# **RFID 13.56 MHz Radio Test Report** FCC ID: XHM-K938C48 This report concerns (check one) : Original Grant Class II Change **Issued Date** : Jan. 19, 2012 **Project No.** : R1107006 Equipment : Bedside Terminal Hardware System Model Name : K938S(C48); K938(C48) : FLYTECH TECHNOLOGY CO., LTD. Applicant 1F, No. 168, Sing-Ai Rd., NeiHu District 114, Taipei, Taiwan **Tested by:** Neutron Engineering Inc. EMC Laboratory Date of Receipt: Sep. 01, 2011 Date of Test: Sep. 01, 2011 ~ Dec. 02, 2011 -a0 Testing Engineer: ush Kao) **Technical Manager:** (Jeff Yand Authorized Signatory (Andv Chiu) Neutron Engineering Inc. B1, No. 37, Lane 365, YangGuang St. NeiHu District 114, Taipei, Taiwan. TEL: +886-2-2657-3299 FAX: +886-2-2657-3331 0659



### Declaration

**Neutron** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C**., or National Institute of Standards and Technology (**NIST**) of **U.S.A**.

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#### Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Neutron Engineering Inc.\_\_\_\_\_

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# **1. CERTIFICATION**

Equipment: Bedside Terminal Hardware System Brand Name: FLYTECH Model Name: K938S(C48); K938(C48) Applicant: FLYTECH TECHNOLOGY CO., LTD. Data of Test: Sep. 01, 2011 ~ Dec. 02, 2011 Standards: FCC Part15, Subpart C: 2010 / ANCI C63.4: 2009

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-R1107006) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and TAF according to the ISO-17025 quality assessment standard and technical standard(s).

# 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15, Subpart C: 2010					
Standard Section	Test Item	Judgment	Remark		
15.207	Conducted Emission	PASS			
15.35 / 15.205 / 15.209 / 15.225	Radiated Emission	PASS			
15.225(e)	Frequency Stability	PASS			
15.203	Antenna Requirement	PASS			

NOTE:

- (1)" N/A" denotes test is not applicable in this Test Report
- (2) Portable device; SAR report is required.



# 2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

 C01: (VCCI RN: C-2918; T-1666; FCC RN: 95335; FCC DN: TW1010) No.132-1, Ln. 329, Sec. 2, Balian Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)
CB08: (VCCI RN: G-91; FCC RN: 614388; FCC DN: TW1054;

IC Assigned Code: 4428C-1)

1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

# 2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95**%.

The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
C01	ANSI	150 kHz ~ 30 MHz	1.94	

B. Radiated Measurement :

Test Site	Item	Measurement	Frequency Range	Uncertainty	NOTE		
			30 - 00MHz	3.35 dB			
		Horizontal	200 - 1000MHz	3.11 dB			
			Polarization	1 - 18GHz	3.97 dB		
CB08	Radiated	Radiated	18 - 40GHz	4.01 dB			
CDUO	mission at 3m		30 - 200MHz	3.22 dB			
			Vertical	Vertical	200 - 1000MHz	3.24 dB	
		Polarization	1 - 18GHz	4.05 dB			
					18 - 40GHz	4.04 dB	

Our calculated Measurement Instrumentation Uncertainty is shown in the tables above. These are our  $U_{lab}$  values in CISPR 16-4-2 terminology.

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called  $U_{CISPR}$ , as follows:

Conducted Disturbance (mains port) - 150 kHz - 30 MHz : 3.6 dB

Radiated Disturbance (electric field strength on an open area test site or alternative test site) – 30 MHz - 1000 MHz : 5.2 dB

It can be seen that our  $U_{\mbox{\tiny lab}}$  values are smaller than  $U_{\mbox{\tiny CISPR}}.$ 

# Neutron Engineering Inc.\_\_\_\_\_

# **3. GENERAL INFORMATION**

# 3.1 GENERAL DESCRIPTION OF EUT

Equipment	Bedside Terminal Hardware System
Brand Name	FLYTECH
Model Name	K938S(C48); K938(C48)
OEM Brand Name	N/A
Model Difference	Models' differences between each other only the changes of model name which do not affect the EMI performance. Model K938(C48) was used for final testing and collecting test data included in this report.
	The EUT is a Bedside Terminal Hardware System. Operation Frequency: 13.56 MHz
Product Description	Antenna Designation: LOOP Antenna Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.
Power Source	DC Voltage supplied from External Power Supply.
Power Rating	I/P: AC 100-240V 1.4A 50-60Hz / O/P: DC 19V 4.74A
Products Covered	Please refer to the User's Manual
Connecting I/O Port(s)	1 * CPU: 1 * Mother Board: C48 1 * Memory: TLA, 1GB 1 * HDD: Seagate, ST9160314AS 160GB 1 * Panel: AU Optronics, G185XW01 1 * Inverter: MTC, PWA-DA-2A12 1 * RFID Reader: SUNION, MD-150M 1 * RFID Reader: SUNION, ANT-001 1 * Antenna: SUNION, ANT-001 1 * Remote Control: JAOTECH, rimo 1 * Smart Card Reader 1 * Smart Card Reader 1 * Magnetic Stripe Card Reader 1 * Headset 1 * AC ADAPTER: AcBel, AD7043
EUT Modification(s)	N/A

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

# 3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

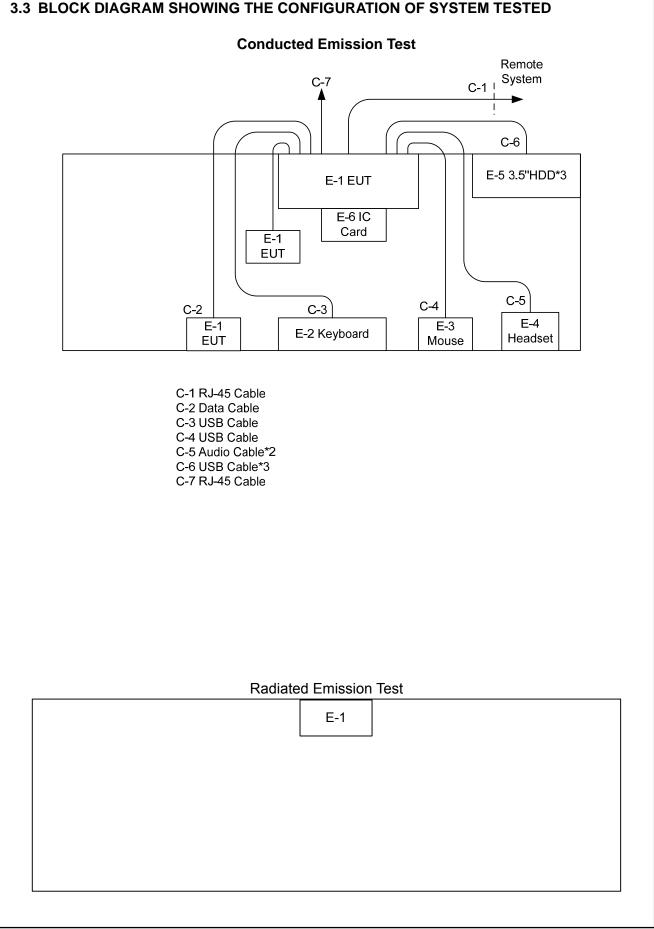
Pretest Test Mode	Description
Mode 1	Transmit: 13.56 MHz

For Conducted Test				
Final Test Mode Description				
Mode 1 Transmit: 13.56 MHz				

For Radiated Test			
Final Test Mode	Description		
Mode 1	Transmit: 13.56 MHz		



# 3.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED





## 3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	Bedside Terminal Hardware System	FLYTECH	K938(C48)	XHM-K938C48	N/A	EUT
E-2	USB K/B	Microsoft	1366	DOC	0065801864873	
E-3	USB Mouse	IBM	MO28UO	DOC	23-271883	
E-4	Headset	i-Acon	HOH-323-BK	N/A	N/A	
E-5	External Hard Drive	WD	WDBACW0010HBK-SESN	DOC	WCAV5J749731	
E-6	IC Caed	N/A	N/A	N/A	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	10.0M	
C-2	YES	NO	2.8M	
C-3	YES	NO	1.7M	
C-4	YES	NO	1.8M	
C-5	NO	NO	1.7M	
C-6	YES	NO	1.2M	
C-7	NO	NO	1.0M	

Note:

(1) The support equipment was authorized by Declaration of Conformity.

(2) For detachable type I/O cable should be specified the length in cm in <sup>[]</sup>Length <sup>[]</sup> column.

# 4. EMC EMISSION TEST

## 4.1 CONDUCTED EMISSION MEASUREMENT

# 4.1.1 POWER LINE CONDUCTED EMISSION (FREQUENCY RANGE 150 KHZ-30MHZ)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
- (3) The test result calculated as following: Measurement Value = Reading Level + Correct Factor Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use) Margin Level = Measurement Value – Limit Value

# 4.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TWO-LINE V-NETWORK	R&S	ENV216	101084	Oct. 05, 2012
2	Test Cable	TIMES	LMR-400	SR03_C_01& 02	Aug. 18, 2012
3	EMI Test Receiver	R&S	ESCI	100082	Mar. 15, 2012
4	50Ω BNC TYPE Terminator	N/A	N/A	01	Jun. 02, 2013
5	50Ω BNC TYPE Terminator	N/A	N/A	03	Jun. 02, 2013
6	LISN	EMCO	4825/2	00028234	Sep. 19, 2012

Remark: " N/A" denotes No Model Name , Serial No. or No Calibration specified.



# 4.1.3 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

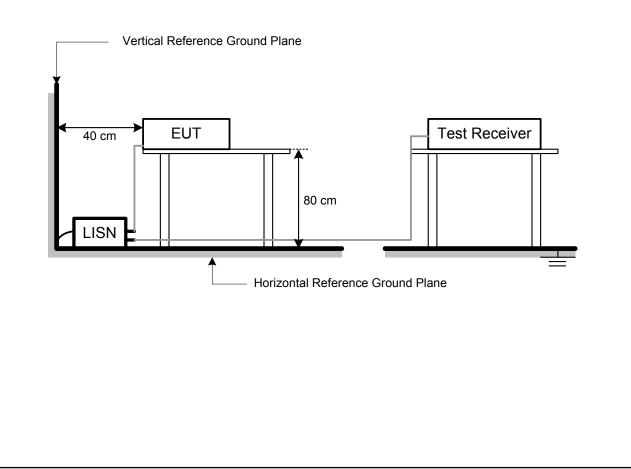
## NOTE:

- a. Reading in which marked as Peak, QP or AVG means measurements by using are Quasi-Peak or Average Mode with Detector BW=9 kHz; SPA setting in RBW=10 kHz, VBW =10 kHz, Swp. Time = 0.2 sec./ MHz.
- b. All readings are Peak Mode value unless otherwise stated QP or AVG in column of Note. If the Peak or QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only Peak or QP Mode was measured, but AVG Mode didn't perform.

# 4.1.4 DEVIATION FROM TEST STANDARD

No deviation

# 4.1.5 TEST SETUP





# 4.1.6 EUT OPERATING CONDITIONS

The EUT exercise program used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use.

The EUT has been programmed to continuously transmit during test.



# 4.1.7 TEST RESULTS

U.T :		Bedside System	Terminal	Hardwai	re I	Model N	lame :	K938	(C48)	
emper	ature :	24°C			F	Relative	Humidit	y: 48%		
est Vo	tage :	AC 120\	AC 120V/60Hz							
est Mo	de :	Transmi	t: 13.56 N	/IHz						
				PI	hase: I	_ine				
80.0	) dBuV								Limit: —	
									AVG:	
									5	
									×	
40									X X	
10	Mathymy	and they are	V	Row Amo	Marthan	North	and proven the	midutanyte	hormanany	
0.0 0.	150		.5		(MHz)		5		30.000	
No. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over				
	MHz	dBu∨	dB	dBuV	dBu∨	dB	Detector	Comment		
1	0.7250	21.88	9.22	31.10	56.00	-24.90	peak			
2	0.9140	23.94	8.93	32.87	56.00	-23.13	peak			
3	1.2830	25.73	8.80	34.53	56.00	-21.47	peak			
4	2.0660	26.90	8.85	35.75	56.00	-20.25	peak			
5 *	13.4500	41.21	9.18	50.39	60.00	-9.61	peak			
6	13.4500	27.40	9.18	36.58	50.00	-13.42	AVG			
7	24.1500	33.07	9.33	42.40	60.00	-17.60	peak			



.U.T :		Bedside System	e Termina	al Hardware	;	Model N	Name :	K	938(C48)	
empera	ature :	24°C	24°C			Relative Humidity :			48%	
Fest Volt	tage :	AC 120	V/60Hz							
Fest Mo	de :	Transmi	it: 13.56	MHz						
80.0	dBuV			Phas	se: N	eutral				
Γ									Limit: — AVG: —	
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L		Reading Level	0.5 Correct Factor	Measure-	(MHz)	Over	тицина 1		30.	  0000
0.1		Reading	Correct	Measure- ment		Over dB	Detector	Comme		 ↓↓
0.1	. Freq. MHz 0.2536	Reading Level dBuV 23.53	Correct Factor dB 9.82	Measure- ment dBuV 33.35 6	Limit dBu∨ 61.64	dB -28.29		Comme		↔ ↓ ····
0.1 No. Mk 1 2	. Freq. MHz 0.2536 0.3866	Reading Level dBuV 23.53 22.95	Correct Factor dB 9.82 9.62	Measure- ment dBuV 33.35 32.57	Limit dBu√ 61.64 58.14	dB -28.29 -25.57	Detector peak peak	Comme		  0000
0.1 No. Mk 1 2 3	. Freq. MHz 0.2536 0.3866 0.4944	Reading Level dBuV 23.53 22.95 23.50	Correct Factor dB 9.82 9.62 9.45	Measure- ment dBuV 33.35 6 32.57 8 32.95 8	Limit dBu√ 61.64 58.14 56.09	dB -28.29 -25.57 -23.14	Detector peak peak peak	Comme		  0000
0.1 No. Mk 1 2 3 4	. Freq. MHz 0.2536 0.3866 0.4944 0.8330	Reading Level dBuV 23.53 22.95 23.50 23.50	Correct Factor dB 9.82 9.62 9.45 8.95	Measure- ment dBuV 33.35 32.57 32.95 36.35	Limit dBu√ 61.64 58.14 56.09 56.00	dB -28.29 -25.57 -23.14 -19.65	Detector peak peak peak peak	Comme		
0.1 No. Mk 1 2 3	. Freq. MHz 0.2536 0.3866 0.4944	Reading Level dBuV 23.53 22.95 23.50	Correct Factor dB 9.82 9.62 9.45	Measure- ment dBuV 33.35 6 32.57 8 32.95 8 36.35 8 36.27 8	Limit dBu√ 61.64 58.14 56.09	dB -28.29 -25.57 -23.14	Detector peak peak peak	Comme		  0000

# 4.2 RADIATED EMISSION MEASUREMENT

# 4.2.1 RADIATED EMISSION LIMITS (Frequency Range 30MHz-1000MHz)

		FC	CC Part 15.209			
Frequency	Field Streng Limitation		Field Strength Limitation at 3m Measurement Dist			
(MHz)	(uV/m) Dist		(uV/m)	(dBuV/m)		
0.009 - 0.490	2400 / F(KHz)	300m	10000 * 2400/F(KHz)	20log 2400/F(KHz) + 80		
0.490 - 1.705	24000 / F(KHz)	30m	100 * 24000/F(KHz)	20log 24000/F(KHz) + 40		
1.705 – 30.00	30	30m	100* 30	20log 30 + 40		
30.0 - 88.0	100	3m	100	20log 100		
88.0 - 216.0	150	3m	150	20log 150		
216.0 - 960.0	200	3m	200	20log 200		
Above 960.0	500	3m	500	20log 500		
		FCC Pa	art 15.225(a)/(b)/(c)			
Frequency	Field Streng Limitation		Field Strength Limitation at 3m Measurement Dist			
(MHz)	(uV/m)	Dist	(uV/m)	(dBuV/m)		
13.553 – 13.567	15,848	30 m	15,848*100	124		
13.567 – 13.710	334	30 m	334*100	90.5		
13.110 – 13.410 13.710 – 14.010	106	30 m	106*100	80.5		

Notes:

- (1) The tighter limit shall apply at the boundary between two frequency range.
- (2) Limitation expressed in dBuV/m is calculated by 20log Emission Level (uV/m).
- (3) If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of  $L_{d1} = L_{d2} * (d_2/d_1)^2$ . Example:

F.S Limit at 30m distance is 30uV/m, then F.S Limitation at 3m distance is adjusted as  $L_{d1} = L_1 = 30uV/m * (10)^2 = 100 * 30 uV/m$ 

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 06, 2012
2	Microflex Cable	N/A	N/A	1m	May. 18, 2012
3	Test Cable	N/A	LMR-400	966_12m	Jun. 16, 2012
4	Test Cable	N/A	LMR-400	966_3m	Jun. 16, 2012
5	Pre-Amplifier	EMC	EMC-330	980001	Jun. 03, 2012
6	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jun. 20, 2012
7	Loop Ant.	EMCO	6502	00042960	Jan. 11,2013

# 4.2.2 MEASUREMENT INSTRUMENTS LIST

Remark: " N/A" denotes No Model Name / Serial No. and No Calibration specified.

## 4.2.3 TEST PROCEDURE

- a. The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m or 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting radiated emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

## NOTE: (30-1000MHz)

Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode with Detector BW=120 kHz; SPA setting in RBW=120 kHz, VBW =120 kHz, Swp. Time = 0.3 sec./ MHz.

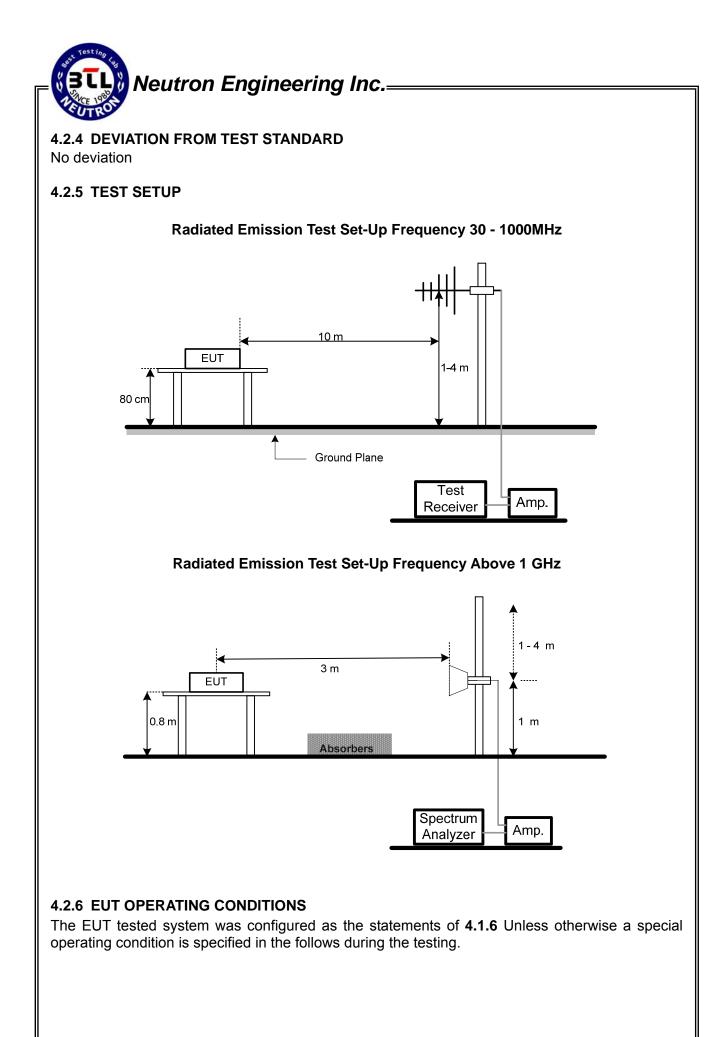
All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

## NOTE: (Above 1000MHz)

Reading in which marked as Peak means measurements by using are Peak Mode with instrument setting in RBW= 1 MHz, VBW= 1 MHz, Swp. Time = Auto.

Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW= 1 MHz, VBW= 10 Hz, Swp. Time = Auto.

All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform.



# 4.2.7 TEST RESULTS- FCC PART 15.209

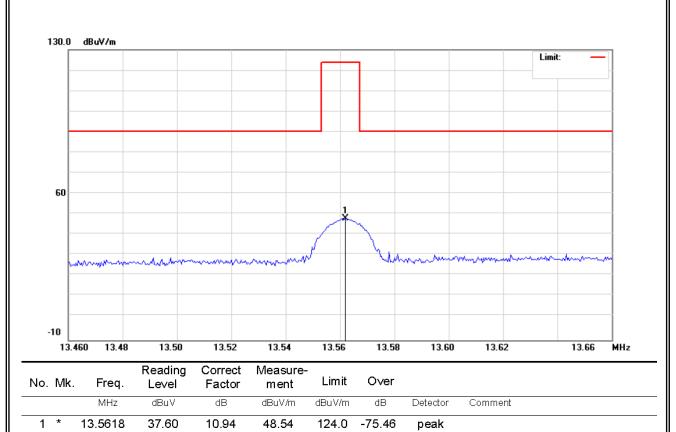
E.U.	Т:			Bedside System		al Hardwai	re M	lodel Na	ame :	K938(C	48)		
Tem	per	ratur	e :	26 ° C			R	elative	Humidity	: 60%			
Test	Vo	ltage	э:	AC 120	)V/60Hz								
Test	Мо	ode :		Transm	nit: 13.56	MHz							
	00.0					Polaria	zation:	Vertica	al				
	90.0		uV/m								Limit:	_	]
					10	3							
	40				XX	*4 *			5 X			X	-
-	10 30	).000	127.00	224.00	321.00	418.00	515.00	612.00	0 709.00	806.00		1000.00	MHz
No.	Mŀ	¢.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over					
			MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment			
1	*	313.	.7250	56.08	-12.25	43.83	46.00	-2.17	peak				
2		325.	.8500	54.94	-11.95	42.99	46.00	-3.01	peak				
3			.2000	53.94	-10.60	43.34	46.00	-2.66	peak				
4			.3250	49.32	-10.28	39.04	46.00	-6.96	peak				
		721.	.1250	41.51	-4.09	37.42	46.00	-8.58	peak				
5			.0750	44.08	-1.89	42.19	46.00	-3.81	peak				



E.U.	Т:		J.T : Bedside Terminal Hardware System						ame :	K938(C	K938(C48)		
Tem	per	ature	:	26°C			F	Relative	Humidity	: 60%			
Test	Vo	Itage	:	AC 120	0V/60Hz	2							
Test	Мс	de :		Transn	nit: 13.5	6 MHz							
	90.0	dBuV	//m			Pola	rization:	Horizor	ntal				
	50.0		/								Limit:	-	]
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	-10												
		.000	127.00	224.00				612.0	0 709.00	806.00		1000.00	MHz
				224.00 Reading Level		ct Measu	ure-	0 612.0 Over	0 709.00	806.00		1000.00	MHz
	зо. Mk	F	Freq. MHz	Reading Level	g Correc Facto	or Measu or men dBuV/r	u <b>re-</b> . <b>t Limit</b> m dBuV/m	<b>O∨er</b> dB	0 709.00 Detector	806.00 Comment		1000.00	MHz
No. 1	30. Mk	. F M 313.7	<b>Freq</b> . MHz 7250	Reading Level dBuV 49.19	g Correc Facto dB -12.25	or Measu or men dBuV/i 5 36.94	ure- It Limit m dBuV/m 4 46.00	Over dB -9.06	Detector <b>peak</b>			1000.00	MHz
No.	зо. Mk	F № 313.7 379.2	req. MHz 7250 2000	Reading Level dBuV 49.19 45.49	g Correc Facto dB -12.25 -10.60	or Measu or men dBuV/i 5 36.94 0 34.89	ure- t Limit dBuV/m 4 46.00 9 46.00	Over dB -9.06 -11.11	Detector peak peak			1000.00	MHz
No.	зо. Mk	F ™ 313.7 379.2 468.9	Freq. MHz 7250 2000 9248	Reading Level dBuV 49.19 45.49 46.88	g Correc Facto dB -12.25 -10.60 -8.46	Measure       or     men       dBuV/i     36.94       3     34.85       3     38.42	ure- tt Limit dBuV/m 4 46.00 9 46.00 2 46.00	Over dB -9.06 -11.11 -7.58	Detector peak peak peak			1000.00	MHz
No.	зо. Mk	F № 313.7 379.2 468.9 481.0	Freq. MHz 7250 2000 9248 0498	Reading Level dBuV 49.19 45.49 46.88	Correc Facto dB -12.25 -10.60 -8.46 -8.27	Measure       or     men       dBuV/r       5     36.94       0     34.83       5     38.42       7     38.55	Limit dBuV/m 4 46.00 9 46.00 2 46.00 8 46.00	Over dB -9.06 -11.11 -7.58 -7.42	Detector peak peak peak peak			1000.00	MHz
No.	зо. Mk	F ™ 313.7 379.2 468.9	Freq. MHz 7250 2000 9248 0498	Reading Level dBuV 49.19 45.49 46.88	g Correc Facto dB -12.25 -10.60 -8.46	Measure       or     men       dBuV/r     36.94       0     34.88       3     38.42       7     38.58	Limit dBuV/m 4 46.00 9 46.00 2 46.00 8 46.00	Over dB -9.06 -11.11 -7.58 -7.42	Detector peak peak peak			1000.00	

# 4.2.8 TEST RESULTS- FCC PART 15.225

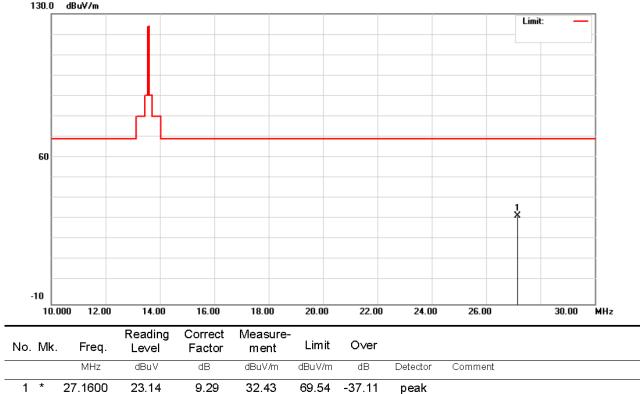
	Bedside Terminal Hardware System	Model Name :	K938(C48)
Temperature :	26°C	Relative Humidity :	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	Transmit: 13.56 MHz		





	Bedside Terminal Hardware System	Model Name :	K938(C48)
Temperature :	26°C	Relative Humidity :	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	Transmit: 13.56 MHz		

130.0 dBu∀/m





# 4.3 FREQUENCY STABILITY MEASUREMENT

# 4.3.1 FREQUENCY STABILITY LIMITS

### FCC Part 15.225(e)

the frequency tolerance of the carrier signal shall be maintained within +/-0.01% of the operating frequency over a temperature variation of -20 degrees to + 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

## 4.3.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 06, 2012	

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

### 4.3.3 TEST PROCEDURE

a. The equipment under test was connected to an external AC power supply and the RF output was connected to a frequency counter via feed through attenuators. The EUT was placed inside the temperature chamber.

After the temperature stabilized for approximately 20 minutes, the frequency of the output signal was recorded from the counter.

- b. At room temperature (25±5°C), an external variable AC power supply was connected to the EUT. The frequency of the transmitter was measured for 115%, 100% and 85% of the nominal operating input voltage.
- c. For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.3.4 DEVIATION FROM TEST STANDARD

No deviation

## 4.3.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.6** Unless otherwise a special operating condition is specified in the follows during the testing.

# 4.3.6 TEST RESULTS

	Bedside Terminal Hardware System	Model Name :	K938(C48)
Temperature :	26°C	Relative Humidity :	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	Transmit: 13.56 MHz		

		Frequ	ency Stabil	ity Versus Envi	ronmental Ter	nperature	
	Temper (℃		Voltage (Vac)	Frequency (MHz)	Freq Error (KHz)	Limit (KHz)	Results
	20	)	120V	13.56200			
0 min	50	)	120V	13.56220	0.200	+/- 1.356	PASS
	-20	)	120V	13.56240	0.400	+/- 1.356	PASS
2 min	50	)	120V	13.56200	0.000	+/- 1.356	PASS
	-20	)	120V	13.56235	0.350	+/- 1.356	PASS
5 min	50	)	120V	13.56210	0.100	+/- 1.356	PASS
	-20	)	120V	13.56243	0.430	+/- 1.356	PASS
10 min	50	)	120V	13.56198	-0.020	+/- 1.356	PASS
	-20	)	120V	13.56252	0.520	+/- 1.356	PASS
	•	I.	Frequenc	y Stability Vers	us Input Voltag	ge	
	erature C)	V	oltage (Vac)	Frequency (MHz)	Freq Error (KHz)	Limit (KHz)	Results
20		V-nom	n 120	13.56200			

13.56196

13.56204

-0.04

0.04

+/- 1.356

+/- 1.356

20

20

V-min

V-max

102

138

PASS

PASS