2 Ratings and System Details

Table 2: Rating of EUT

Kind of Equipment:	RECHARGEABLE PAGER
Type Designation:	450304
FCC ID	VU3-RECHARGE467

Table 3: Technical Specification of EUT

Technical Specification	Value
Operating Frequency band	467.8MHz
Operation Voltage	DC2.4V
Modulation	FM
Antenna Type	Internal Antenna, Non-User Replaceable

3.3 Independent Operation Modes

The basic operation modes are:
A. Receiving
B. Charging (via external specified charger)
C. Stand by
D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Circuit Diagram
- Construction Drawing
- User's Manual
- PCB Layout
- Bill of Material
- Label

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5.

4.3 Special Accessories and Auxiliary Equipment

Item Description	Model No.	Manufacturer
AC/DC Adapter	TR36A-13 03A03	CINCON Electronics Co., Ltd.
Battery Plate	--	Ocean Springs Metal Manufacture Limited.

Note: the adapter is only for testing, not marketed with EUT.

4.4 Countermeasures to achieve EMC Compliance

The test sample, which has been tested, contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test

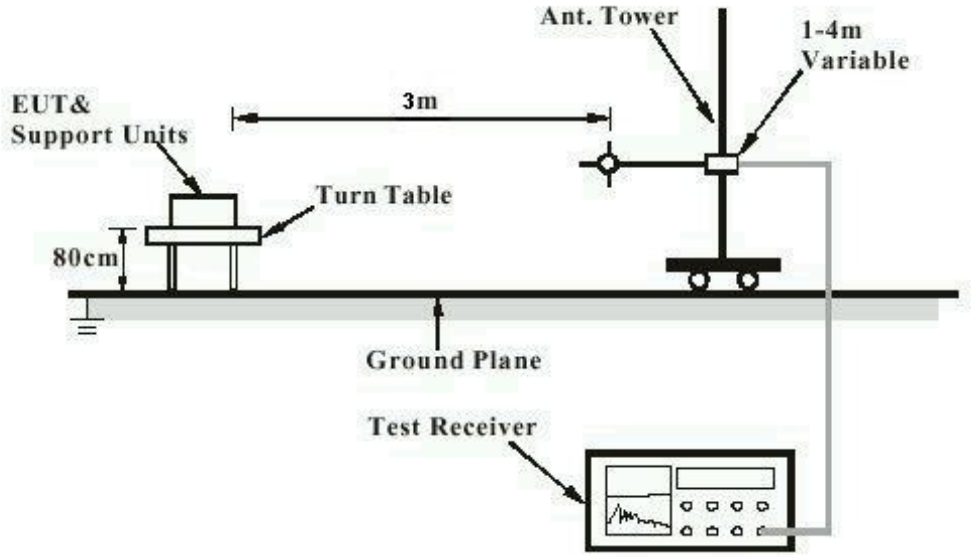


Diagram of Measurement Equipment Configuration for Mains Conduction Measurement

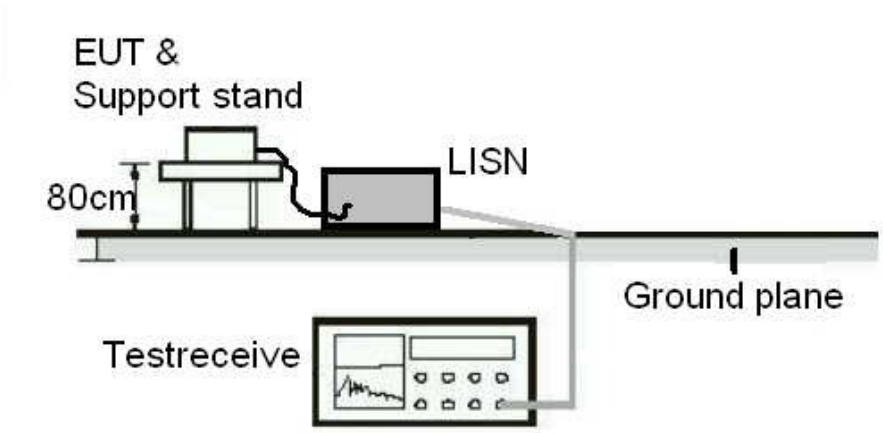
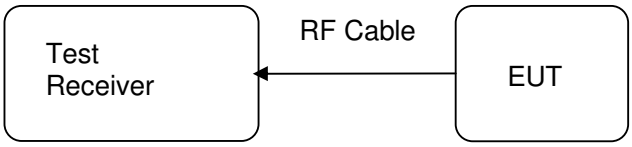


Diagram of Measurement Equipment Configuration for Conducted Transmitter Measurement



5. Test Results EMISSION

5.1 Emission in the Frequency Range up to 30 MHz

5.1.1 Conducted Emission

RESULT: **Passed**

Date of testing	:	2012-10-30
Test specification	:	FCC Part 15 Per Section 15.107(a) Clause 5.3 of ICES-003 RSS-Gen 7.2.4
Frequency range	:	0.15 – 30MHz
Classification	:	Class B
Test procedure	:	ANSI C63.4: 2003 CAN/CSA-CEI/IEC CISPR 22-02 Table 4 of RSS-GEN
Deviations from standard test procedure	:	None
Kind of test site	:	Shielded room

Test setup

Input Voltage	:	AC120V 60Hz to AC/DC Adapter
Operation mode	:	B
Artificial hand	:	Not applied
Earthing	:	Not connected

Test data refer to Appendix 1.

5.2 Emission in the Frequency Range above 30 MHz

5.2.1 Radiated Emission

RESULT: **Passed**

Date of testing	:	2012-10-30
Test standard	:	FCC Part 15 Per Section 15.109(a) Clause 5.5 of ICES-003 RSS-Gen 7.1.4
Frequency range	:	30 - 6000MHz
Classification	:	Class B
Test procedure	:	ANSI C63.4: 2003 CAN/CSA-CEI/IEC CISPR 22-02 RSS-Gen Table 5
Deviation from standard test procedure	:	None
Kind of test site	:	3m Semi-Anechoic Chamber

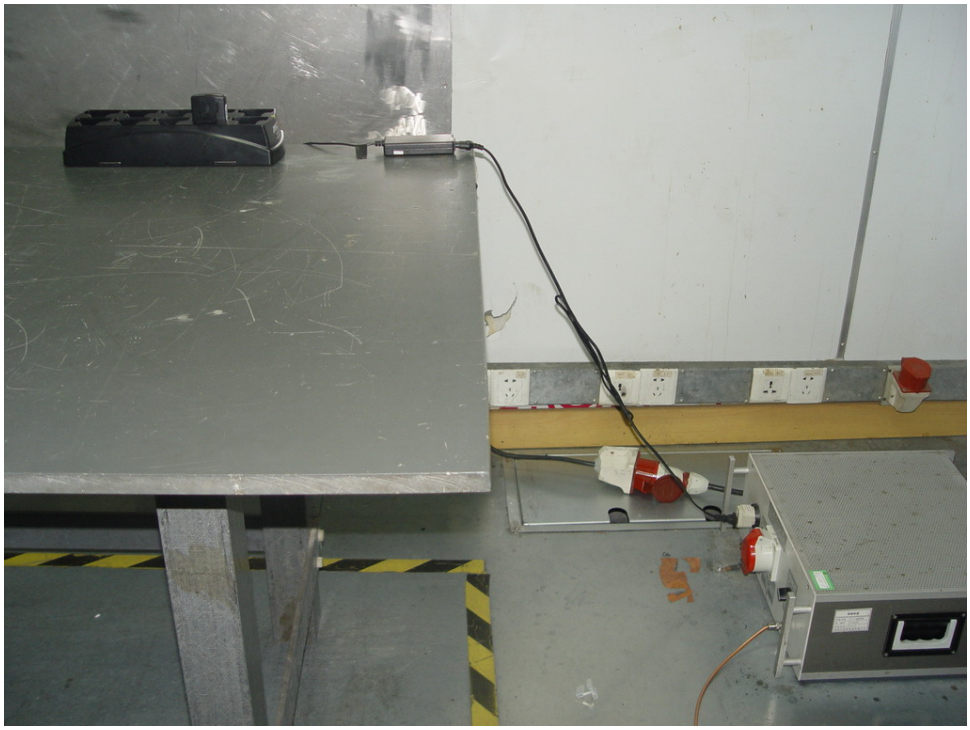
Test setup

Input Voltage	:	AC120V 60Hz to AC/DC Adapter
Operation mode	:	A
Earthing	:	Not connected

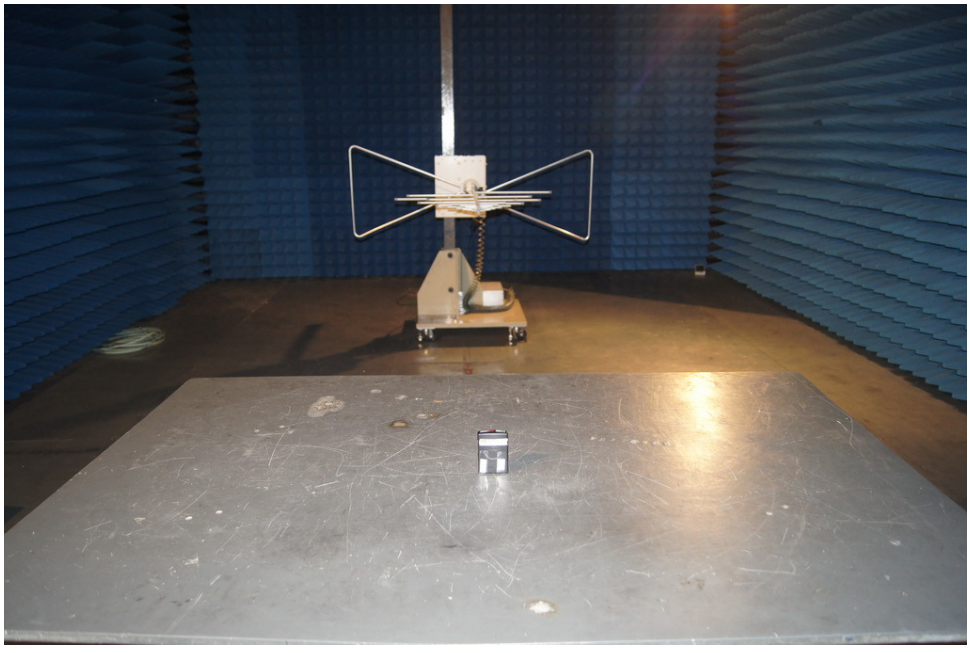
Test data refer to Appendix 1.

6. Photographs of the Test Set-Up

Photograph 1: Set-up for Conducted Emission

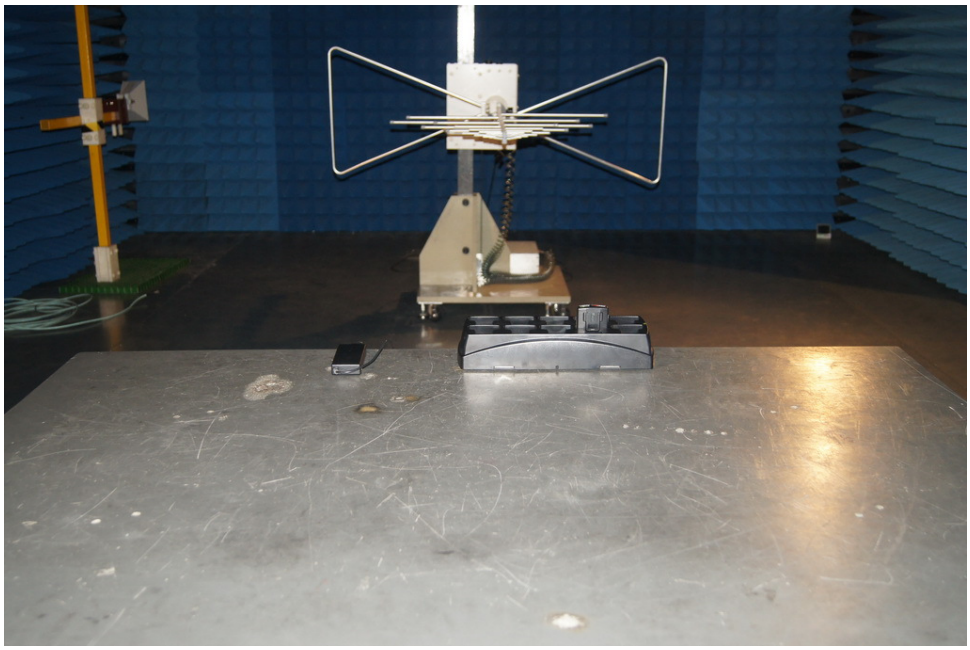


Photograph 2: Set-up for Radiated Emission, below 1GHz, mode A

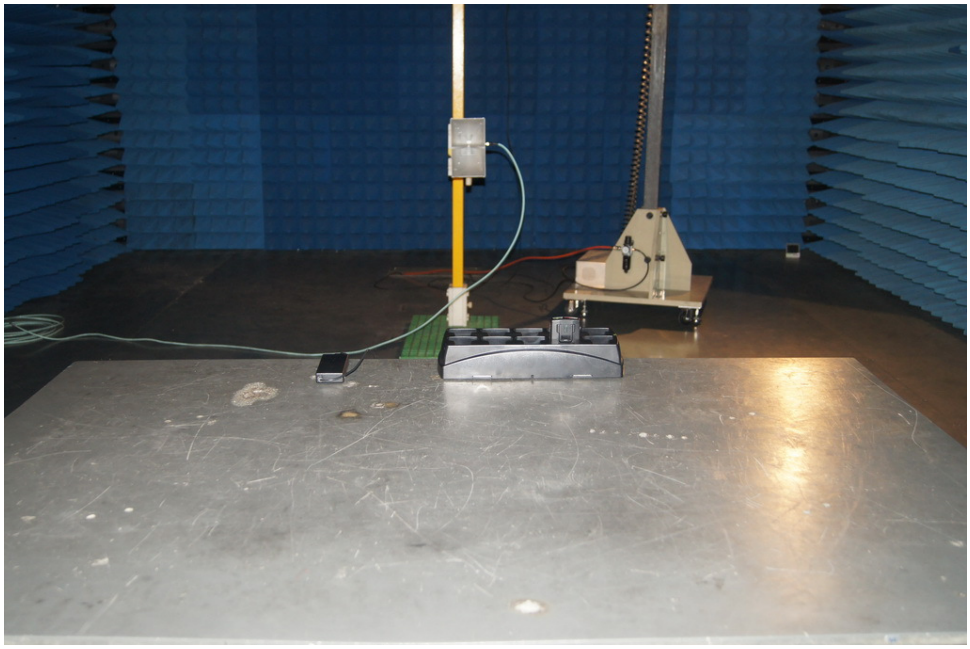


Photograph 3: Set-up for Radiated Emission, above 1GHz, mode A

Photograph 4: Set-up for Radiated Emission, below 1GHz, mode B



Photograph 5: Set-up for Radiated Emission, above 1GHz, mode B



7. List of Tables

8. List of Photographs

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Figure 1: Test figure of conducted emissions, mode B, line live

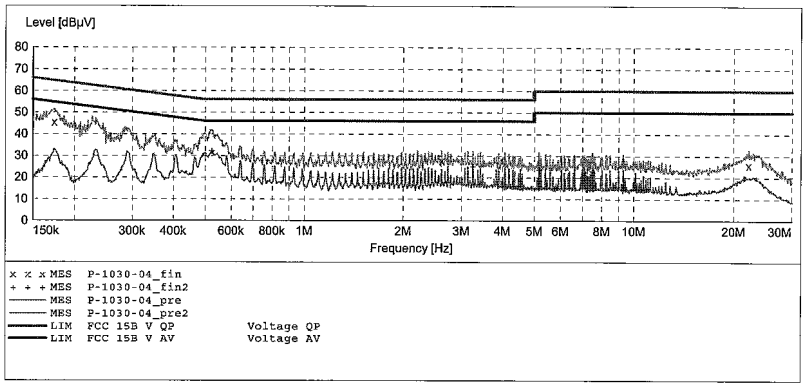
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15 B

```
EUT:                  Commpass Pager M/N:450304
Manufacturer:         Blue Ocean Innovation
Operating Condition:  B
Test Site:            1#Shielding Room
Operator:             PEI
Test Specification:   L 120V/60Hz
Comment:              Mains port
Start of Test:        10/30/2012 / 1:15:33PM
```

SCAN TABLE: "V 150K-30MHz fin"

```
  Short Description:              _SUB_STD_VTERM2 1.70
  Start      Stop       Step      Detector  Meas.     IF       Transducer
  Frequency  Frequency  Width               Time      Bandw.
  150.0 kHz  30.0 MHz   0.8 %     QuasiPeak 1.0 s     9 kHz    NSLK8126 2008
                                  Average
```



MEASUREMENT RESULT: "P-1030-04_fin"

```
10/30/2012  1:18PM
   Frequency     Level  Transd  Limit  Margin  Detector  Line   PE
         MHz      dBµV      dB   dBµV      dB

    0.173876     45.50    11.1     65    19.3  QP        L1     GND
    2.614747     27.70    11.6     56    28.3  QP        L1     GND
   22.217731     25.80    11.1     60    34.2  QP        L1     GND
```

MEASUREMENT RESULT: "P-1030-04_fin2"

```
10/30/2012  1:18PM
   Frequency     Level  Transd  Limit  Margin  Detector  Line   PE
         MHz      dBµV      dB   dBµV      dB

    0.523291     32.10    12.0     46    13.9  AV        L1     GND
    3.256746     24.90    11.5     46    21.1  AV        L1     GND
    5.174811     23.50    11.4     50    26.5  AV        L1     GND
```

Figure 2: Test figure of conducted emissions, mode B, line neutral

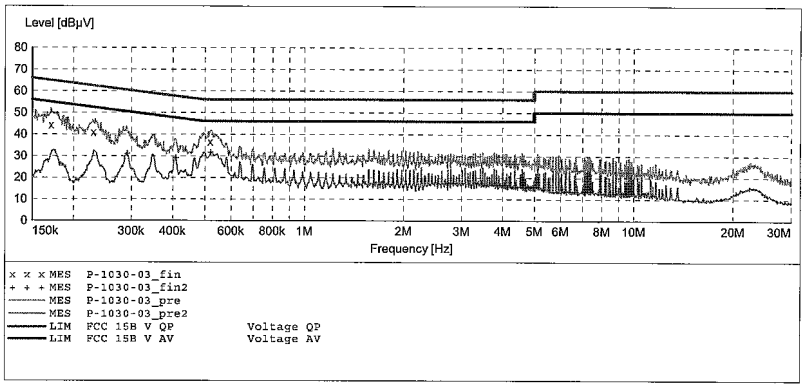
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15 B

```
EUT:                  Commpass Pager M/N:450304
Manufacturer:         Blue Ocean Innovation
Operating Condition:  B
Test Site:            1#Shielding Room
Operator:             PEI
Test Specification:   N 120V/60Hz
Comment:              Mains port
Start of Test:        10/30/2012 / 1:11:33PM
```

SCAN TABLE: "V 150K-30MHz fin"

```
Short Description:                    _SUB_STD_VTERM2 1.70
Start      Stop       Step      Detector  Meas.     IF      Transducer
Frequency  Frequency  Width               Time      Bandw.
150.0 kHz  30.0 MHz   0.8 %     QuasiPeak 1.0 s     9 kHz   NSLK8126 2008
                               Average
```



MEASUREMENT RESULT: "P-1030-03_fin"

10/30/2012 1:14PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.171121	44.30	11.1	65	20.6	QP	N	GND
0.229932	41.00	11.4	63	21.5	QP	N	GND
0.519130	36.50	12.0	56	19.5	QP	N	GND

MEASUREMENT RESULT: "P-1030-03_fin2"

10/30/2012 1:14PM

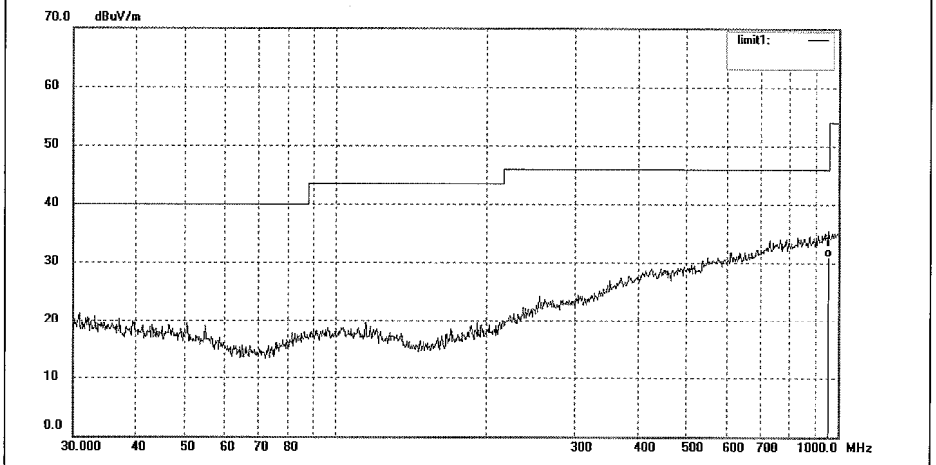
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.290996	31.00	11.6	51	19.5	AV	N	GND
0.408557	29.00	11.8	48	18.7	AV	N	GND
0.521206	31.60	12.0	46	14.4	AV	N	GND

Figure 3: Test figure of Radiated emissions, mode A, Horizontal polarity (30MHz – 1GHz)

ATC®
ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: PYH #358	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 2.4V
Test item: Radiation Test	Date: 12/10/30/
Temp.(C)/Hum.(%) 23 C / 49 %	Time: 10/42/33
EUT: Commpass Pager	Engineer Signature: PEI
Mode: A	Distance: 3m
Model: 450304	
Manufacturer: Blue Ocean Innovation	

Note:



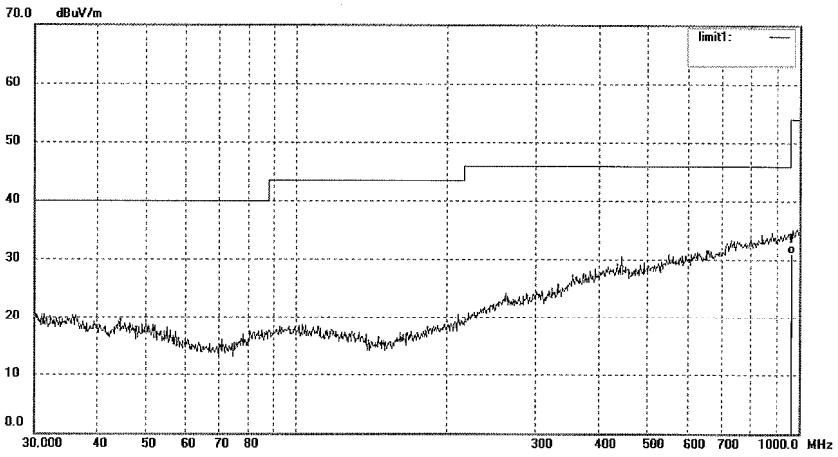
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	960.0000	1.40	29.69	31.09	46.00	-14.91	QP			

Figure 4: Test figure of Radiated emissions, mode A, Vertical polarity (30MHz – 1GHz)

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: PYH #359	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: DC 2.4V
Test item: Radiation Test	Date: 12/10/30/
Temp.(C)/Hum.(%) 23 C / 49 %	Time: 10/50/51
EUT: Commpass Pager	Engineer Signature: PEI
Mode: A	Distance: 3m
Model: 450304	
Manufacturer: Blue Ocean Innovation	

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	960.0000	1.39	29.69	31.08	46.00	-14.92	QP			

Figure 5: Test figure of Radiated emissions, mode A, Horizontal polarity (1GHz – 6GHz)

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ACCURATE TECHNOLOGY CO., LTD.
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Science & Industry Park,Nanshan Shenzhen,P.R.China
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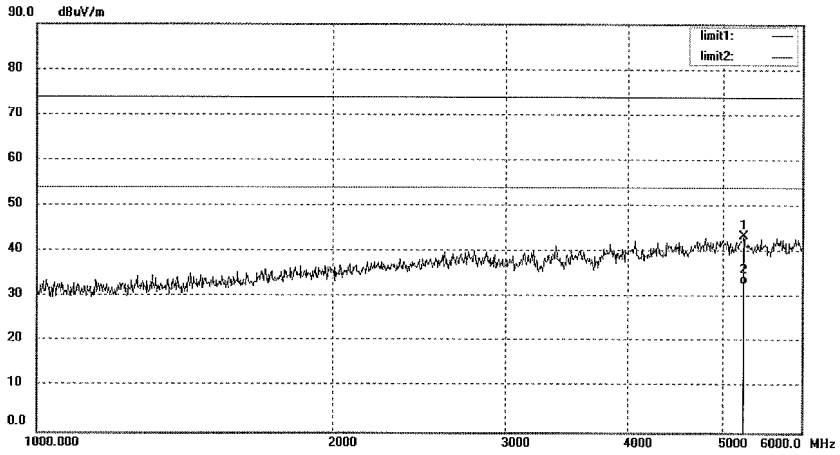
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: PYH #357	Polarization: Horizontal
Standard: FCC PART 15B	Power Source: DC 2.4V
Test item: Radiation Test	Date: 12/10/30/
Temp.(C)/Hum.(%) 23 C / 49 %	Time: 10/35/30
EUT: Commpass Pager	Engineer Signature: PEI
Mode: A	Distance: 3m
Model: 450304	
Manufacturer: Blue Ocean Innovation	

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	5241.283	42.79	0.82	43.61	74.00	-30.39	peak			
2	5241.283	32.05	0.82	32.87	54.00	-21.13	AVG			

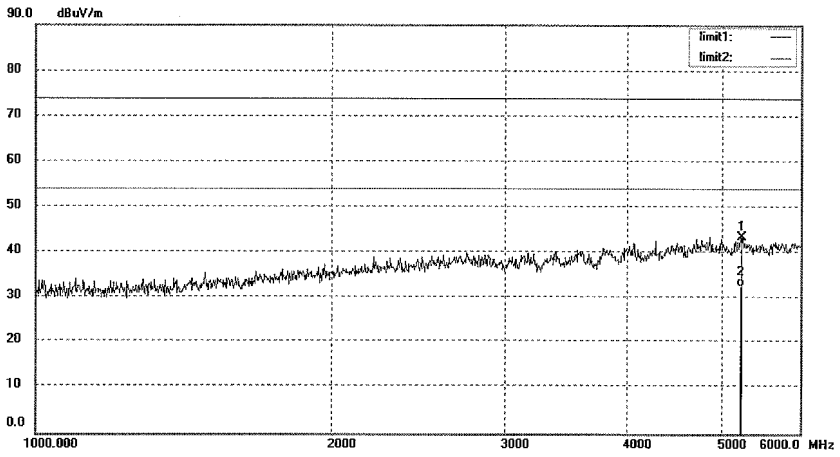
Figure 6: Test figure of Radiated emissions, mode A, Vertical polarity (1GHz – 6GHz)

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: PYH #356
Standard: FCC PART 15B
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 49 %
EUT: Commpass Pager
Mode: A
Model: 450304
Manufacturer: Blue Ocean Innovation

Polarization: Vertical
Power Source: DC 2.4V
Date: 12/10/30/
Time: 10/26/26
Engineer Signature: PEI
Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	5222.422	42.84	0.75	43.59	74.00	-30.41	peak			
2	5222.422	31.96	0.75	32.71	54.00	-21.29	AVG			

Figure 7: Test figure of Radiated emissions, mode B, Horizontal polarity (30MHz – 1GHz)

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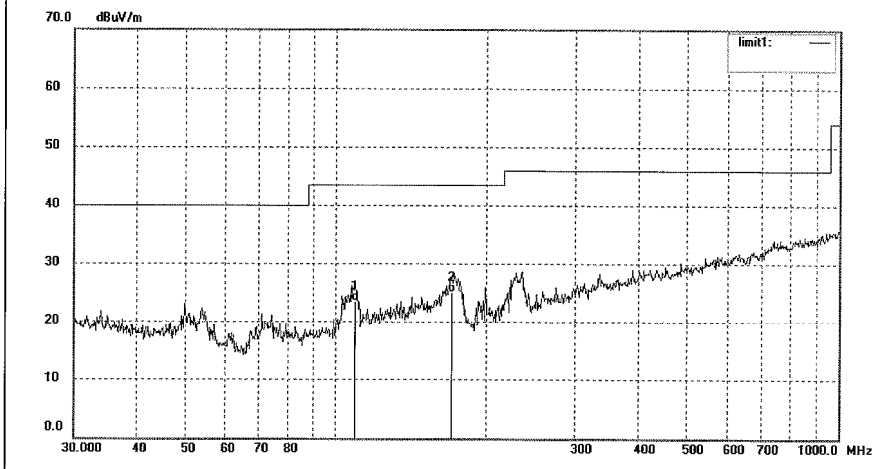
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: PYH #349	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 12/10/30/
Temp.(C)/Hum.(%) 23 C / 49 %	Time: 9/17/52
EUT: Commpass Pager	Engineer Signature: PEI
Mode: B	Distance: 3m
Model: 450304	
Manufacturer: Blue Ocean Innovation	

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	109.3110	9.56	13.95	23.51	43.50	-19.99	QP			
2	170.7878	12.16	12.92	25.08	43.50	-18.42	QP			

Figure 8: Test figure of Radiated emissions, mode B, Vertical polarity (30MHz – 1GHz)

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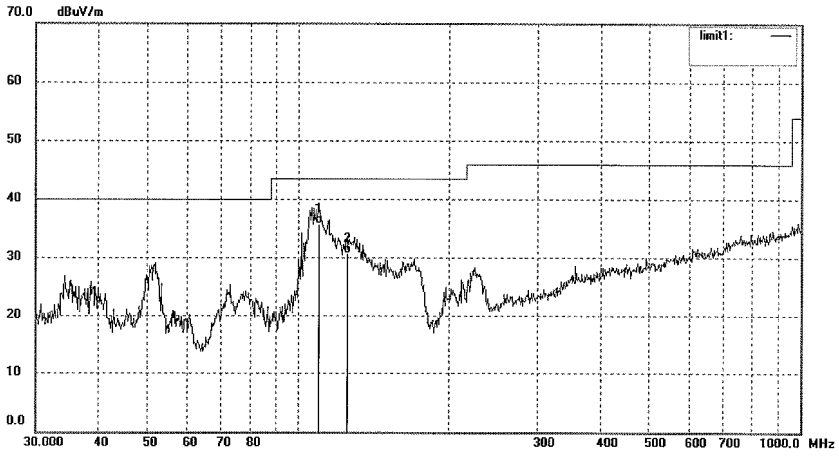
ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: PYH #348	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 12/10/30/
Temp.(C)/Hum.(%) 23 C / 49 %	Time: 9/07/20
EUT: Commpass Pager	Engineer Signature: PEI
Mode: B	Distance: 3m
Model: 450304	
Manufacturer: Blue Ocean Innovation	

Note:



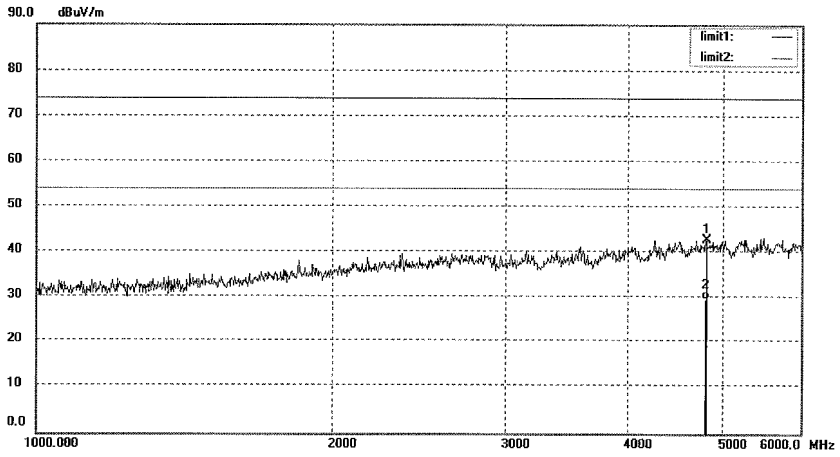
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	109.6957	21.74	13.96	35.70	43.50	-7.80	QP			
2	124.9249	17.62	13.07	30.69	43.50	-12.81	QP			

Figure 9: Test figure of Radiated emissions, mode B, Horizontal polarity (1GHz – 6GHz)

ATC®
ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: PYH #351	Polarization: Horizontal
Standard: FCC PART 15B	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 12/10/30/
Temp.(C)/Hum.(%) 23 C / 49 %	Time: 9/34/56
EUT: Commpass Pager	Engineer Signature: PEI
Mode: B	Distance: 3m
Model: 450304	
Manufacturer: Blue Ocean Innovation	

Note:



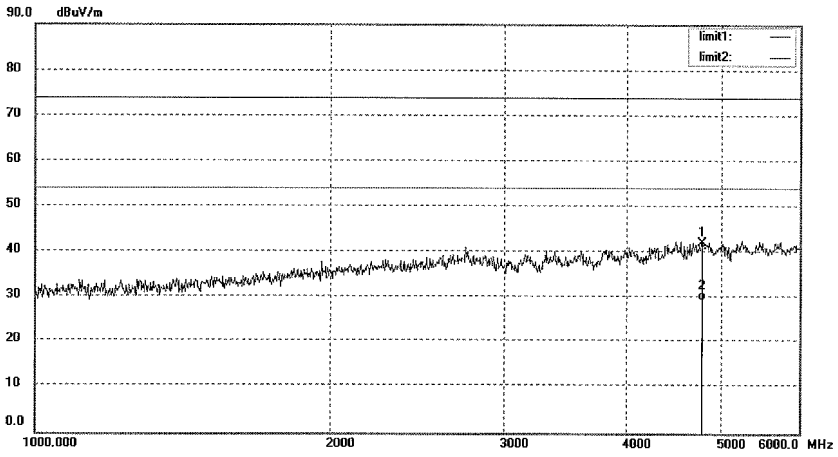
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	4798.197	43.27	-0.32	42.95	74.00	-31.05	peak			
2	4798.197	30.08	-0.32	29.76	54.00	-24.24	AVG			

Figure 10: Test figure of Radiated emissions, mode B, Vertical polarity (1GHz – 6GHz)

ATC®
ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: PYH #350	Polarization: Vertical
Standard: FCC PART 15B	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 12/10/30/
Temp.(C)/Hum.(%) 23 C / 49 %	Time: 9/26/08
EUT: Commpass Pager	Engineer Signature: PEI
Mode: B	Distance: 3m
Model: 450304	
Manufacturer: Blue Ocean Innovation	

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	4772.319	42.76	-0.48	42.28	74.00	-31.72	peak			
2	4772.319	29.99	-0.48	29.51	54.00	-24.49	AVG			