

<b>Prüfbericht-Nr.:</b> <i>Test Report No.:</i>	<b>17041894 001</b>		<b>Auftrags-Nr.:</b> <i>Order No.:</i>	164011659	Seite 1 von 53 <i>Page 1 of 53</i>
<b>Kunden-Referenz-Nr.:</b> <i>Client Reference No.:</i>	N/A		<b>Auftragsdatum:</b> <i>Order date:</i>	06.03.2014	
<b>Auftraggeber:</b> <i>Client:</i>	PLUS Corporation, 1033-1, Oshitate, Inagi-shi, Tokyo 206-0811, JAPAN				
<b>Prüfgegenstand:</b> <i>Test item:</i>	COPYBOARD				
<b>Bezeichnung / Typ-Nr.:</b> <i>Identification / Type No.:</i>	N-31S, N-31W, N-314				
<b>Auftrags-Inhalt:</b> <i>Order content:</i>	FCC Certification				
<b>Prüfgrundlage:</b> <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.225 CFR47 FCC Part 15: Subpart B Section 15.107 CFR47 FCC Part 15: Subpart C Section 15.207 RSS-210 Issue 8 December 2010 RSS-102 Issue 4 March 2010 ICES-003 Issue 5 August 2012				
<b>Wareneingangsdatum:</b> <i>Date of receipt:</i>	15.04.2014				
<b>Prüfmuster-Nr.:</b> <i>Test sample No.:</i>	A000050218-001				
<b>Prüfzeitraum:</b> <i>Testing period:</i>	17.04.2014 - 29.06.2014				
<b>Ort der Prüfung:</b> <i>Place of testing:</i>	Accurate Technology Co., Ltd.				
<b>Prüflaboratorium:</b> <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.				
<b>Prüfergebnis*:</b> <i>Test result*:</i>	Pass				
<b>geprüft von / tested by:</b>  22.09.2014 Owen Tian/Project Manager		<b>kontrolliert von / reviewed by:</b>  22.09.2014 Winnie Hou/Technical Certifier			
Datum Date	Name / Stellung Name / Position	Unterschrift Signature	Datum Date	Name / Stellung Name / Position	Unterschrift Signature
<b>Sonstiges / Other:</b>					
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> <i>Condition of the test item at delivery:</i>			Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(fail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(fail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested					
<b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b> <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>					
VD4					

**Prüfbericht - Nr.:** 17041894 001  
*Test Report No.*

Seite 2 von 53  
*Page 2 of 53*

## TEST SUMMARY

### 5.1.1 EMISSION WITHIN BAND

*RESULT:* Pass

### 5.1.2 SPURIOUS EMISSION OUTSIDE BAND

*RESULT:* Pass

### 5.1.3 FREQUENCY TOLERANCE OF CARRIER SIGNAL

*RESULT:* Pass

### 5.1.4 20dB BANDWIDTH AND 99% BANDWIDTH OF NFC

*RESULT:* Pass

### 5.1.5 CONDUCTED EMISSIONS

*RESULT:* Pass

### 5.1.6 CONDUCTED EMISSIONS

*RESULT:* Pass

### 5.1.1 RADIATED EMISSIONS

*RESULT:* Pass

### 6.1.1 ELECTROMAGNETIC FIELDS

*RESULT:* Pass

## Contents

<b>1. GENERAL REMARKS .....</b>	<b>4</b>
<b>1.1 COMPLEMENTARY MATERIALS .....</b>	<b>4</b>
<b>2. TEST SITES .....</b>	<b>4</b>
<b>2.1 TEST FACILITIES .....</b>	<b>4</b>
<b>2.2 LIST OF TEST AND MEASUREMENT INSTRUMENTS.....</b>	<b>5</b>
<b>2.3 TRACEABILITY .....</b>	<b>6</b>
<b>2.4 CALIBRATION .....</b>	<b>6</b>
<b>2.5 MEASUREMENT UNCERTAINTY.....</b>	<b>6</b>
<b>2.6 LOCATION OF ORIGINAL DATA.....</b>	<b>6</b>
<b>2.7 STATUS OF FACILITY USED FOR TESTING.....</b>	<b>6</b>
<b>3. GENERAL PRODUCT INFORMATION .....</b>	<b>7</b>
<b>3.1 PRODUCT FUNCTION AND INTENDED USE.....</b>	<b>7</b>
<b>3.2 RATINGS AND SYSTEM DETAILS .....</b>	<b>7</b>
<b>3.3 INDEPENDENT OPERATION MODES .....</b>	<b>7</b>
<b>3.4 NOISE GENERATING AND NOISE SUPPRESSING PARTS .....</b>	<b>8</b>
<b>3.5 SUBMITTED DOCUMENTS .....</b>	<b>8</b>
<b>4. TEST SET-UP AND OPERATION MODES .....</b>	<b>9</b>
<b>4.1 PRINCIPLE OF CONFIGURATION SELECTION.....</b>	<b>9</b>
<b>4.2 TEST OPERATION AND TEST SOFTWARE .....</b>	<b>9</b>
<b>4.3 SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT .....</b>	<b>9</b>
<b>4.4 COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE.....</b>	<b>9</b>
<b>4.5 TEST SETUP DIAGRAM .....</b>	<b>10</b>
<b>5. TEST RESULTS .....</b>	<b>12</b>
<b>5.1 TRANSMITTER REQUIREMENT &amp; TEST SUITES .....</b>	<b>12</b>
<b>5.1.1 Emission within band .....</b>	<b>12</b>
<b>5.1.2 Spurious Emission outside band.....</b>	<b>15</b>
<b>5.1.3 Frequency tolerance of carrier signal.....</b>	<b>20</b>
<b>5.1.4 20dB Bandwidth and 99% Bandwidth of NFC .....</b>	<b>21</b>
<b>5.1.5 Conducted emissions.....</b>	<b>22</b>
<b>5.1.6 Conducted emissions.....</b>	<b>25</b>
<b>5.1.1 Radiated emissions.....</b>	<b>32</b>
<b>6. SAFETY HUMAN EXPOSURE .....</b>	<b>49</b>
<b>6.1 RADIO FREQUENCY EXPOSURE COMPLIANCE.....</b>	<b>49</b>
<b>6.1.1 Electromagnetic Fields.....</b>	<b>49</b>
<b>7. PHOTOGRAPHS OF THE TEST SET-UP .....</b>	<b>50</b>
<b>8. LIST OF TABLES .....</b>	<b>53</b>
<b>9. LIST OF PHOTOGRAPHS .....</b>	<b>53</b>

**Prüfbericht - Nr.:** 17041894 001  
*Test Report No.*

Seite 4 von 53  
*Page 4 of 53*

## 1. General Remarks

### 1.1 Complementary Materials

None.

## 2. Test Sites

### 2.1 Test Facilities

Accurate Technology Co., Ltd.

(FCC Registration No.: 752051)  
(Test site Industry Canada No.: 5077A-2)

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

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
<b>Transmitter spurious emissions &amp; Receiver spurious emissions</b>				
Spectrum Analyzer	Agilent	E7405A	MY45115511	2015-01-11
Test Receiver	Rohde & Schwarz	ESCS30	100307	2015-01-11
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	2015-01-11
Loop Antenna	Schwarzbeck	FMZB1516	1516131	2015-01-11
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	2015-01-11
50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	2015-01-11
Pre-Amplifier	Rohde & Schwarz	CBLU118354 0-01	3791	2015-01-11
Temp. & Humid. Chamber	Gongwen	HSD-500	0109	2015-01-11
<b>Radio Spectrum Test</b>				
EMI Test Receiver	Rohde & Schwarz	ESPI-3	100396/003	2015-01-11
Spectrum Analyzer	Agilent	E7405A	MY45115511	2015-01-11
Temp. & Humid. Chamber	Gongwen	HSD-500	0109	2015-01-11
<b>Conducted Emission</b>				
Test Receiver	Rohde & Schwarz	ESCS30	100307	2015-01-11
L.I.S.N.	Schwarzbeck	NLSK8126	8126431	2015-01-11
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100815	2015-01-11
50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283933	2015-01-11
<b>Radiated Emission</b>				
Spectrum Analyzer	Agilent	E7405A	MY45115511	2015-01-11
Test Receiver	Rohde & Schwarz	ESCS30	100307	2015-01-11
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	2015-01-11
Loop Antenna	Schwarzbeck	FMZB1516	1516131	2015-01-11
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	2015-01-11
50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	2015-01-11
Pre-Amplifier	Rohde & Schwarz	CBLU118354 0-01	3791	2015-01-11
RF Coaxial Cable (966 Chamber) (for below 1GHz test)	Suhner	N-3m	No.8	2015-01-11
RF Coaxial Cable (966 Chamber) (for below 1GHz test)	Resenberger	N-3.5m	No.9	2015-01-11
RF Coaxial Cable (966 Chamber) (for below 1GHz test)	Suhner	N-6m	No.10	2015-01-11
RF Coaxial Cable (966 Chamber) (for above 1GHz test)	Resenberger	N-12m	No.11	2015-01-11
RF Coaxial Cable (966 Chamber) (for above 1GHz test)	Resenberger	N-0.5m	No.12	2015-01-11

## 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 basis using in house standards or comparisons.

## 2.5 Measurement Uncertainty

**Table 2: Measurement Uncertainty**

Parameter	Uncertainty
Radio Spectrum	< ± 0.60 dB
Radiated emission of transmitter, valid up to 12.75 GHz	< ± 4.42 dB
Radiated emission of receiver, valid up to 12.75 GHz	< ± 4.42 dB
Conducted Emission	< ± 2.23 dB
Radiated Emission	< ± 4.42 dB

## 2.6 Location of Original Data

The original copies of all test data taken during actual testing were retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

## 2.7 Status of Facility Used for Testing

Accurate Technology Co., Ltd. test facility located at F1, Bldg. A, Changyuan New Material Port Keyuan Rd., Science & Industry Park, Nanshan, Shenzhen, 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 EUTs are copyboards with NFC function (13.56MHz), which can communicate with an IC card. These models are identical except the panel size.

**Table 3: Model difference**

Model	N-31S	N-31W	N-314
External dimension	W1480*D675*H1947mm	W1980*D675*H1947mm	W1480*D675*H1947mm
Panel size	H910*W1300mm	H910*W1800mm	H910*W1300mm
Effective reading size	H900*W1280	H900*W1780	H900*W1280
Main unit weight	20.0kg	25.0kg	25.0kg
Number of page	2	2	4

#### 3.2 Ratings and System Details

**Table 4: Technical Specification of EUT**

Technical Specification	Value
Kind of Equipment	PLUS COPYBOARD
Type Designation	N-31S, N-31W, N-314
Operating Frequency band	13.56MHz
Channel Bandwidth	14kHz
Extreme Temperature Range	-20~+45°C
Operation Voltage	DC 12V (via marketed AC/DC adapter)
Modulation	ASK
Antenna Gain	-64dBi

#### 3.3 Independent Operation Modes

The basic operation modes are:

- A. On
  - 1. NFC function, transmitting
  - 2. Connected to PC
  - 3. USB mode
  - 4. Printing
- B. Standby
- C. Off

**Prüfbericht - Nr.:** 17041894 001  
*Test Report No.*

Seite 8 von 53  
Page 8 of 53

### 3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

### 3.5 Submitted Documents

- Bill of Material
- PCB Layout
- Photo Document
- Circuit Diagram
- Instruction Manual
- Rating Label

## 4. Test Set-up and Operation Modes

### 4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power 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. All testing were performed according to the procedures in ANSI C63.4: 2003.

According to clause 3.1, all tests were applied on model N-31W only.

### 4.3 Special Accessories and Auxiliary Equipment

The EUT was tested together with the following accessories:

Description	Manufacturer	Part No.	S/N
Notebook	Lenovo	ThinkPad x230i	---
Printer	HP	HP Deskjet 1000	CN13J21H6X
AC/DC adapter (marketed)	LI TONE ELECTRONICS CO., LTD.	LTE36E.S2.3	N/A

The EUTs were tested with following cables:

Interface(s)/Port(s):	Max. cable length, shielding	Cable classification
AC Mains of Adapter	2 cores, non-shielded port, 3m	AC Power Input
DC input of EUT	2 cores, non-shielded port, 3m	DC Power Input
RJ 45 port	8 cores, non-shielded port, 3m	Signal port
USB port	4 cores, non-shielded port, 3m	Signal port
USB port (connecting to printer)	4 cores, non-shielded port, 3m	Signal port

### 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

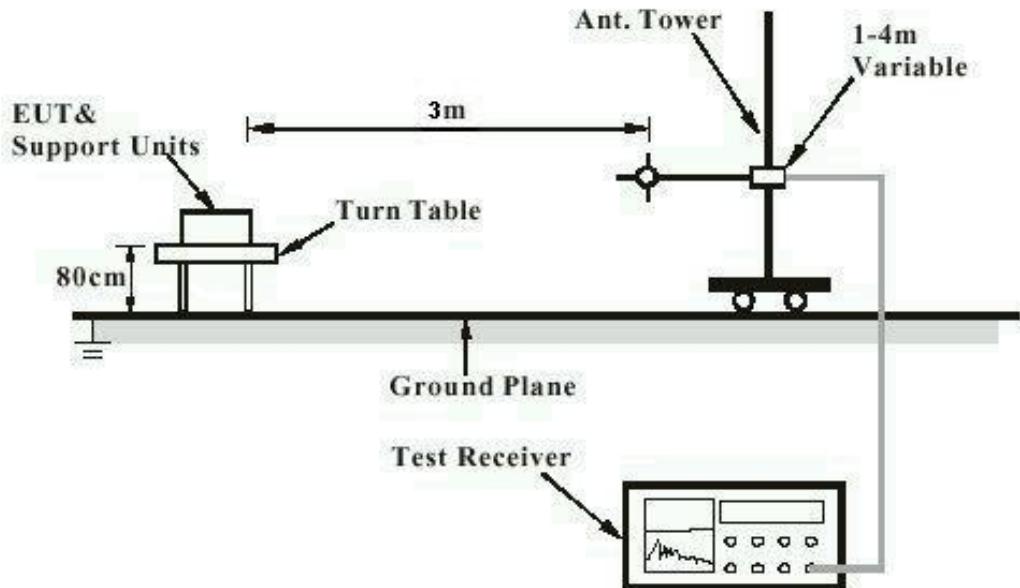
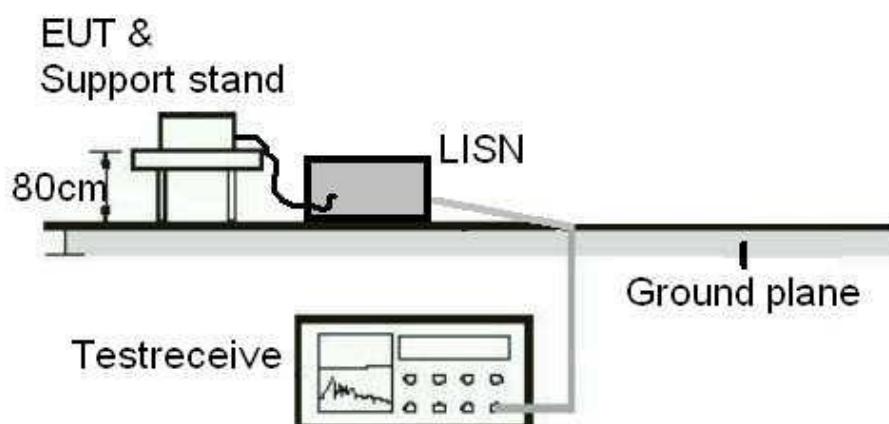


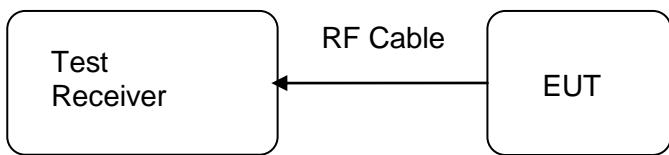
Diagram of Measurement Equipment Configuration for Conduction Measurement



**Prüfbericht - Nr.:** 17041894 001  
*Test Report No.*

Seite 11 von 53  
*Page 11 of 53*

**Diagram of Measurement Equipment Configuration for Transmitter Measurement**



## 5. Test Results

### 5.1 Transmitter Requirement & Test Suites

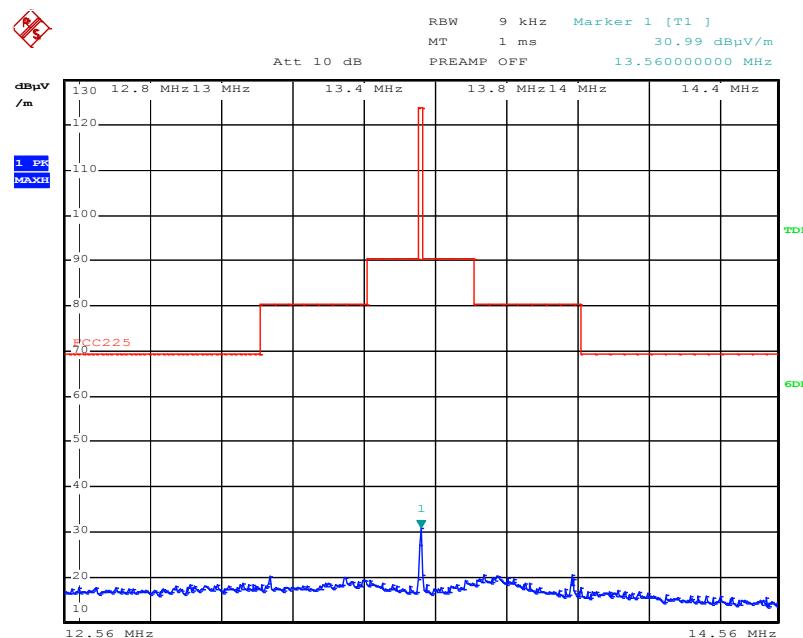
#### 5.1.1 Emission within band

RESULT:	Pass
Test standard	: FCC Part 15.225 (a), (b), (c) RSS-210 A2.6 (a), (b), (c)
Basic standard	: ANSI C63.4: 2003
Limit	: FCC Part 15.225 (a), (b), (c)
Kind of test site	: Shielded room

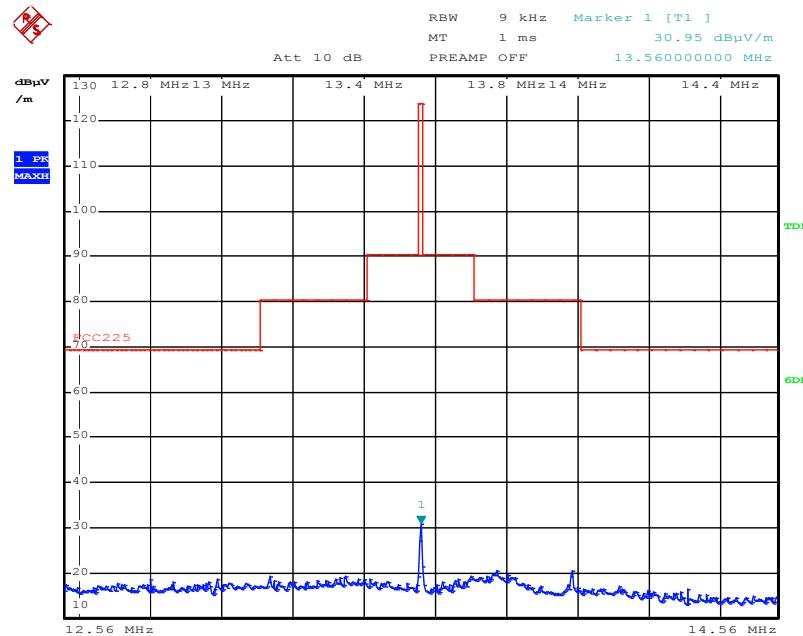
#### Test setup

Test date	:	2014-06-29
Operation mode	:	A.1.a
Ambient temperature	:	25°C
Relative humidity	:	52%
Atmospheric pressure	:	101kPa

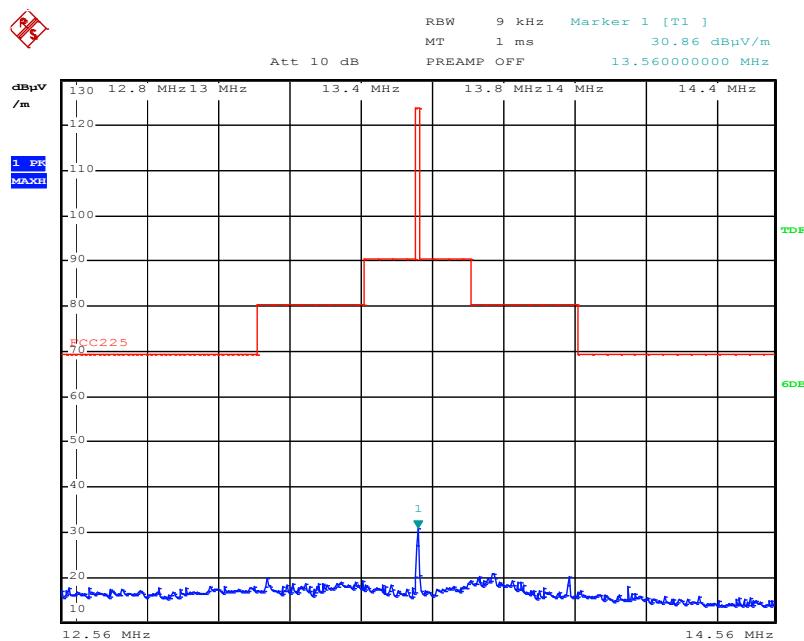
For details refer to following test plot.

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 13 von 53**  
*Page 13 of 53*


Date: 29.JUN.2014 20:01:14



Date: 29.JUN.2014 20:02:14

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 14 von 53**  
*Page 14 of 53*


Date: 29.JUN.2014 20:03:15

**Prüfbericht - Nr.:** 17041894 001  
*Test Report No.*

Seite 15 von 53  
Page 15 of 53

### 5.1.2 Spurious Emission outside band

#### RESULT:

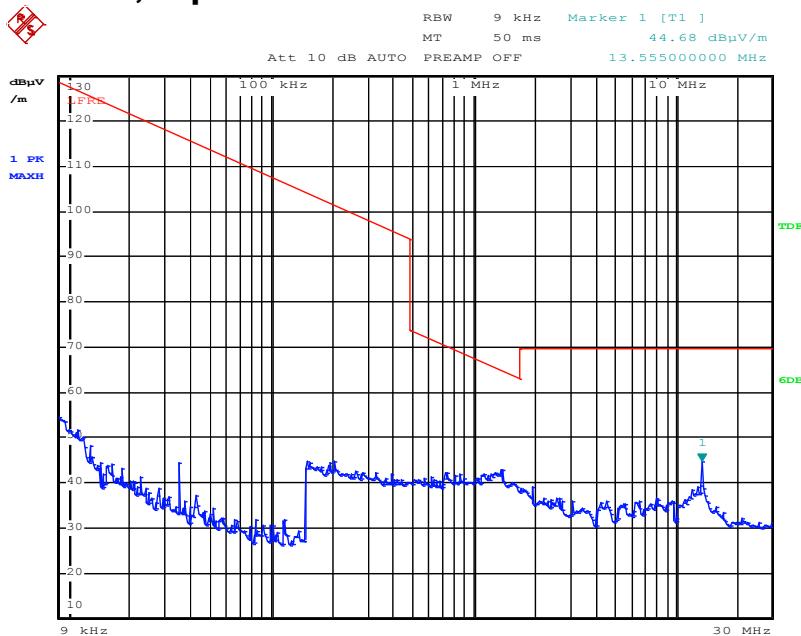
Pass

Test standard : FCC part 15.225 (d)  
Basic standard : RSS-210 A2.6 (d)  
Limits : ANSI C63.4: 2003  
Kind of test site : FCC part 15.209(a)  
Kind of test site : 3m Semi-Anechoic Chamber

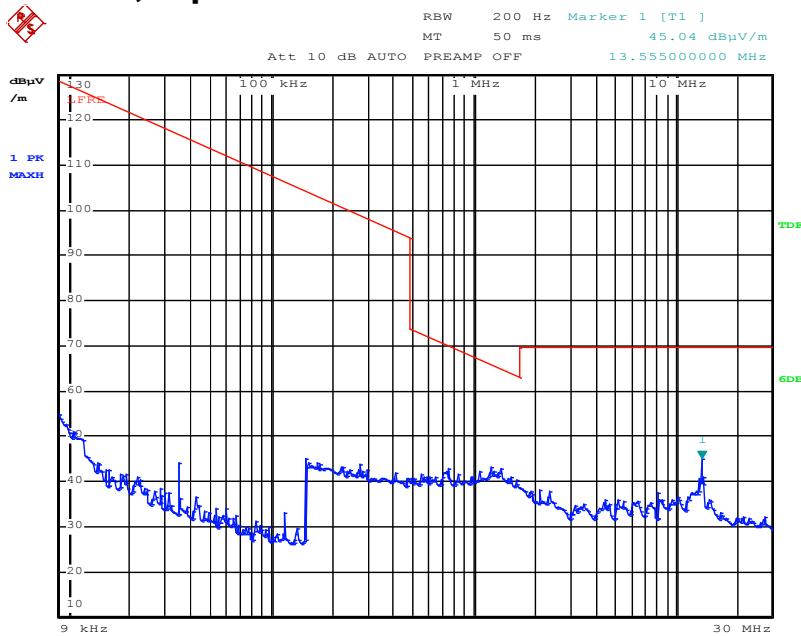
#### Test setup

Date of testing : 2014-06-29  
Operation mode : A.1.a  
Ambient temperature : 23°C  
Relative humidity : 48%  
Atmospheric pressure : 101kPa

For details refer to following test plot.

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 16 von 53**  
*Page 16 of 53*
**Test Plot of Spurious Emission of transmitter  
Below 30MHz, X polarization:**


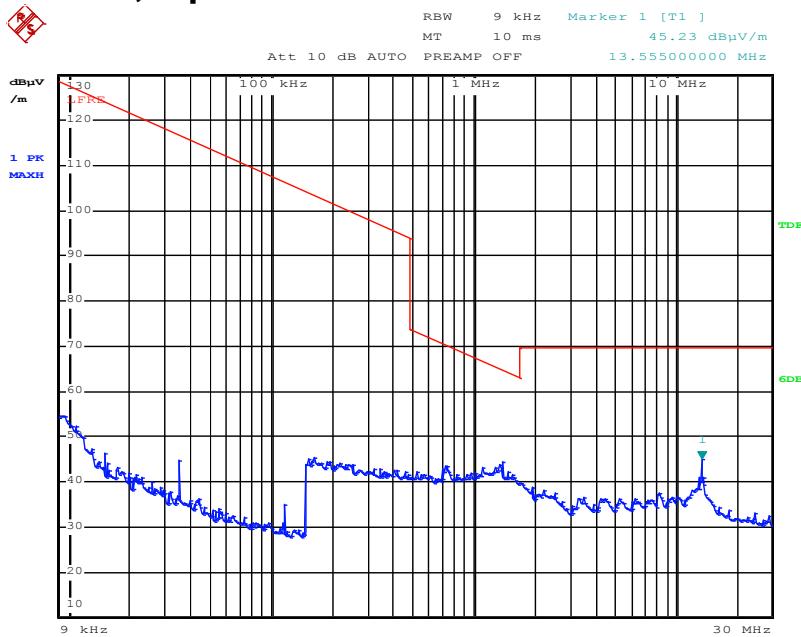
Date: 29.JUN.2014 20:26:29

**Below 30MHz, Y polarization:**


Date: 29.JUN.2014 20:28:30

Prüfbericht - Nr.: 17041894 001  
Test Report No.Seite 17 von 53  
Page 17 of 53

## Below 30MHz, Z polarization:



Date: 29.JUN.2014 20:39:04

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 18 von 53**  
*Page 18 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: PZ #787

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2014/06/29

Temp. ( C)/Hum.(%) 23 C / 48 %

Time: 21:04:39

EUT: Copyboard

Engineer Signature: PEI

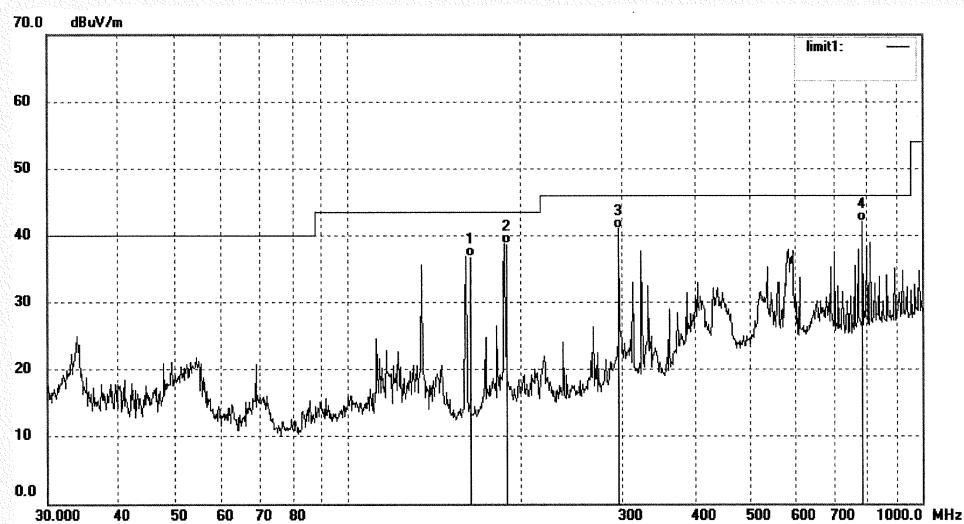
Mode: TX

Distance:

Model: N-31W

Manufacturer: PLUS Corporation

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	162.7200	51.26	-14.50	36.76	43.50	-6.74	QP			
2	189.8410	51.44	-12.65	38.79	43.50	-4.71	QP			
3	298.3240	50.43	-9.32	41.11	46.00	-4.89	QP			
4	786.4885	42.35	-0.27	42.08	46.00	-3.92	QP			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 19 von 53**  
*Page 19 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 2# Chamber

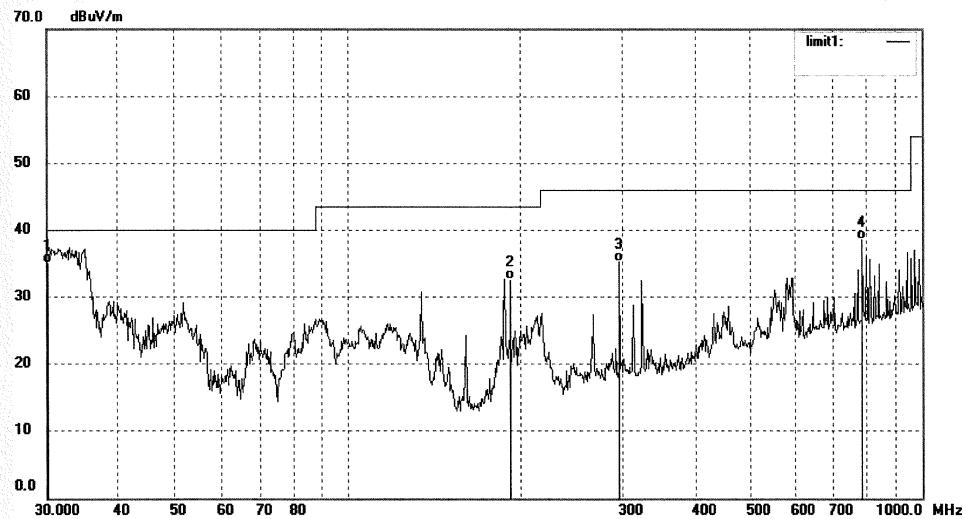
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: PZ #788  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp. ( C)/Hum.(%) 23 C / 48 %  
EUT: Copyboard  
Mode: TX  
Model: N-31W  
Manufacturer: PLUS Corporation

Polarization: Vertical  
Power Source: AC 120V/60Hz  
Date: 2014/06/29  
Time: 21:15:34  
Engineer Signature: PEI  
Distance:

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.0000	45.01	-9.93	35.08	40.00	-4.92	QP			
2	189.8400	45.35	-12.65	32.70	43.50	-10.80	QP			
3	298.3200	44.60	-9.32	35.28	46.00	-10.72	QP			
4	786.4820	38.87	-0.27	38.60	46.00	-7.40	QP			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 20 von 53**  
*Page 20 of 53*

### 5.1.3 Frequency tolerance of carrier signal

**RESULT:**
**Pass**

Test standard	:	FCC part 15.225 (e) RSS-210 A2.6
Basic standard	:	ANSI C63.4: 2003
Limits	:	±0.01%
Kind of test site	:	3m Semi-Anechoic Chamber

**Test setup**

Date of testing	:	2014-06-27
Operation mode	:	A.1.a
Ambient temperature	:	23°C
Relative humidity	:	48%
Atmospheric pressure	:	101kPa

**Table 5: Test result of frequency tolerance of voltage variation**

Voltage	Frequency tolerance	
	Test result (ppm)	Limit (ppm)
AC 102V	1.47	100
AC 120V	1.47	
AC 138V	1.47	

**Table 6: Test result of frequency tolerance of voltage variation**

Temperature	Frequency tolerance	
	Test result (ppm)	Limit (ppm)
-20°C	2.95	100
-10°C	2.21	
0°C	2.95	
10°C	2.95	
20°C	2.21	
30°C	2.21	
40°C	2.95	
50°C	2.21	
60°C	1.47	
70°C	2.21	

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*Seite 21 von 53  
Page 21 of 53**5.1.4 20dB Bandwidth and 99% Bandwidth of NFC****RESULT:****Pass**

Test standard	:	FCC part 15.225
	:	RSS-210 A2.6
Basic standard	:	ANSI C63.4: 2003
Kind of test site	:	Shielded room

**Test setup**

Date of testing	:	2014-06-27
Operation Mode	:	A.1.a
Ambient temperature	:	25°C
Relative humidity	:	52%
Atmospheric pressure	:	101kPa

**Table 7: Test result of 20dB & 99% Bandwidth**

Channel Frequency (MHz)	20dB Bandwidth (kHz)	99% Bandwidth (kHz)
13.56MHz	2.64	10.72

**Prüfbericht - Nr.:** 17041894 001  
*Test Report No.*

Seite 22 von 53  
Page 22 of 53

### 5.1.5 Conducted emissions

#### RESULT:

Pass

Test standard	:	FCC Part 15.207
		RSS-Gen Issue 3 December 2010
Basic standard	:	ANSI C63.4: 2003
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207 (a) Table 4 of RSS-Gen Issue 3 December 2010
Kind of test site	:	Shield room

#### Test setup

Date of testing	:	2014-04-17
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A.1
Earthing	:	Not Connected
Ambient temperature	:	25°C
Relative humidity	:	52%
Atmospheric pressure	:	101kPa

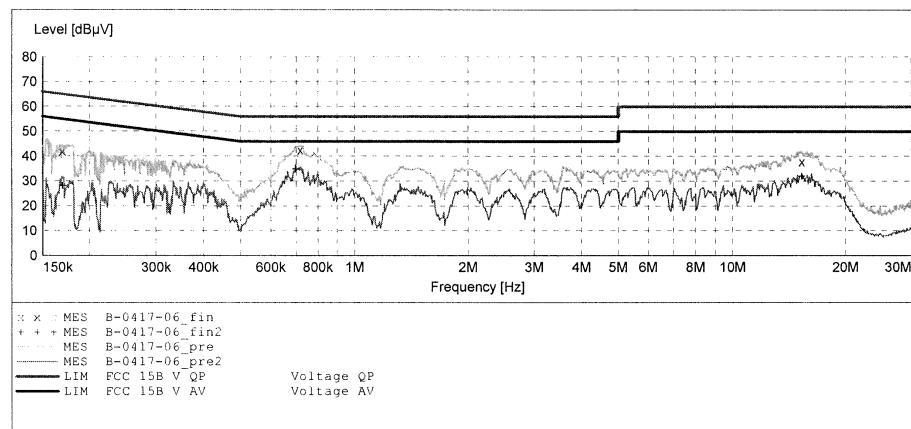
For details refer to following test plot.

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 23 von 53**  
*Page 23 of 53*
**ACCURATE TECHNOLOGY CO., LTD**
**CONDUCTED EMISSION STANDARD FCC PART 15 B**

EUT: Copyboard M/N:N-31W  
 Manufacturer: PLUS Corporation  
 Operating Condition: NFC  
 Test Site: 1#Shielding Room  
 Operator: LAN  
 Test Specification: L 120V/60Hz  
 Comment: Mains Port  
 Start of Test: 4/17/2014 /

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

Start Frequency	Stop Frequency	Step Width	Detector	Meas.	IF Time	Transducer
150.0 kHz	30.0 MHz	4.5 kHz	QuasiPeak	1.0 s	9 kHz	NSLK8126 2008
Average						


**MEASUREMENT RESULT: "B-0417-06\_fin"**

4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.169084	42.10	10.5	65	22.9	QP	L1	GND
	0.717310	42.50	10.8	56	13.5	QP	L1	GND
	15.266191	37.80	11.4	60	22.2	QP	L1	GND

**MEASUREMENT RESULT: "B-0417-06\_fin2"**

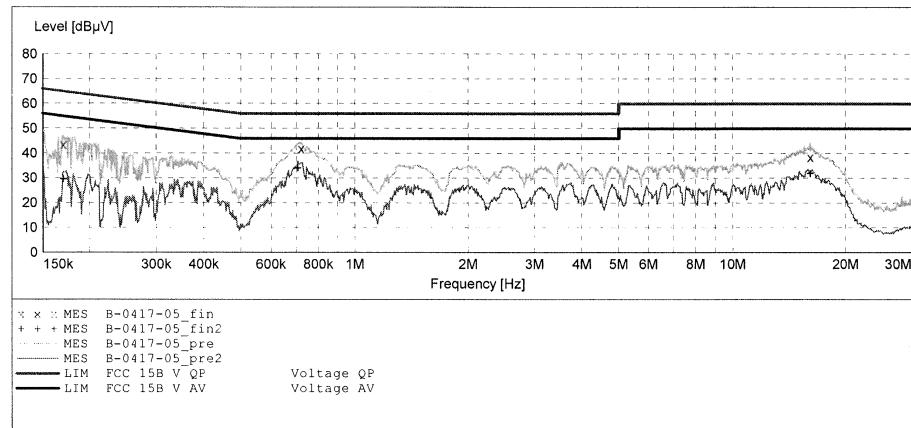
4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.169084	28.10	10.5	55	26.9	AV	L1	GND
	0.697543	34.70	10.8	46	11.3	AV	L1	GND
	15.266191	31.80	11.4	50	18.2	AV	L1	GND

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 24 von 53**  
*Page 24 of 53*
**ACCURATE TECHNOLOGY CO., LTD**
**CONDUCTED EMISSION STANDARD FCC PART 15 B**

EUT: Copyboard M/N:N-31W  
 Manufacturer: PLUS Corporation  
 Operating Condition: NFC  
 Test Site: 1#Shielding Room  
 Operator: LAN  
 Test Specification: N 120V/60Hz  
 Comment: Mains Port  
 Start of Test: 4/17/2014 /

**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 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average


**MEASUREMENT RESULT: "B-0417-05\_fin"**

4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.169760	43.60	10.5	65	21.4	QP	N	GND
	0.720179	41.90	10.8	56	14.1	QP	N	GND
	16.079367	38.40	11.4	60	21.6	QP	N	GND

**MEASUREMENT RESULT: "B-0417-05\_fin2"**

4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.169760	29.50	10.5	55	25.5	AV	N	GND
	0.705947	33.90	10.8	46	12.1	AV	N	GND
	16.079367	31.70	11.4	50	18.3	AV	N	GND

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*Seite 25 von 53  
Page 25 of 53**5.1.6 Conducted emissions****RESULT:****Pass**

Test standard	:	FCC Part 15.107 ICES-003 Issue 5 August 2012
Basic standard	:	ANSI C63.4: 2003
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.107 (b) Table 1 of ICES-003 Issue 5 August 2012
Kind of test site	:	Shield room

**Test setup**

Date of testing	:	2014-04-17
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Earthing	:	Not Connected
Ambient temperature	:	25°C
Relative humidity	:	52%
Atmospheric pressure	:	101kPa

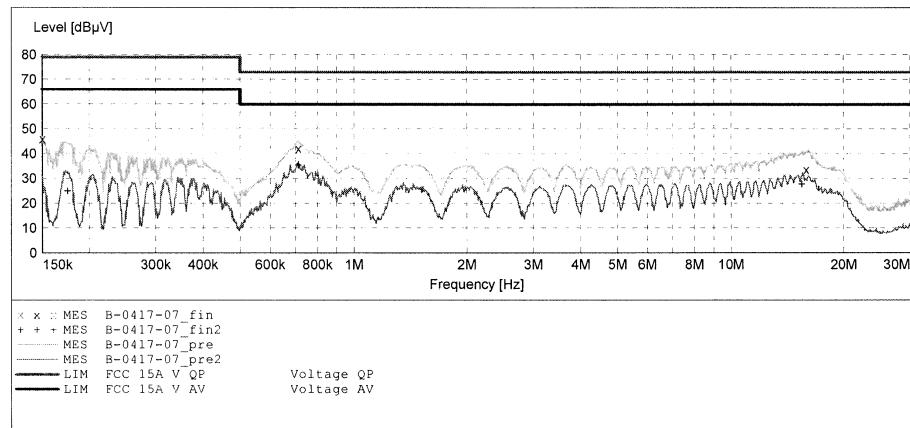
For details refer to following test plot.

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 26 von 53**  
*Page 26 of 53*
**ACCURATE TECHNOLOGY CO., LTD**
**CONDUCTED EMISSION STANDARD FCC PART 15 A**

EUT: Copyboard M/N:N-31W  
 Manufacturer: PLUS Corporation  
 Operating Condition: Communication  
 Test Site: 1#Shielding Room  
 Operator: LAN  
 Test Specification: L 120V/60Hz  
 Comment: Mains Port  
 Start of Test: 4/17/2014 /

**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 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average


**MEASUREMENT RESULT: "B-0417-07\_fin"**

4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.150000	46.00	10.5	79	33.0	QP	L1	GND
	0.711605	42.10	10.8	73	30.9	QP	L1	GND
	15.887948	33.70	11.4	73	39.3	QP	L1	GND

**MEASUREMENT RESULT: "B-0417-07\_fin2"**

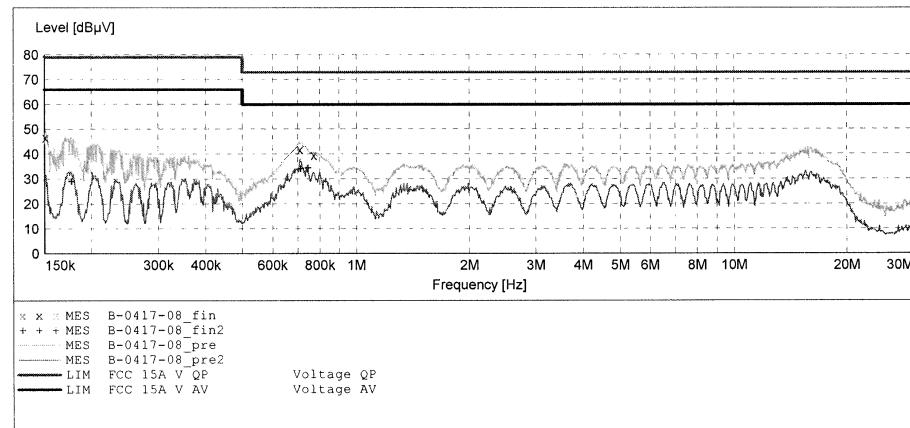
4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.174571	24.90	10.5	66	41.1	AV	L1	GND
	0.711605	35.30	10.8	60	24.7	AV	L1	GND
	15.450119	27.60	11.4	60	32.4	AV	L1	GND

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 27 von 53**  
*Page 27 of 53*
**ACCURATE TECHNOLOGY CO., LTD**
**CONDUCTED EMISSION STANDARD FCC PART 15 A**

EUT: Copyboard M/N:N-31W  
 Manufacturer: PLUS Corporation  
 Operating Condition: Communication  
 Test Site: 1#Shielding Room  
 Operator: LAN  
 Test Specification: N 120V/60Hz  
 Comment: Mains Port  
 Start of Test: 4/17/2014 /

**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 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average


**MEASUREMENT RESULT: "B-0417-08\_fin"**

4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.150600	46.70	10.5	79	32.3	QP	N	GND
	0.708770	41.80	10.8	73	31.2	QP	N	GND
	0.770750	39.50	10.8	73	33.5	QP	N	GND

**MEASUREMENT RESULT: "B-0417-08\_fin2"**

4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.176674	28.90	10.5	66	37.1	AV	N	GND
	0.711605	34.00	10.8	60	26.0	AV	N	GND
	0.743550	34.30	10.8	60	25.7	AV	N	GND

# Prüfbericht - Nr.: 17041894 001

*Test Report No.*

Seite 28 von 53  
*Page 28 of 53*

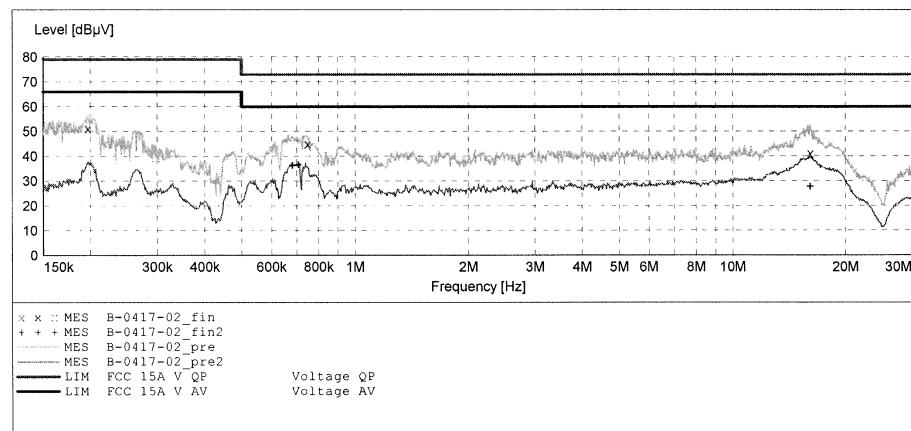
**ACCURATE TECHNOLOGY CO., LTD**

**CONDUCTED EMISSION STANDARD FCC PART 15 A**

EUT: Copyboard M/N:N-31W  
 Manufacturer: PLUS Corporation  
 Operating Condition: USB mode  
 Test Site: 1#Shielding Room  
 Operator: LAN  
 Test Specification: L 120V/60Hz  
 Comment: Mains Port  
 Start of Test: 4/17/2014 /

**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 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



**MEASUREMENT RESULT: "B-0417-02\_fin"**

4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.196781	51.20	10.5	79	27.8	QP	L1	GND
	0.746522	45.00	10.8	73	28.0	QP	L1	GND
	16.079304	41.10	11.4	73	31.9	QP	L1	GND

**MEASUREMENT RESULT: "B-0417-02\_fin2"**

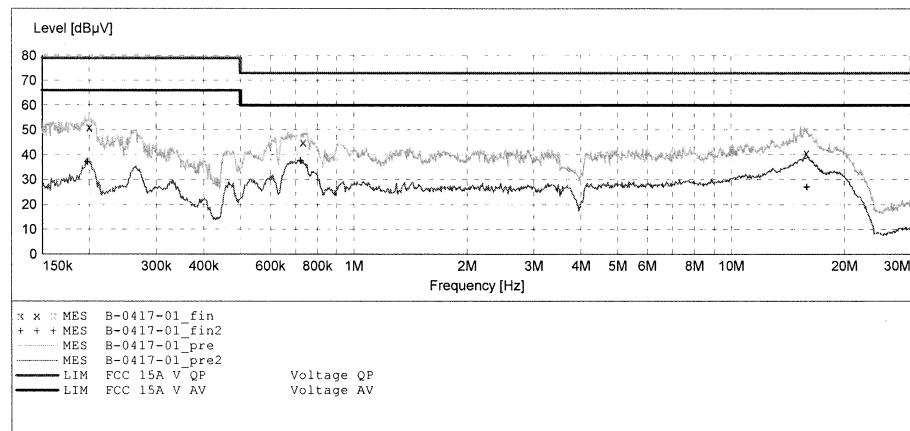
4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.681033	36.20	10.8	60	23.8	AV	L1	GND
	0.705947	36.50	10.8	60	23.5	AV	L1	GND
	16.079304	27.60	11.4	60	32.4	AV	L1	GND

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 29 von 53**  
*Page 29 of 53*
**ACCURATE TECHNOLOGY CO., LTD**
**CONDUCTED EMISSION STANDARD FCC PART 15 A**

EUT: Copyboard M/N:N-31W  
 Manufacturer: PLUS Corporation  
 Operating Condition: USB mode  
 Test Site: 1#Shielding Room  
 Operator: LAN  
 Test Specification: N 120V/60Hz  
 Comment: Mains Port  
 Start of Test: 4/17/2014 /

**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 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average


**MEASUREMENT RESULT: "B-0417-01\_fin"**

4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.199949	51.10	10.5	79	27.9	QP	N	GND
	0.731769	45.10	10.8	73	27.9	QP	N	GND
	15.824587	40.60	11.4	73	32.4	QP	N	GND

**MEASUREMENT RESULT: "B-0417-01\_fin2"**

4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.197568	37.10	10.5	66	28.9	AV	N	GND
	0.720179	37.60	10.8	60	22.4	AV	N	GND
	15.887885	27.00	11.4	60	33.0	AV	N	GND

# Prüfbericht - Nr.: 17041894 001

*Test Report No.*

Seite 30 von 53  
*Page 30 of 53*

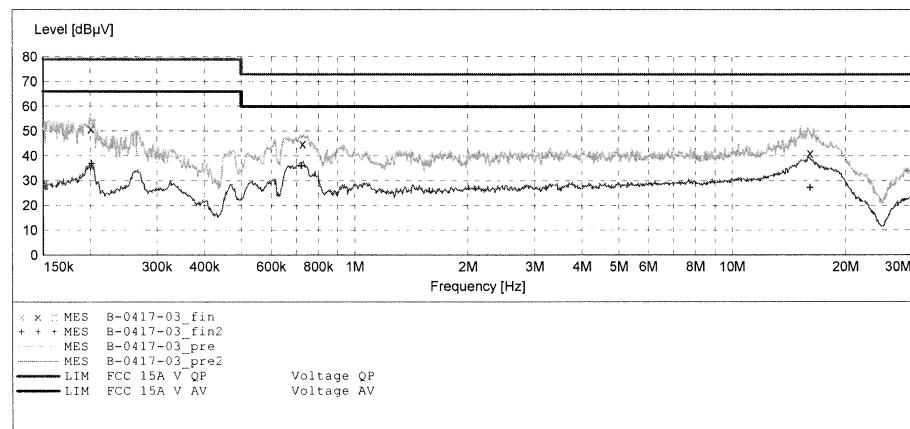
**ACCURATE TECHNOLOGY CO., LTD**

**CONDUCTED EMISSION STANDARD FCC PART 15 A**

EUT: Copyboard M/N:N-31W  
 Manufacturer: PLUS Corporation  
 Operating Condition: Printing  
 Test Site: 1#Shielding Room  
 Operator: LAN  
 Test Specification: L 120V/60Hz  
 Comment: Mains Port  
 Start of Test: 4/17/2014 /

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

Start Frequency	Stop Frequency	Step Width	Detector	Meas.	IF Time	Transducer Bandw.
150.0 kHz	30.0 MHz	4.5 kHz	QuasiPeak	1.0 s	9 kHz	NSLK8126 2008
						Average



**MEASUREMENT RESULT: "B-0417-03\_fin"**

4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.200748	51.00	10.5	79	28.0	QP	L1	GND
	0.725950	45.00	10.8	73	28.0	QP	L1	GND
	16.079278	41.20	11.4	73	31.8	QP	L1	GND

**MEASUREMENT RESULT: "B-0417-03\_fin2"**

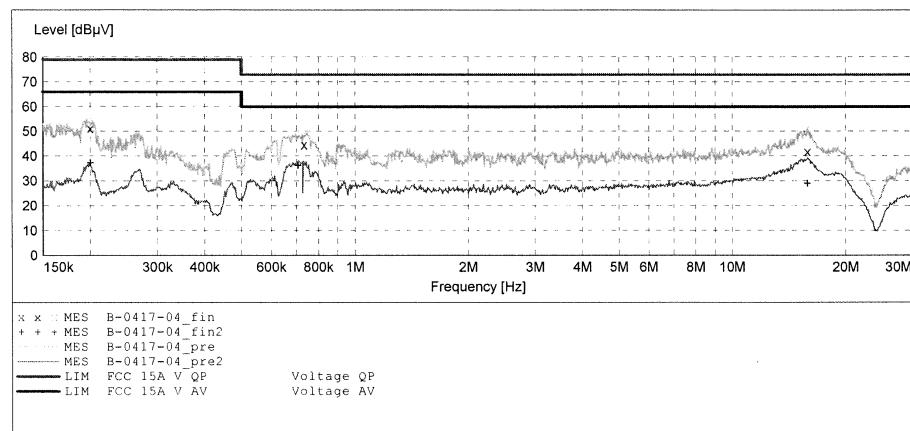
4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.201551	36.80	10.5	66	29.2	AV	L1	GND
	0.720177	35.90	10.8	60	24.1	AV	L1	GND
	16.079278	27.20	11.4	60	32.8	AV	L1	GND

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 31 von 53**  
*Page 31 of 53*
**ACCURATE TECHNOLOGY CO., LTD**
**CONDUCTED EMISSION STANDARD FCC PART 15 A**

EUT: Copyboard M/N:N-31W  
 Manufacturer: PLUS Corporation  
 Operating Condition: Printing  
 Test Site: 1#Shielding Room  
 Operator: LAN  
 Test Specification: N 120V/60Hz  
 Comment: Mains Port  
 Start of Test: 4/17/2014 /

**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 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average


**MEASUREMENT RESULT: "B-0417-04\_fin"**

4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dBµV	dB	dBµV	dB			
	0.199949	51.20	10.5	79	27.8	QP	N	GND
	0.731769	44.60	10.8	73	28.4	QP	N	GND
	15.824579	41.80	11.4	73	31.2	QP	N	GND

**MEASUREMENT RESULT: "B-0417-04\_fin2"**

4/17/2014	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dBµV	dB	dBµV	dB			
	0.199949	37.20	10.5	66	28.8	AV	N	GND
	0.705947	36.10	10.8	60	23.9	AV	N	GND
	15.824579	28.80	11.4	60	31.2	AV	N	GND

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*Seite 32 von 53  
Page 32 of 53**5.1.1 Radiated emissions****RESULT:****Pass**

Test standard	:	FCC Part 15.109 ICES-003 Issue 5 August 2012
Basic standard	:	ANSI C63.4: 2003
Frequency range	:	30 – 2000MHz *
Limits	:	FCC Part 15.109 (b) Table 4 & 6 of ICES-003 Issue 5 August 2012
Kind of test site	:	3m Semi-Anechoic Chamber

**Test Setup**

Date of testing	:	2014-04-17
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A.2, A.3, A.4
Earthing	:	Not Connected
Ambient temperature	:	23°C
Relative humidity	:	48%
Atmospheric pressure	:	101kPa

-- The EUT's highest frequency generated and used is 108MHz, hence the highest scan frequency is up to 2GHz only.

For details refer to following test plot.

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 33 von 53**  
*Page 33 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1791

Polarization: Horizontal

Standard: FCC Class A 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17

Temp. ( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

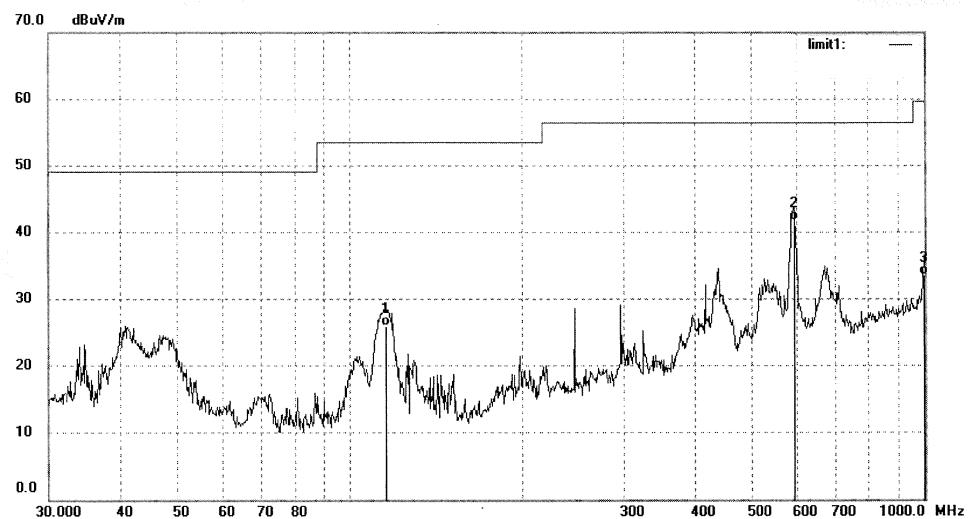
Mode: Communication

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note: LAN:10M



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	115.6320	39.12	-13.15	25.97	53.50	-27.53	QP			
2	592.4289	44.84	-3.04	41.80	56.40	-14.60	QP			
3	996.4926	30.69	2.78	33.47	59.50	-26.03	QP			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 34 von 53**  
*Page 34 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1792

Polarization: Vertical

Standard: FCC Class A 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17/

Temp.( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

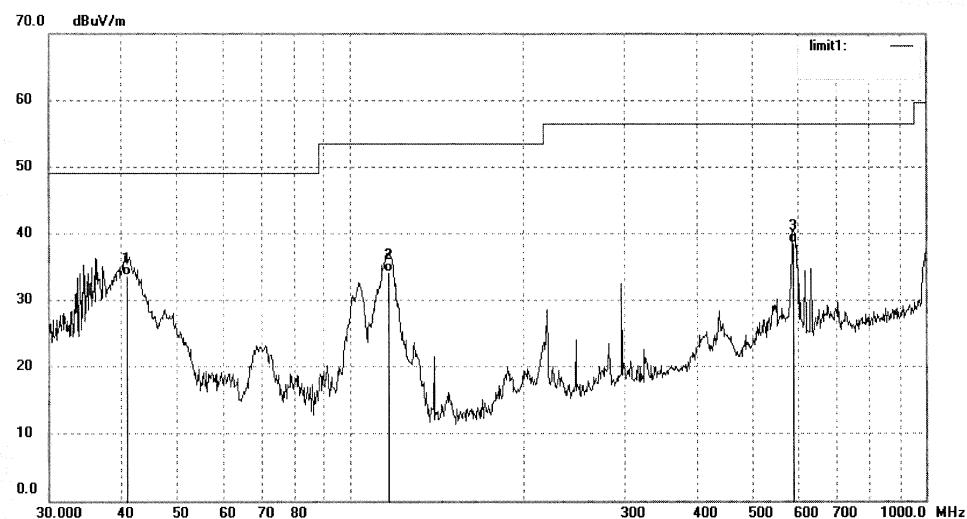
Mode: Communication

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note: LAN:10M



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	40.8699	45.44	-11.74	33.70	49.00	-15.30	QP			
2	116.4475	47.39	-13.16	34.23	53.50	-19.27	QP			
3	588.2804	41.64	-3.07	38.57	56.40	-17.83	QP			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 35 von 53**  
*Page 35 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1805

Polarization: Horizontal

Standard: FCC PK Class A

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17

Temp.( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

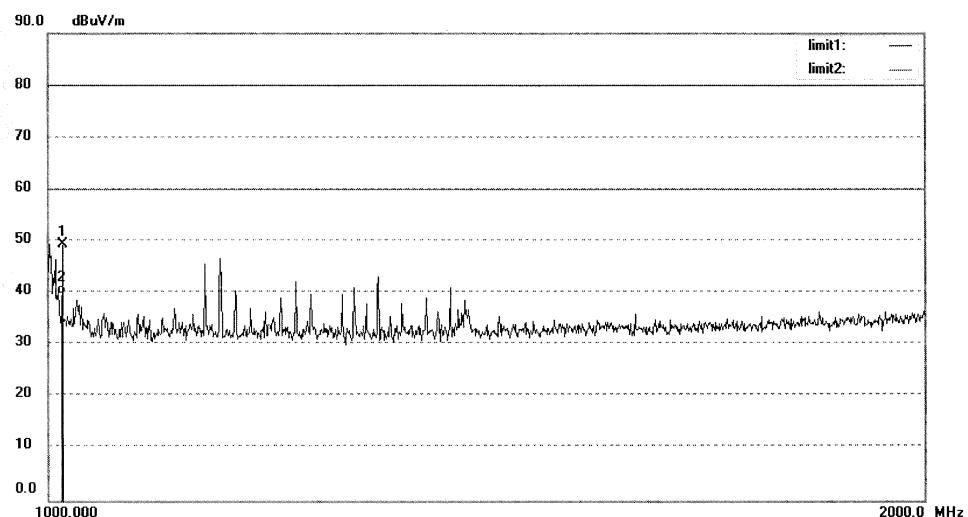
Mode: Communication

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note: LAN:10M



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1012.390	61.78	-12.48	49.30	80.00	-30.70	peak			
2	1012.390	52.28	-12.48	39.80	60.00	-20.20	AVG			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 36 von 53**  
*Page 36 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

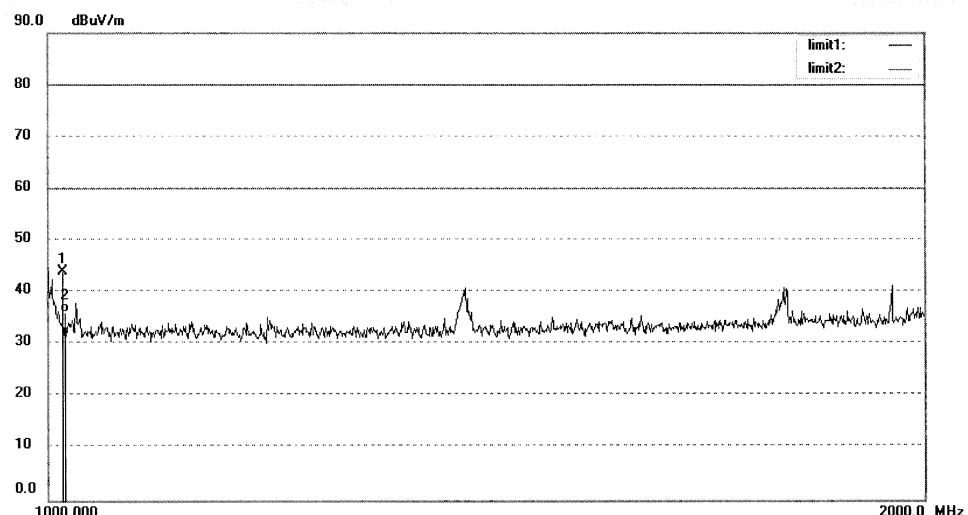
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: TUV #1806  
Standard: FCC PK Class A  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 23 C / 48 %  
EUT: Copyboard  
Mode: Communication  
Model: N-31W  
Manufacturer: PLUS Corporation

Polarization: Vertical  
Power Source: AC 120V/60Hz  
Date: 14/04/17/  
Time:  
Engineer Signature:  
Distance: 3m

Note: LAN:10M



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1012.347	56.56	-12.48	44.08	80.00	-35.92	peak			
2	1012.347	48.69	-12.48	36.21	60.00	-23.79	AVG			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 37 von 53**  
*Page 37 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1794

Polarization: Horizontal

Standard: FCC Class A 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17/

Temp. ( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

Mode: Communication

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note: LAN:100M



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	116.0391	42.61	-13.15	29.46	53.50	-24.04	QP			
2	586.2172	44.73	-3.09	41.64	56.40	-14.76	QP			
3	1000.0000	30.32	2.84	33.16	59.50	-26.34	QP			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 38 von 53**  
*Page 38 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1793

Polarization: Vertical

Standard: FCC Class A 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17/

Temp. ( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

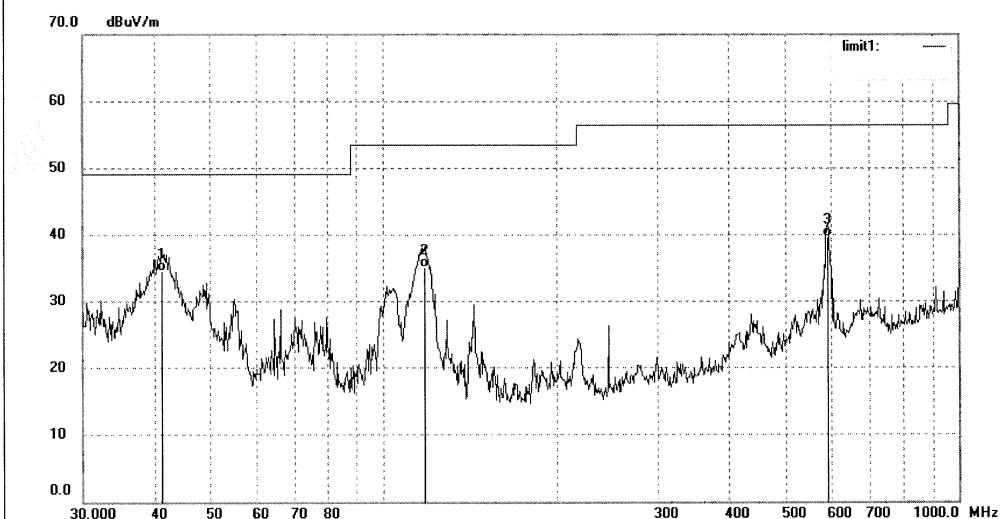
Mode: Communication

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note: LAN:100M



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	41.1580	46.31	-11.80	34.51	49.00	-14.49	QP			
2	117.6814	48.30	-13.14	35.16	53.50	-18.34	QP			
3	590.3510	42.70	-3.05	39.65	56.40	-16.75	QP			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 39 von 53**  
*Page 39 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1804

Polarization: Horizontal

Standard: FCC PK Class A

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17/

Temp. ( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

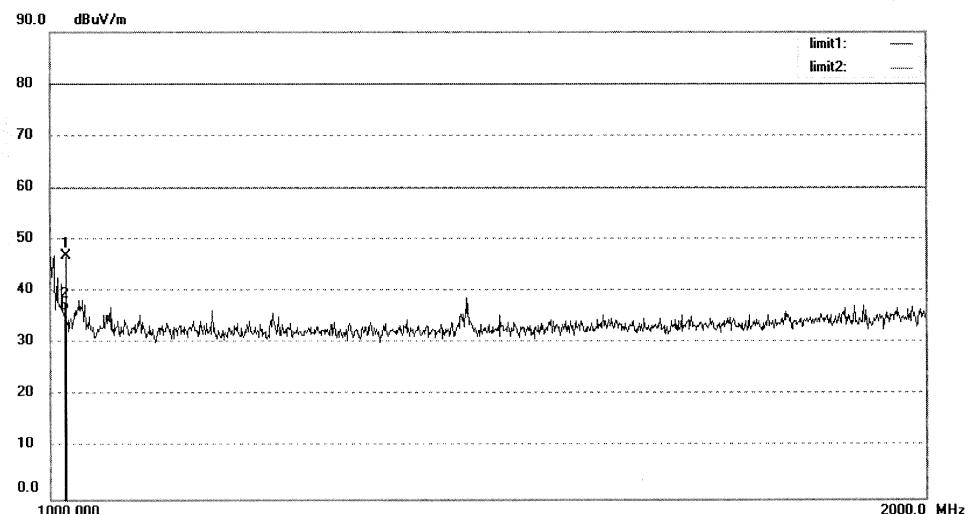
Mode: Communication

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note: LAN:100M



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1012.782	59.38	-12.47	46.91	80.00	-33.09	peak			
2	1012.782	48.81	-12.47	36.34	60.00	-23.66	AVG			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 40 von 53**  
*Page 40 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

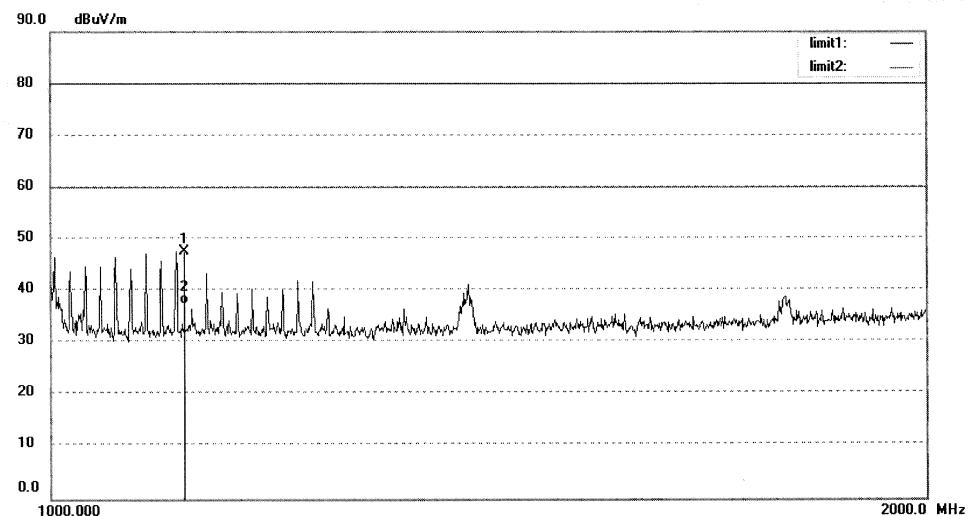
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1803  
Standard: FCC PK Class A  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 23 C / 48 %  
EUT: Copyboard  
Mode: Communication  
Model: N-31W  
Manufacturer: PLUS Corporation

Polarization: Vertical  
Power Source: AC 120V/60Hz  
Date: 14/04/17/  
Time:  
Engineer Signature:  
Distance: 3m

Note: LAN:100M



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1112.418	60.23	-12.58	47.65	80.00	-32.35	peak			
2	1112.418	49.98	-12.58	37.40	60.00	-22.60	AVG			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 41 von 53**  
*Page 41 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1784

Polarization: Horizontal

Standard: FCC Class A 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17/

Temp.( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

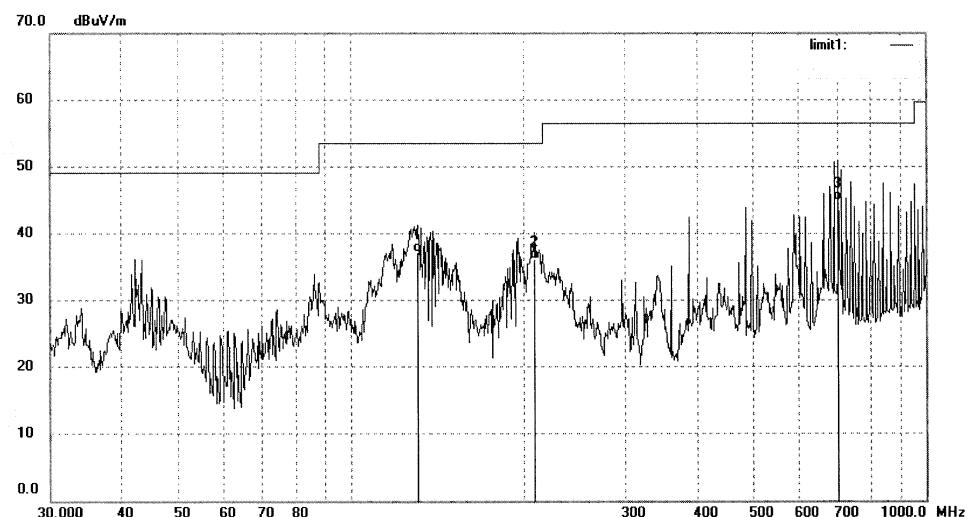
Mode: USB mode

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	130.3048	51.04	-13.88	37.16	53.50	-16.34	QP			
2	207.9261	48.36	-12.22	36.14	53.50	-17.36	QP			
3	703.7314	46.59	-1.68	44.91	56.40	-11.49	QP			

**Prüfbericht - Nr.:** **17041894 001**  
*Test Report No.*
**Seite 42 von 53**  
*Page 42 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1783

Polarization: Vertical

Standard: FCC Class A 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17/

Temp. ( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

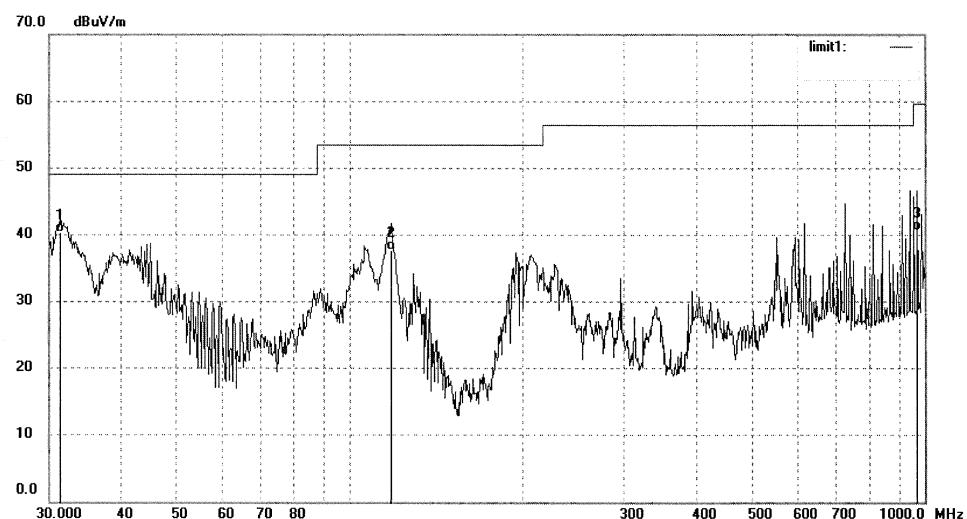
Mode: USB mode

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	31.2918	50.34	-10.05	40.29	49.00	-8.71	QP			
2	117.6814	50.93	-13.14	37.79	53.50	-15.71	QP			
3	972.2826	38.16	2.46	40.62	59.50	-18.88	QP			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 43 von 53**  
*Page 43 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1813

Polarization: Horizontal

Standard: FCC PK Class A

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17/

Temp.( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

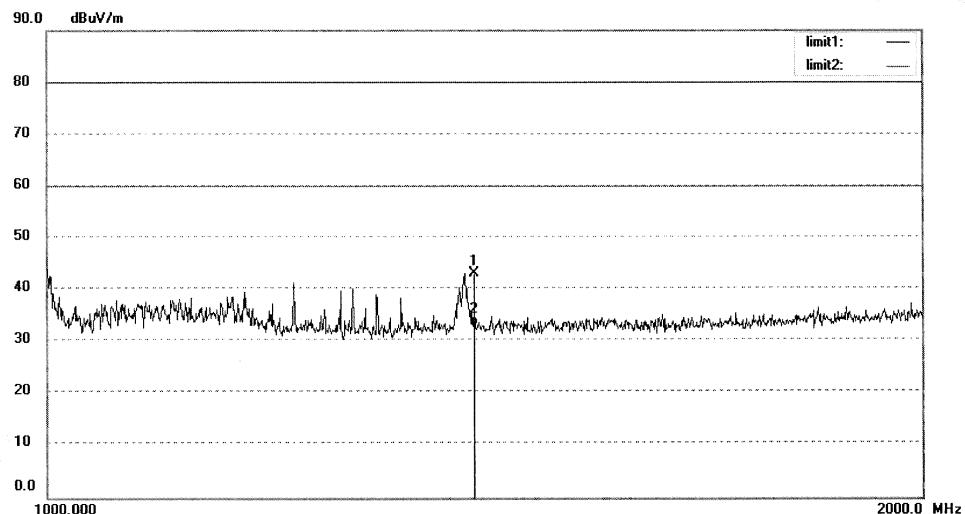
Mode: USB mode

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1403.102	54.89	-11.78	43.11	80.00	-36.89	peak			
2	1403.802	44.75	-11.78	32.97	60.00	-27.03	Avg			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 44 von 53**  
*Page 44 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1814

Polarization: Vertical

Standard: FCC PK Class A

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17

Temp.( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

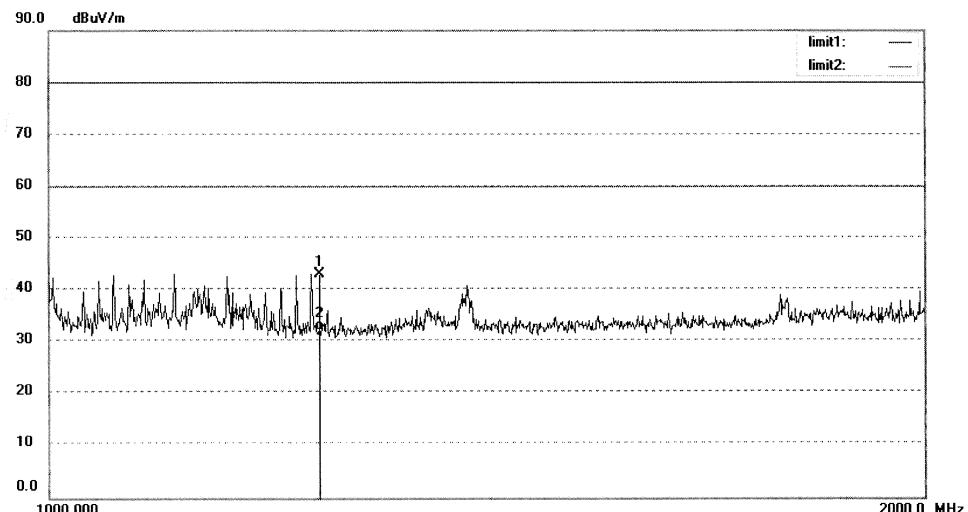
Mode: USB mode

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1238.802	55.42	-12.34	43.08	80.00	-36.92	peak			
2	1238.802	44.67	-12.34	32.33	60.00	-27.67	AVG			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 45 von 53**  
*Page 45 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1789

Polarization: Horizontal

Standard: FCC Class A 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17/

Temp.( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

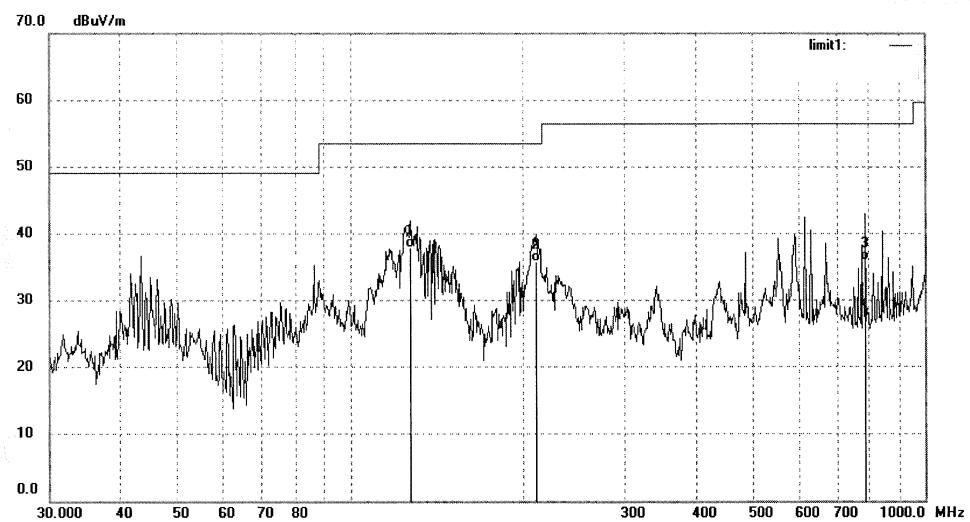
Mode: Printing

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	127.1389	51.69	-13.79	37.90	53.50	-15.60	QP			
2	210.1294	48.02	-12.17	35.85	53.50	-17.65	QP			
3	787.4749	36.13	-0.24	35.89	56.40	-20.51	QP			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 46 von 53**  
*Page 46 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1790

Polarization: Vertical

Standard: FCC Class A 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17/

Temp.( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

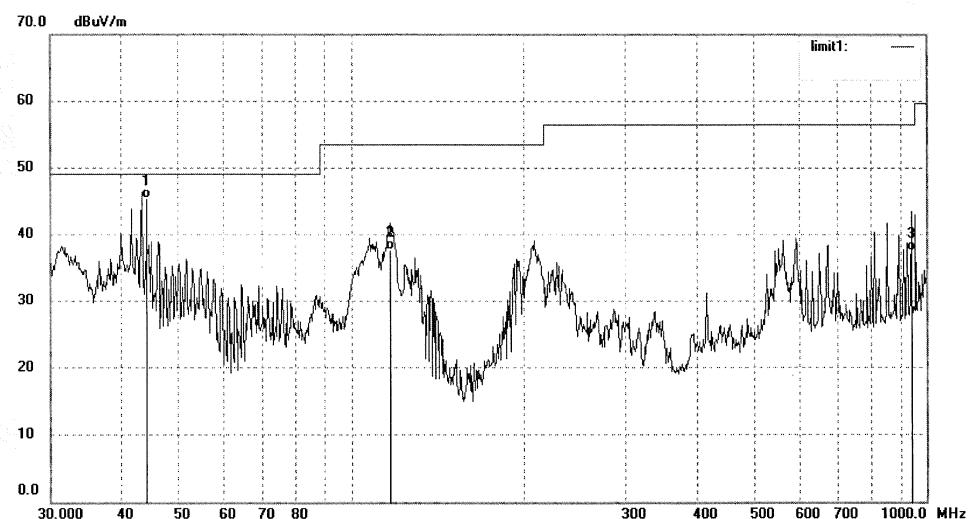
Mode: Printing

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	43.9853	57.78	-12.42	45.36	49.00	-3.64	QP			
2	116.4475	50.88	-13.16	37.72	53.50	-15.78	QP			
3	942.0180	35.53	1.97	37.50	56.40	-18.90	QP			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 47 von 53**  
*Page 47 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1808

Polarization: Horizontal

Standard: FCC PK Class A

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17/

Temp. ( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

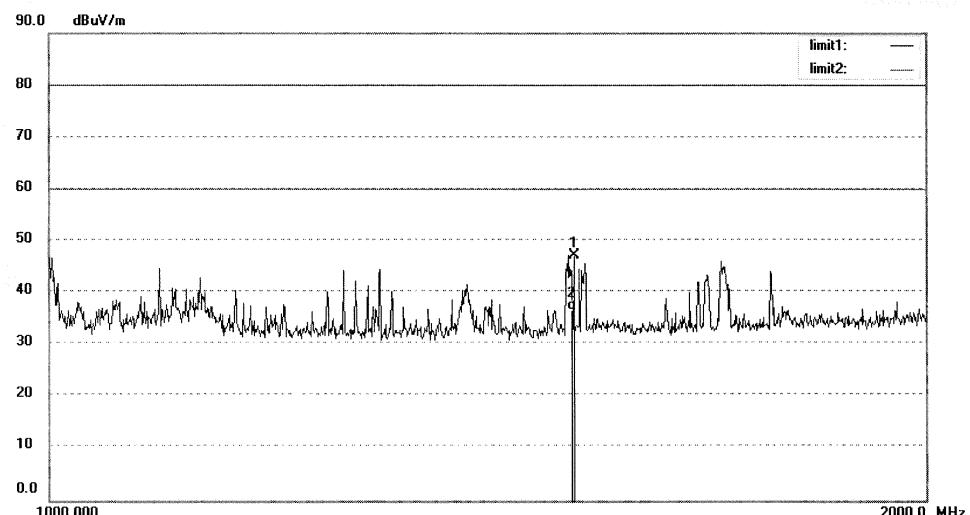
Mode: Printing

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1515.575	58.42	-11.34	47.08	80.00	-32.92	peak			
2	1515.575	47.97	-11.34	36.63	60.00	-23.37	Avg			

**Prüfbericht - Nr.: 17041894 001**  
*Test Report No.*
**Seite 48 von 53**  
*Page 48 of 53*

**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: TUV #1807

Polarization: Vertical

Standard: FCC PK Class A

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/04/17/

Temp.( C)/Hum.(%) 23 C / 48 %

Time:

EUT: Copyboard

Engineer Signature:

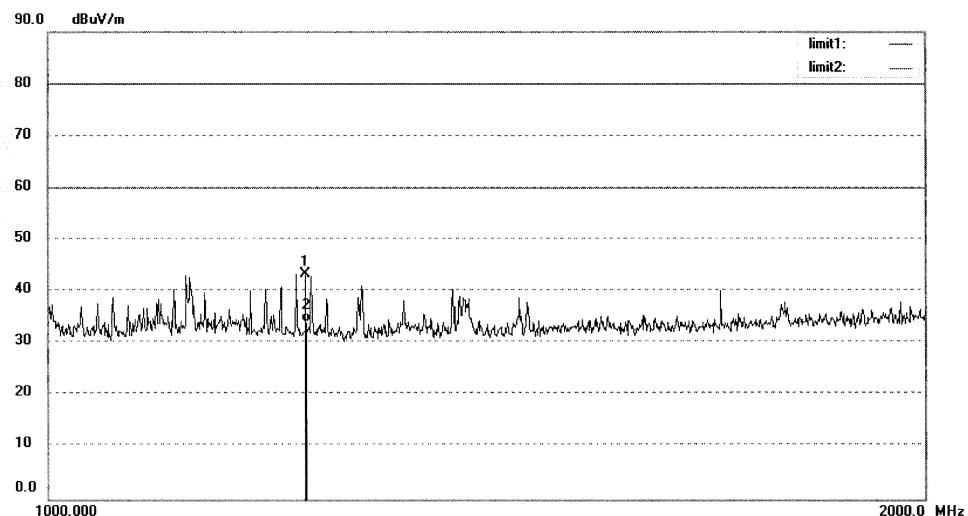
Mode: Printing

Distance: 3m

Model: N-31W

Manufacturer: PLUS Corporation

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1224.356	55.69	-12.40	43.29	80.00	-36.71	peak			
2	1224.356	46.57	-12.40	34.17	60.00	-25.83	Avg			

## 6. Safety Human exposure

### 6.1 Radio Frequency Exposure Compliance

#### 6.1.1 Electromagnetic Fields

**RESULT:** Pass

Test standard : RSS-102 Issue 4 March 2010  
FCC KDB Publication 447498 D01 v05r01

The maximum peak output power of the transmitter is 0.68mW (-1.67dBm) only, which is less than 20mW. Hence the EUT is exempted from routine evaluation limits (SAR Evaluation) according to clause 2.5.1 of RSS-102 Issue 4.

Since maximum peak output power of the transmitter is 0.68mW < 96mW, and the distance from EUT to human is >50mm, hence the EUT is excluded from SAR evaluation according to FCC KDB publication 447498 D01 General RF Exposure Guidance v05r01.

**Prüfbericht - Nr.:** 17041894 001  
*Test Report No.*

Seite 50 von 53  
*Page 50 of 53*

## 7. Photographs of the Test Set-Up

**Photograph 1: Set-up for Conducted Emissions**



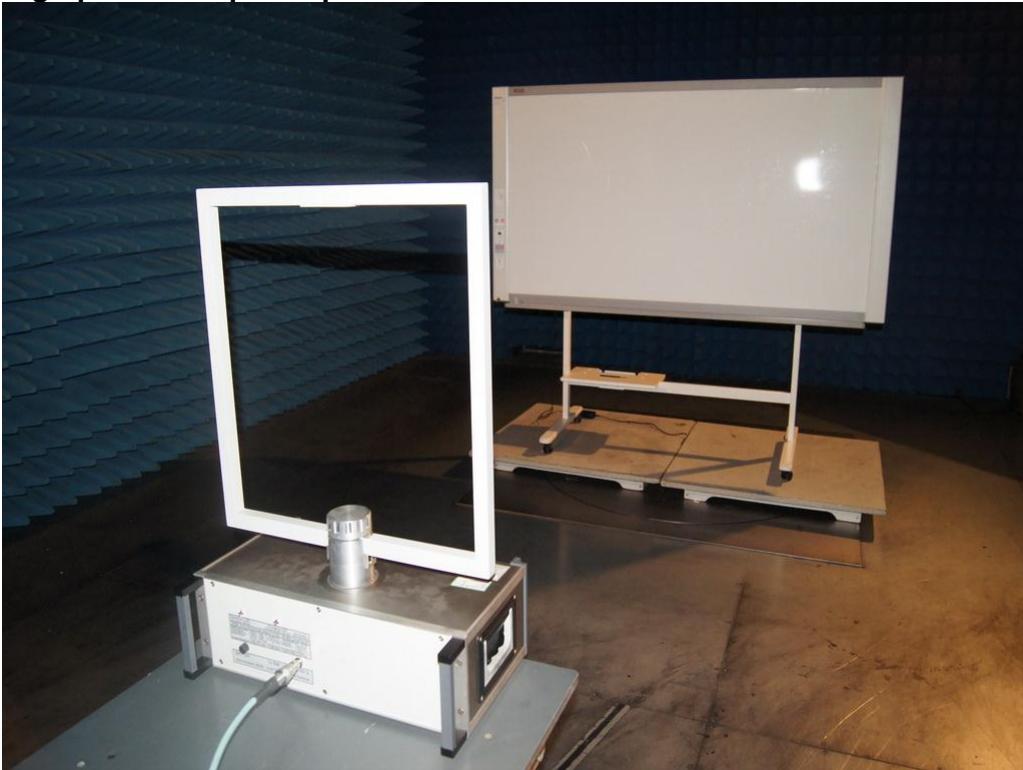
**Photograph 2: Set-up for Radiated Emissions**



**Prüfbericht - Nr.:** 17041894 001  
*Test Report No.*

Seite 51 von 53  
*Page 51 of 53*

**Photograph 3: Set-up for Spurious Emissions for below 30MHz**



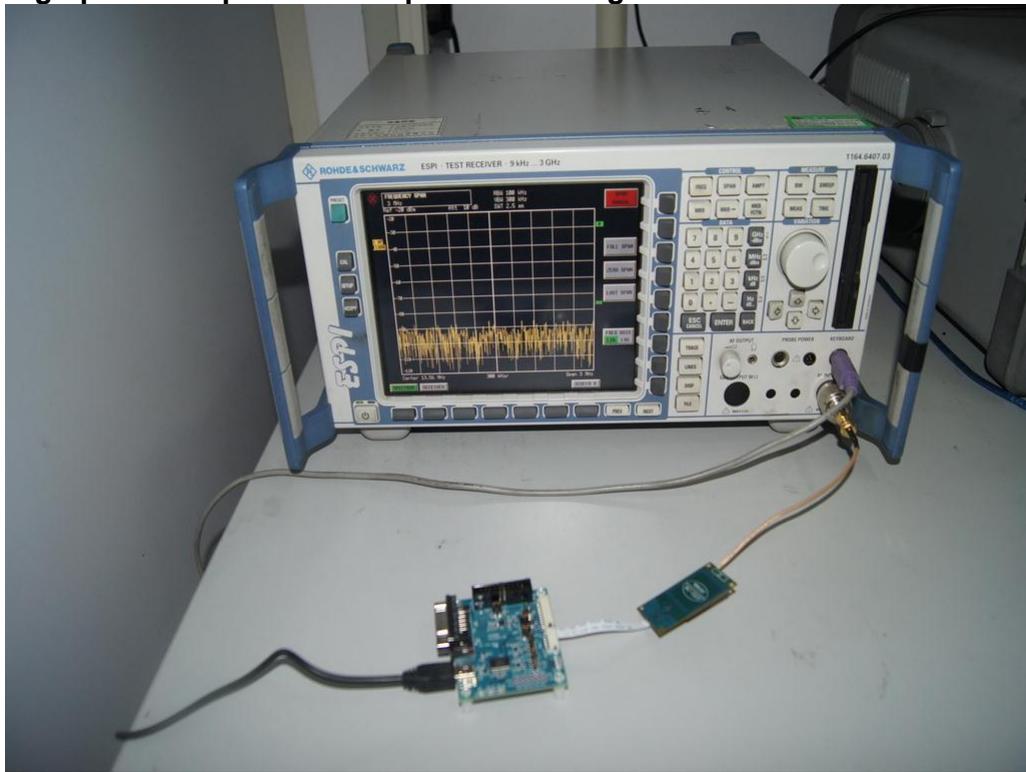
**Photograph 4: Set-up for Spurious Emissions for 30 - 1000MHz**



**Prüfbericht - Nr.:** 17041894 001  
*Test Report No.*

Seite 52 von 53  
*Page 52 of 53*

**Photograph 5: Setup for Radio Spectrum testing**



## 8. List of Tables

Table 1: List of Test and Measurement Equipment .....	5
Table 2: Measurement Uncertainty .....	6
Table 3: Model difference.....	7
Table 4: Technical Specification of EUT .....	7
Table 5: Test result of frequency tolerance of voltage variation.....	20
Table 6: Test result of frequency tolerance of voltage variation.....	20
Table 7: Test result of 20dB & 99% Bandwidth.....	21

## 9. List of Photographs

Photograph 1: Set-up for Conducted Emissions .....	50
Photograph 2: Set-up for Radiated Emissions .....	50
Photograph 3: Set-up for Spurious Emissions for below 30MHz .....	51
Photograph 4: Set-up for Spurious Emissions for 30 - 1000MHz .....	51
Photograph 5: Setup for Radio Spectrum testing.....	52