Produkte Products



Prüfbericht-Nr.: Test Report No.:	50161317 001		Auftrags-Nr.: Order No.:	144189242	Seite 1 von 21 Page 1 of 21
Kunden-Referenz-Nr.: Client Reference No.:	N/A		Auftragsdatum: Order date:	28.06.2018	
Auftraggeber: Client:	INNOVATIVE -	TECHNOLOG		CS LLC	
Prüfgegenstand: Test item:	Retro Bluetoo	th Radio			
Bezeichnung / Typ-Nr.: Identification / Type No.:	VRS-2800				
Auftrags-Inhalt: Order content:	FCC Certificat	ion and IC C	ertification		
<b>Prüfgrundlage:</b> Test specification:	FCC Part 15 S RSS-247 Issue ANSI C63.10-2	e 2			
Wareneingangsdatum: Date of receipt.	15.06.2018		and the second s		<b>P</b> 13
<b>Prüfmuster-Nr.:</b> Test sample No.:	A000759716-0	001		Ø	
Prüfzeitraum: Testing period:	19.07.2018 - 0	7.08.2018	0		
Ort der Prüfung: Place of testing:	TÜV Rheinlan Kong Ltd.	nd Hong	~		
Prüflaboratorium: Testing laboratory:	TÜV Rheinlan Kong Ltd.	nd Hong		00	
Prüfergebnis*: Test result*:	Pass		The new York	and a second	The Area Dentation
geprüft von / tested by:	Benny	in	kontrolliert vor	I reviewed by:	).
Benny Lau 03.09.2018 Senior Pro	ı ject Manager		03.09.2018	Sharon Li Senior Unit Manager	
Datum Name / Stell Date Name / Posit	ung Unte	erschrift ature	Datum Date	Name / Stellung Name / Position	Unterschrift Signature
<b>.</b>	C ID: 2AFHW-\ : 9577A-VRS28				
Zustand des Prüfgegen Condition of the test item		lieferung:		tändig und unbesch	ädigt
* Legende: 1 = sehr gut P(ass) = entspricht o.g	· ·		nicht o.g. Prüfgrundlag		5 = mangelhaft N/T = nicht getestet
Legend: 1 = very good P(ass) = passed a.m.	2 = good test specification(s)	3 = satisfactory F(ail) = failed a.m	. test specification(s)	4 = sufficient N/A = not applicable	5 = poor N/T = not tested
Dieser Prüfbericht bezie auszugsweise verviel					
This test report only re				of the test center this entitle to carry any tes	

TÜV Rheinland Hong Kong Ltd. ·3-4, 11/F., Fou Wah Industrial Building, 10-16 Pun Shan Street, Tsuen Wan, N.T., Hong Kong· Tel.: +852 2192 1000 · Fax: +852 2192 1001 · Email service-gc@tuv.com · Web: www.tuv.com



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## **Product information**

### **Manufacturers declarations**

	Transmitter
Operating frequency range	2402 - 2480 MHz
Type of modulation	GFSK; Pi/4 DQPSK; 8 DPSK
Number of channels	79
Channel separation	1 MHz
Type of antenna	PCB Antenna
Antenna gain (dBi)	0 dBi
Power level	fix
Type of equipment	stand alone radio device
Connection to public utility power line	Yes
Nominal voltage	120 VAC
Independent Operation Modes	Transmitting

## Product function and intended use

The equipment under test (EUT) is a AM/ FM radio with Bluetooth connectivity . It is powered by 120 VAC.

FCC ID: 2AFHW-VRS2800/	/ IC: 9577A-VRS2800
------------------------	---------------------

Models	Product description	
VRS-2800	Retro Bluetooth Radio	

#### Submitted documents

Circuit Diagram Block Diagram Technical Description User manual Label

### Independent Operation Modes

The basic operation modes are:

- Transmitting mode.
- Normal operation mode

For further information refer to User Manual

## **Related Submittal(s) Grants**

This is a single application for certification of the Bluetooth transmitter. The FM radio function is authorized under SDOC procedure (refer to test report 50161318 001)



## Remark

The test results in this test report are only relevant to the tested sample and does not involve any assessment in the production.



## **Test Set-up and Operation Mode**

## 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.

## Test Operation and Test Software

Test operation should refer to test methodology.

- During test, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power was selected according to the instruction given by the manufacturer. The setting of the RF output power expected by the customer shall be fixed on the firmware of the final end product.

## **Special Accessories and Auxiliary Equipment**

The product has been tested together with the following additional accessories:

- NIL

### **Countermeasures to achieve EMC Compliance**

- NIL



## **Test Methodology**

## **Radiated Emission**

The radiated emission measurements of the transmitter part were performed according to the procedures in ANSI C63.10-2013.

For measurement below 1GHz - the equipment under test (EUT) was placed at the middle of the 80 cm height turntable. For measurement above 1GHz - the EUT was placed at the middle of the 1.5 m height turntable and RF absorbing material was placed on ground plane between turntable and measuring antenna. During the testing, the EUT was operated standalone and arranged for maximum emissions. The EUT was tested in three orthogonal planes.

The investigation is performed with the EUT rotated  $360^{\circ}$ , the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained.

All radiated tests were performed at an antenna to EUT with 3 meters distance, unless stated otherwise in particular parts of this test report.

## Field Strength Calculation

The field strength at 3 m was established by adding the meter reading of the spectrum analyzer to the factors associated with antenna correction factor, cable loss, preamplifiers and filter attenuation.

The equation is expressed as follow:

FS = R + AF + CF + FA - PA

Where FS = Field Strength in dBuV/m at 3 meters.

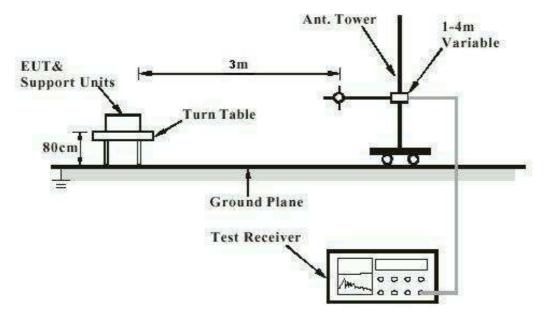
- R = Reading of Spectrum Analyzer in dBuV.
- AF = Antenna Factor in dB.
- CF = Cable Attenuation Factor in dB.
- FA = Filter Attenuation Factor in dB.
- PA = Preamplifier Factor in dB.

FA and PA are only be used for the measuring frequency above 1 GHz.



## **Test Setup Diagram**

#### Diagram of Measurement Configuration for Radiation Test



Note: Measurements above 1 GHz are done with a table height of 1.5m. In addition, there is RF absorbing material on the floor of the test site for above 1GHz measurement.

Diagram of Measurement Equipment Configuration for Mains Conduction Measurement (if applicable)

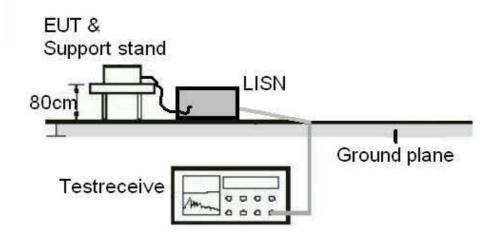
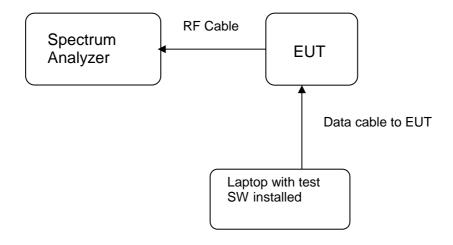


Diagram of Equipment Configuration for Antenna-port Conducted Measurement (if applicable)







## **Test Facility**

## **Test Laboratory Information**

TÜV Rheinland Hong Kong Ltd. Address: 3-4, 11/F., Fou Wah Industrial Building, 10-16 Pun Shan Street, Tsuen Wan, N.T., Hong Kong-Tel.: +852 2192 1000 Fax: +852 2192 1001 Email <u>service-gc@tuv.com</u> Web: <u>www.tuv.com</u>

The test facility is recognized or accredited by the following organizations:

F	CC	)

Туре	: Accredited Test Firm	
Designation Number	: HK0013	
Test Firm Registration Number	: 371735	
Scope	: Intentional Radiators	

#### Industry Canada

The 10m Semi-anechoic chamber used by TÜV Rheinland Hong Kong Ltd at Hong Kong Productivity Council has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

Test Site Registration Number : 4780A-1



## **List of Test and Measurement Instruments**

#### **Radiated Emission**

Equipment	Manufacturer	Туре	Cal. Date	Due Date
Semi-anechoic Chamber	Frankonia	Nil	23-Apr-18	23-Apr-19
Test Receiver	R&S	ESU40	12-Jun-18	12-Jun-19
Active Loop Antenna	EMCO	6502	30-Oct-17	30-Oct-18
Bi-conical Antenna	R&S	HK116	21-Mar-18	21-Mar-20
Log Periodic Antenna	R&S	HL223	22-Mar-18	22-Mar-20
Horn Antenna	EMCO	3115	28-Mar-18	28-Mar-20
Coaxial cable	Huber+Suhner	CNM- NMCMILX800- 473	11-Dec-17	11-Dec-19
High Frequency Cable	Huber+Suhner	CNM- NMCMILX800- 473	11-Dec-17	11-Dec-19
Microwave amplifer 0.5- 26.5GHz, 25dB gain	HP	83017A	18-Jul-17	18-Jul-19
Preamplifier 18GHz to 40GHz with cable	A.H. Systems, Inc.	PAM-1840VH	29-Jan-18	29-Jan-19
High Pass Filter (cutoff freq. =1000MHz)	Trilithic	23042	30-Oct-17	30-Oct-19

### AC Mains Conducted Emission

Equipment	Manufacturer	Туре	Cal. Date	Due Date
Test Receiver	R & S	ESCS30	27 Sep 17	27 Sep 18
LISN	R&S	ESH3-Z5	03 Jan 18	03 Jan 19
Coaxial Cable	Teseq	RG223	01 Nov 17	01 Nov 18

#### Radio Test

Equipment	Manufacturer	Туре	Cal. Date	Due Date
Spectrum Analyzer	R&S	FSP30	03-May-18	02-May-19

FCC\_15.247\_DSS\_v2.0



## **Measurement Uncertainty**

The estimated combined standard uncertainty for power-line conducted emissions measurements is  $\pm 2.42$ dB.

The estimated combined standard uncertainty for radiated emissions measurements is  $\pm$ 4.81dB (9kHz to 30MHz) and  $\pm$ 4.62dB (30MHz to 200MHz) and  $\pm$ 5.67dB (200MHz to 1000MHz) and is  $\pm$ 5.07dB (1GHz to 8.2GHz) and  $\pm$ 4.58dB (8.2GHz to 12.4GHz) and  $\pm$ 4.78dB (12.4GHz to 18GHz)

The estimated combined standard uncertainty for antenna conducted emission is ±2.1dB

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of k=2, which for the level of confidence is approximately 95%.



# Results FCC Part 15 – Subpart C/ RSS-247 Issue 2

FCC 15.203 – Antenna Requirement 1		Pass	
FCC Requirement:	: No antenna other than that furnished by the responsible party shall be used with the device		
Results:	a) Antenna type: b) Manufacturer and model no: c) Peak Gain:	Fixed Integral PCB antenna F-6888 0 dBi	
Verdict:	Pass		

FCC 15.204 – Antenna Requirement 2 Pass			
<b>FCC Requirement:</b> An intentional radiator may be operated only with the antenna with which it is authorized. If an antenna is marketed with the intentional radiator, it shall be of a ty which is authorized with the intentional radiator.			
Results: Only one integral antenna can be used.			
Verdict:	N/A		

RSS-Gen 6.3 – External Control Pass			
<b>IC Requirement:</b> The device shall not have any external controls accessible to the user that en be adjusted, selected or programmed to operate in violation of the limits prest the applicable RSS.			
Results:	The device does not have any transmitter external controls acce can be adjusted and operated in violation of the limits of this star		
Verdict:	Pass		

RSS-Gen 8.3 – Antenna Requirement Pass				
IC Requirement:	When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer.			
Results:	a) Antenna type: b) Manufacturer c) model no d) Gain with reference to an isotropic radiator:	Fixed Integral PCB antenna Shenzhen Shi Xin Zhong Xin F-6888 0 dBi		
Verdict:	Pass			



FCC 15.207/	RSS-Gen 8.8 – C	onducted Emis	sion on AC M	ains		Pass
Test date		3				
Requirement	15.207(a)/	RSS-Gen 8.8				
Results:	Pass					
Live measur	ement					
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBµV	Average dBµV	Limit QP (dBµV)	Limit AV (dBµV)	Verdict
0,15 – 0,5	No peak found			66 - 56	56 - 46	Pass
> 0,5 - 5	No peak found			56	46	Pass
> 5 - 30	No peak found			60	50	Pass
Neutral meas	surement					
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBµV	Average dBµV	Limit QP (dBµV)	Limit AV (dBµV)	Verdict
0,15 – 0,5	No peak found			66 - 56	56 - 46	Pass
> 0,5 - 5	No peak found			56	46	Pass
> 5 - 30	No peak found			60	50	Pass
Results:	combination The radio fr frequency c	ns between ava requency voltag	ilable modulation e that is condu- vithin the band	ons and data ra	se mode from a ate. the AC power li Hz does not exc	ne on any



)/ RSS-247 5.4 – Peak Output Power	Pass
n: ANSI C63.10 – 2013	
: 02.08.2018	
n:Tx mode	
: Temporary antenna port	
	ANSI C63.10 – 2013 : 02.08.2018 n : Tx mode

### FCC/ IC Requirement :

Humidity

Supply voltage : 120VAC Temperature : 23°C

: 50%

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 nonoverlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 Watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 Watts.

Results:	For test protocols please refer to Appendix 1.					
Frequency (MHz)	Cable loss (dB)	Maximum peak output power (dBm)	Limit (W/dBm)	Verdict		
2402	0.5	-0.35	0.125 / 21.0	Pass		
2441	0.5	-1.11	0.125 / 21.0	Pass		
2480	0.5	-1.99	0.125 / 21.0	Pass		

FCC 15.247 (a)/ RSS-24	Pass					
FCC/ IC Requirement : N/A						
Test Specification:ANSI C63.10 – 2013Test date:02.08.2018Mode of operation:Tx modePort of testing:Temporary antenna portSupply voltage:120VACTemperature:23°CHumidity:50%						
CO	Results:Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types.For test protocols refer to Appendix 1.					
Frequency						
(MHz) 2402	(MHz) 2401.346	(MHz) 2402.678	(MHz) 1.332			
2402	2401.346 2402.678 1.332 2440.346 2441.678 1.332					
2480	2479.346	2480.678	1.332			



RSS-Gen 6.6 – Occu	RSS-Gen 6.6 – Occupied Bandwidth Pass				
FCC/ IC Requirement : N/A					
Temperature :	07.08.2018 Tx mode	antenna port			
<b>Results:</b> Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types.				•	
_		tocols refer to Appe			
Frequency (MHz)		Left (MHz)	Right (MHz)	99% bandwidth (MHz)	
2402		2401.250	2402.660	1.41	
2441	2440.250 2441.660 1.41				
2480		2479.260	2480.660	1.40	

FCC 15.247(a)(1)/ RSS-247 5.1 – Carrier Frequency Separation Pass				
FCC/ IC Requirement:				
	ave hopping channel carrier frequencie f the hopping channel, whichever is gre			
Test Specification: ANSI C63.10 – 2013Test date: 02.08.2018Mode of operation: Tx mode (hopping on)Port of testing: Temporary antenna portSupply voltage: 120VACTemperature: 23°CHumidity: 50%				
Results:Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types.For test Results plots refer to Appendix 1.				
Channel Separation (kHz) Limit (kHz) Verdict				
1000	888	Pass		



FCC 15.247 (a)(1)(iii)/ RSS-247 5.1 – Number of hopping channels Pass				
FCC/ IC Requirement:				
Frequency hopping systems operati frequencies.	ng in the 2400MHz-2483.5MHz bands	shall use at least 15 hopping		
Test Specification:ANSI C63.10 -Test date:02.08.2018Mode of operation:Tx mode (hoppPort of testing:Temporary andSupply voltage:120VACTemperature:23°CHumidity:50%	ping on)			
<b>Results:</b> For test Results plots refer to Appendix 1.				
No. of hopping channels Limit Verdict				
79	15	Pass		

FCC 15.247 (a)(1)(i	ii)/ RSS-247 5.1 – Time of Occupancy (Dwell Time) Pass				
FCC/ IC Requireme	FCC/ IC Requirement:				
Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.					
Test date:Mode of operation:Port of testing:Supply voltage:Temperature:	Temperature : 23°C				
Results:	Time period calculation = $0.4 \times 79 = 31.6s$ Dwell time = $112 \times 2.93 \times 10^{-3} = 0.328 \text{ s}$ <= $0.4 \text{ s}$				
	For test protocols please refer to Appendix 1.				
Verdict:	Pass				



### FCC 15.247 (a) – Hopping Sequence Pass FCC Requirement: The system radio frequency (RF) bandwidth is equal to the channel bandwidth multiplied by the number of channels in the hopset. The hopset shall be such that the near-term distribution of frequencies appears random, with sequential hops randomly distributed in both direction and magnitude of change in the hopset, while the long-term distribution appears evenly distributed. Refer to Bluetooth Specification

#### FCC 15.247 (a) – Equal Hopping Frequency Use

Pass

Pass

Pass

FCC Requirement: Each of the transmitter's hopping channels is used equally on average.

The system radio frequency (RF) bandwidth is equal to the channel bandwidth multiplied by the number of channels in the hopset. The hopset shall be such that the near-term distribution of frequencies appears random, with sequential hops randomly distributed in both direction and magnitude of change in the hopset, while the long-term distribution appears evenly distributed.

Refer to Bluetooth Specification

#### FCC 15.247 (a) - Receiver Input Bandwidth

FCC Requirement: The associated receiver(s) complies with the requirement that its input bandwidth matches the bandwidth of the transmitted signal.

Refer to Bluetooth Specification

### FCC 15.247 (a) – Receiver Hopping Capability

FCC Requirement: The associated receiver has the ability to shift frequencies in synchronisation with the transmitted signals.

Refer to Bluetooth Specification



FCC 15.247 (d)/ RSS-247 5.5 – Spurious Conducted Emissions Pass						
Test date:Mode of operation:Port of testing:Supply voltage:Temperature:	ANSI C63.10 – 2013 02.08.2018 Tx mode Temporary antenna port 120VAC 23 °C 50 %					
FCC Requirement:	digitally modulate produced by the in bandwidth within t	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.				
Results:	combinations betw There is no peak in the three transr	Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types. There is no peak found outside any 100kHz bandwidth of the operating frequency band in the three transmit frequency. All three transmit frequency modes comply with the limit stated in subclause 15.247(d). For test protocols refer to Appendix 1.				
Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Delta (dB)	Verdict	
2402	2399.920	-31.98	-2.79	29.18	Pass	
2441	2340.000	-46.75	-3.40	43.35	Pass	
2480	2484.820	-36.05	-3.66	32.05	Pass	



	Sen 8.9 – Radiated	Emissions in Restricted Freq	uency Bands Pass
Test Specification	ANSI C63.10 – 201	3	
	02.08.2018	0	
Mode of operation :			
	Enclosure		
Frequency range :			
	120VAC		
Temperature :	23°C		
Humidity :	50%		
FCC Requirement:	level of the desired	d power. In addition, radiated en in section15.205(a), must also (	and at least 20dB below the highest hissions which fall in the restricted comply with the radiated emission
IC Requirement:	Spurious emissions from licence-exempt transmitters shall comply with the field strength limits shown in RSS-Gen table 5. Unwanted emissions falling into restricted bands of Table 3 shall comply with the limits specified in RSS-Gen. Unwanted emissions not falling within restricted frequency bands shall either comply with the limit specified in the applicable RSS, or with those specified in RSS-Gen.		
Results:	orst-case mode from all possible data rate.		
Mode: 2402 MHz T)		o spurious found below 30MHz. Vertical Polarization	
Freq			
•		Level	Limit/ Detector
MHZ		Level dBuV/m	Limit/ Detector dBuV/m
MHz 2390.0		dBuV/m	dBuV/m
2390.0	00	<b>dBuV/m</b> 46.4	
	00 00	dBuV/m	dBuV/m 74.0 / PK
2390.0 2390.0	00 00 12	dBuV/m 46.4 31.9	dBuV/m           74.0 / PK           54.0 / AV
2390.0 2390.0 4804.0	00 00 12 12	dBuV/m 46.4 31.9 54.3	dBuV/m           74.0 / PK           54.0 / AV           74.0 / PK
2390.0 2390.0 4804.0 4804.0	00 00 12 12 00	dBuV/m 46.4 31.9 54.3 49.4	dBuV/m           74.0 / PK           54.0 / AV           74.0 / PK           54.0 / AV
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0	00 00 12 12 00 00	dBuV/m 46.4 31.9 54.3 49.4 46.8	dBuV/m           74.0 / PK           54.0 / AV           74.0 / PK           54.0 / AV           74.0 / PK           74.0 / PK
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0	00 00 12 12 12 00 00 X	dBuV/m 46.4 31.9 54.3 49.4 46.8 33.5	dBuV/m           74.0 / PK           54.0 / AV           74.0 / PK           54.0 / AV           74.0 / PK           74.0 / PK
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0 7206.0 Mode: 2402 MHz T Freq MHz	00 00 12 12 12 00 00 X	dBuV/m         46.4         31.9         54.3         49.4         46.8         33.5         Horizontal Polarization         Level         dBuV/m	dBuV/m           74.0 / PK           54.0 / AV           74.0 / PK           54.0 / AV           74.0 / PK           54.0 / AV           54.0 / AV           Limit/ Detector           dBuV/m
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0 7206.0 Mode: 2402 MHz T Freq MHz 2390.0	00 00 12 12 12 00 00 X	dBuV/m         46.4         31.9         54.3         49.4         46.8         33.5         Horizontal Polarization         Level         dBuV/m         52.1	dBuV/m           74.0 / PK           54.0 / AV           74.0 / PK           54.0 / AV           74.0 / PK           54.0 / AV           54.0 / AV           Limit/ Detector           dBuV/m           74.0 / PK
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0 Wode: 2402 MHz T Freq MHz 2390.0 2390.0	00 00 12 12 00 00 X X 00 00 00 00	dBuV/m         46.4         31.9         54.3         49.4         46.8         33.5         Horizontal Polarization         Level         dBuV/m         52.1         37.9	dBuV/m           74.0 / PK           54.0 / AV           74.0 / PK           54.0 / AV           74.0 / PK           54.0 / AV
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0 Wode: 2402 MHz T Freq MHz 2390.0 2390.0 4804.0	00 00 12 12 12 00 00 X X 00 00 12	dBuV/m         46.4         31.9         54.3         49.4         46.8         33.5         Horizontal Polarization         Level         dBuV/m         52.1         37.9         51.4	dBuV/m           74.0 / PK           54.0 / AV           74.0 / PK           54.0 / AV           74.0 / PK           54.0 / AV           74.0 / PK           54.0 / AV           74.0 / PK           54.0 / AV           74.0 / PK
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0 7206.0 7206.0 7206.0 7206.0 7206.0 7206.0 7206.0 7200.0 7200.0 4804.0 4804.0	00 00 12 12 12 00 00 X X 00 00 12 12 12	dBuV/m         46.4         31.9         54.3         49.4         46.8         33.5         Horizontal Polarization         Level         dBuV/m         52.1         37.9         51.4         45.9	dBuV/m           74.0 / PK           54.0 / AV
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0 Mode: 2402 MHz T Freq MHz 2390.0 2390.0 4804.0 4804.0 7206.0	00 00 12 12 12 00 00 00 X 00 00 12 12 12 12 00	dBuV/m         46.4         31.9         54.3         49.4         46.8         33.5         Horizontal Polarization         Level         dBuV/m         52.1         37.9         51.4         45.9         46.4	dBuV/m           74.0 / PK           54.0 / AV
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0 7206.0 7206.0 7206.0 7206.0 7206.0 7206.0 7206.0 7200.0 7200.0 4804.0 4804.0	00 00 12 12 12 00 00 00 X 00 00 12 12 12 12 00	dBuV/m         46.4         31.9         54.3         49.4         46.8         33.5         Horizontal Polarization         Level         dBuV/m         52.1         37.9         51.4         45.9	dBuV/m           74.0 / PK           54.0 / AV
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0 Mode: 2402 MHz T Freq MHz 2390.0 2390.0 4804.0 4804.0 7206.0 7206.0	00 00 12 12 12 00 00 00 X X 00 00 12 12 12 12 00 00 00 00	dBuV/m         46.4         31.9         54.3         49.4         46.8         33.5         Horizontal Polarization         Level         dBuV/m         52.1         37.9         51.4         45.9         46.4	dBuV/m           74.0 / PK           54.0 / AV
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0 Mode: 2402 MHz T Freq MHz 2390.0 2390.0 2390.0 4804.0 7206.0 7206.0 Mode: 2441 MHz T	00 00 12 12 12 00 00 00 00 12 12 12 00 00 00 12 12 12 00 00 12 12 12 00 00 00 12 12 12 00 00 00 00 00 00 00 00 00 0	dBuV/m         46.4         31.9         54.3         49.4         46.8         33.5         Horizontal Polarization         Level         dBuV/m         52.1         37.9         51.4         45.9         46.4         33.1         Vertical Polarization         Level	dBuV/m           74.0 / PK           54.0 / AV           54.0 / AV           54.0 / AV           54.0 / AV           Limit/ Detector
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0 Mode: 2402 MHz T Freq MHz 2390.0 2390.0 4804.0 7206.0 7206.0 7206.0 Mode: 2441 MHz T Freq MHz	00 00 12 12 12 00 00 00 X 12 00 00 12 12 12 00 00 00 12 12 00 00 X	dBuV/m         46.4         31.9         54.3         49.4         46.8         33.5         Horizontal Polarization         Level         dBuV/m         52.1         37.9         51.4         45.9         46.4         33.1         Vertical Polarization         Level         dBuV/m	dBuV/m           74.0 / PK           54.0 / AV           54.0 / AV           74.0 / PK           54.0 / AV
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0 Mode: 2402 MHz T) Freq MHz 2390.0 2390.0 4804.0 7206.0 7206.0 7206.0 7206.0 7206.0 Freq MHz Freq MHz 4882.4	00 00 12 12 12 00 00 00 X 00 00 12 12 00 00 12 12 00 00 12 12 12 00 00 12 12 12 12 12 12 12 12 12 12	dBuV/m         46.4         31.9         54.3         49.4         46.8         33.5         Horizontal Polarization         Level         dBuV/m         52.1         37.9         51.4         45.9         46.4         33.1         Vertical Polarization         Level         dBuV/m         51.4         45.9         46.4         33.1         Vertical Polarization         Level         dBuV/m         54.6	dBuV/m           74.0 / PK           54.0 / AV
2390.0 2390.0 4804.0 4804.0 7206.0 7206.0 Mode: 2402 MHz T Freq MHz 2390.0 2390.0 4804.0 7206.0 7206.0 7206.0 Mode: 2441 MHz T Freq MHz	00 00 12 12 12 00 00 00 00 12 12 00 00 12 12 00 00 12 12 12 00 00 12 12 12 12 12 12 12 12 12 12	dBuV/m         46.4         31.9         54.3         49.4         46.8         33.5         Horizontal Polarization         Level         dBuV/m         52.1         37.9         51.4         45.9         46.4         33.1         Vertical Polarization         Level         dBuV/m	dBuV/m           74.0 / PK           54.0 / AV           100 / PK           100 / PK



9764.439	35.2	54.0 / AV
Mode: 2441 MHz TX	Horizontal Polarization	
Freq	Level	Limit/ Detector
MHz	dBuV/m	dBuV/m
4881.650	52.6	74.0 / PK
4881.650	45.1	54.0 / AV
9763.669	49.4	74.0 / PK
9763.669	35.1	54.0 / AV
Mode: 2480 MHz TX	Vertical Polarization	
Freq	Level	Limit/ Detector
MHz	dBuV/m	dBuV/m
2483.500	57.9	74.0 / PK
2483.500	44.1	54.0 / AV
4959.650	52.7	74.0 / PK
4959.650	44.8	54.0 / AV
7439.900	48.3	74.0 / PK
7439.900	35.3	54.0 / AV
Mode: 2480 MHz TX	Horizontal Polarization	
Freq	Level	Limit/ Detector
MHz	dBuV/m	dBuV/m
2483.500	61.9	74.0 / PK
2483.500	47.4	54.0 / AV
4960.429	51.4	74.0 / PK
4960.429	42.5	54.0 / AV
7440.435	47.3	74.0 / PK
7440.435	33.7	54.0 / AV