

Report Reference ID:	372836-6TRFWL
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Test specification:	Title 47 – Telecommunication Chapter I – Federal Communications Commission Subchapter B – Common carrier services Part 27 – Miscellaneous wireless communications services
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Applicant:	TEKO Telecom Srl. Via Meucci, 24/a I-40024 Castel S. Pietro Terme (BO) (Italy)
Apparatus:	Medium Power Remote Unit
Model:	TRM19HAWX2325AT
FCC ID:	XM2-MP19HAWX2325

Testing laboratory:	Nemko Italy Spa Via del Carroccio, 4 20853 Biassono (MB) – Italy Telephone: +39 039 2201201 Facsimile: +39 039 2201221
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	Name and title	Date
Tested by:	Rulun Poul  P. Barbieri, Wireless/EMC Specialist	06/24/2019
Reviewed by:	R. Giampaglia, Wireless/EMC Specialist	06/24/2019

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Specification: FCC 27

## Section 1: Report summary

### 1.1 Test specification

**Specifications** 

Part 27 – Miscellaneous wireless communications services

### 1.2 Statement of compliance

#### Compliance

In the configuration tested the EUT was found compliant

Yes 🖂

No 🔙

This report contains an assessment of apparatus against specifications based upon tests carried out on samples submitted at Nemko Spa. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 27. Radiated tests were conducted in accordance with ANSI C63.26-2015.

### 1.3 Exclusions

**Exclusions** None

### 1.4 Registration number

Test site FCC 682159 ID number

## 1.5 Test report revision history

Revision #	Details of changes made to test report
TRF	Original report issued
R1TRF	

### 1.6 Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

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# Section 2: Summary of test results

2.1 FCC Part 27, test results			
Part	Methods	Test description	Verdict
	§ 935210 D05v01r03 (3.2)	AGC threshold	Pass
	§ 935210 D05v01r03 (3.3)	Out of band rejection	Pass
§27.53(m)(6)	§ 935210 D05v01r03 (3.4)	Occupied bandwidth	Pass
§27.50(h)	§ 935210 D05v01r03 (3.5)	Peak output power at RF antenna connector	Pass
§27.53(m)	§ 935210 D05v01r03 (3.6)	Spurious emissions at RF antenna connector	Pass
§27.53(m)	§ 935210 D05v01r03 (3.8)	Radiated spurious emissions	Pass
§27.54	§ 935210 D05v01r03 (3.7)	Frequency stability	N/A a)

### Notes:

a) NOT APPLICABLE: Modulation/frequency conversion circuitry not in use. No frequency change in EUT (input and output have same frequency)

Specification: FCC 27

# Section 3: Equipment under test (EUT) and application details

3.1 Applicant of	lataile	
		Toka Talagam Cri
Applicant	Name:	Teko Telecom Srl
complete	Federal	0040000400
business name	Registration	0018963462
	Number (FRN):	
	Grantee code	XM2
Mailing address	Address:	Via Meucci, 24/a
	City:	Castel S. Pietro Terme
	Province/State:	Bologna
	Post code:	40024
	Country:	Italy
		· · ·
3.2 Modular ed	quipment	
a) Single modular	Single modular appro	oval
approval	Yes □	No ⊠
b) Limited single	Limited single modula	ar approval
modular approval	Yes □	No ⊠
• •		
0.0 Deal and	19	
3.3 Product de		
FCC ID	Grantee code:	XM2
	Product code:	-MP19HAWX2325
Equipment class	B2I	
Description of	Booster	
product as it is	Model	
	i Modei	TDMAGULANANGOOFAT
marketed		TRM19HAWX2325AT
marketed	name/number:	
marketed		TRM19HAWX2325AT 1013849001
	name/number: Serial number:	
3.4 Application	name/number: Serial number:	1013849001
	name/number: Serial number:	1013849001
3.4 Application	name/number: Serial number:  purpose  Original certi	1013849001
3.4 Application	name/number: Serial number:  purpose  Original certi Change in id	fication entification of presently authorized equipment
3.4 Application	name/number: Serial number:  purpose  Original certi Change in id Original FCC	fication entification of presently authorized equipment CID: Grant date:
3.4 Application	name/number: Serial number:  purpose  Original certi Change in id Original FCC	fication entification of presently authorized equipment



Specification: FCC 27

## Section 3: Equipment under test

3.5 Composite/related equipment			
a) Composite	The EUT is a composite device subject to an additional equipment		
equipment	authorization		
	Yes □ No ⊠		
b) Related	The EUT is part of a system that operates with, or is marketed with,		
equipment	another device that requires an equipment authorization		
	Yes □ No ⊠		
c) Related FCC ID	If either of the above is "yes":		
	has been granted under the FCC ID(s) listed below:		
	is in the process of being filled under the FCC ID(s) listed below:		
	is pending with the FCC ID(s) listed below:		
	has a mix of pending and granted statues under the FCC ID(s)		
	listed below:		
	i FCC ID:		
	ii FCC ID:		

3.6 Sample inf	mple information	
Receipt date:	05/27/2019	
Nemko sample ID number:		

3.7 EUT techn	ical specifications
Operating band:	Down Link – Up Link: 2496–2690 MHz
Operating frequency:	Wideband
Modulation type:	LTE-TDD (QAM and QPSK)
Occupied bandwidth:	LTE: 5 MHz, 10 MHz, 15 MHz, 20 MHz
Channel spacing:	standard
Emission designator:	LTE: D7W
RF Output	Down Link: 33dBm (2W) Up Link: N.A. (The EUT does not transmit over the air in the up-link direction)
Gain	Down Link: 38dB Up Link: N.A. (The EUT does not transmit over the air in the up-link direction)
Antenna type:	External Antenna is not provided, equipment that has an external 50 $\Omega$ RF connector
Power source:	100-240 Vac



Specification: FCC 27

## Section 3: Equipment under test

3.8 Accessories and support equipment				
The following information id	lentifies accessories used to exercise the EUT during testing:			
Item # 1				
Type of equipment:	Master Unit - Subrack			
Brand name:	Teko Telecom srl			
Model name or number:	SUB-TRX-PSU			
Serial number:	101083001			
Nemko sample number:				
Connection port:				
Cable length and type:				
Item # 2				
Type of equipment:	Master Unit – Management Module			
Brand name:	Teko Telecom srl			
Model name or number:	TSPV-R			
Serial number:	110942253			
Nemko sample number:				
Connection port:	LAN port			
Cable length and type:				
Item # 3				
Type of equipment:	Master Unit – Optical Module			
Brand name:	Teko Telecom srl			
Model name or number:	TTRU4W-S-M			
Serial number:	110679007			
Nemko sample number:				
Connection port:	DL/UL RF connector (to connect to the base station)			
·	Optical port (to connect to remote unit)			
Cable length and type:				
Item # 4				
Type of equipment:	Master Unit – Power Supply			
Brand name:	Teko Telecom srl			
Model name or number:	TPSU/AC			
Serial number:	081063004			
Nemko sample number:				
Connection port:				
Cable length and type:				



Specification: FCC 27

#### 3.9 Operation of the EUT during testing

**Details:** 

In down-link direction, normal working at max gain with max RF power output.

### 3.10 EUT setup diagram

In this system, Remote Unit is the EUT. Master Unit includes only management module and optical module (to convert RF signal in optical signal in down link direction and viceversa optical signal in RF signal in up link direction). As described in "Operational description", master unit is connected directly to base station, so the system doesn't use another equipment (under another FCC ID) to exercise the EUT. Signal generator is linked directly to the RF connector of optical module in the Master Unit.

### Test setup for output power, occupied bandwidth, spurious emissions:



#### **Procedure**

Connect the signal modulated generator to the input of the EUT, so that the EUT works at the max gain. Raise the input level to the EUT until reach the maximum output power. Connect the spectrum analyzer to the RF output connector of the EUT.



**Judgment** 

None

Specification: FCC 27

Product: TRM19HAWX2325AT

4.1 Modifications incorporated in the EUT

Modifications

Modifications performed to the EUT during this assessment None 
Yes ☐, performed by Client ☐ or Nemko ☐
Details:

4.2 Deviations from laboratory tests procedures

Deviations

Deviations from laboratory test procedures
None ☑ Yes ☐ - details are listed below:

4.3 Technical judgment



Specification: FCC 27

## Section 5: Test conditions

## 5.1 Deviations from laboratory tests procedures

No deviations were made from laboratory test procedures.

5.2 Test condit	5.2 Test conditions, power source and ambient temperatures				
Normal temperature, humidity and air pressure test conditions	Temperature: 15–30 °C Relative humidity: 20–75 % Air pressure: 86–106 kPa				
	When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.				
Power supply range:	The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages ±5 %, for which the equipment was designed.				



### Section 5: Test conditions, continued

5.3 Measurement uncertainty					
EUT	Туре	Test	Range and Setup features	Measurement Uncertainty	Notes
		Frequency error	0.001 MHz ÷ 40 GHz	0.08 ppm	(1)
			10 kHz ÷ 30 MHz	1.0 dB	(1)
		Carrier power RF Output Power	30 MHz ÷ 18 GHz	1.5 dB	(1)
		Til Output Fower	18 MHz ÷ 40 GHz	3.0 dB	(1)
		Adjacent channel power	1 MHz ÷ 18 GHz	1.6 dB	(1)
		0	10 kHz ÷ 26 GHz	3.0 dB	(1)
		Conducted spurious emissions	26 GHz ÷ 40 GHz	4.5 dB	(1)
		Intermodulation attenuation	1 MHz ÷ 18 GHz	2.2 dB	(1)
		Attack time – frequency behaviour	1 MHz ÷ 18 GHz	2.0 ms	(1)
		Attack time – power behaviour	1 MHz ÷ 18 GHz	2.5 ms	(1)
		Release time – frequency behaviour	1 MHz ÷ 18 GHz	2.0 ms	(1)
	Conducted	Release time – power behaviour	1 MHz ÷ 18 GHz	2.5 ms	(1)
Transmitter	Conducted	Transient behaviour of the transmitter– Transient frequency behaviour	1 MHz ÷ 18 GHz	0.2 kHz	(1)
		Transient behaviour of the transmitter – Power level slope	1 MHz ÷ 18 GHz	9%	(1)
		Frequency deviation - Maximum permissible frequency deviation	0.001 MHz ÷ 18 GHz	1.3%	(1)
		Frequency deviation - Response of the transmitter to modulation frequencies above 3 kHz	0.001 MHz ÷ 18 GHz	0.5 dB	(1)
		Dwell time	-	3%	(1)
		Hopping Frequency Separation	0.01 MHz ÷ 18 GHz	1%	(1)
		Occupied Channel Bandwidth	0.01 MHz ÷ 18 GHz	2%	(1)
		Modulation Bandwidth	0.01 MHz ÷ 18 GHz	2%	(1)
		Radiated spurious emissions	10 kHz ÷ 26.5 GHz	6.0 dB	(1)
	Radiated	riadiated spurious erriissions	26.5 GHz ÷ 40 GHz	8.0 dB	(1)
	naulateu	Effective radiated power	10 kHz ÷ 26.5 GHz	6.0 dB	(1)
		transmitter	26,5 GHz ÷ 40 GHz	8.0 dB	(1)
		Dadioted anurious arriasis	10 kHz ÷ 26.5 GHz	6.0 dB	(1)
	Radiated	Radiated spurious emissions	26.5 GHz ÷ 40 GHz	8.0 dB	(1)
Receiver		Sensitivity measurement	1 MHz ÷ 18 GHz	6.0 dB	(1)
	المعاد المسام	Conducted anuminus arrainsis as	10 kHz ÷ 26 GHz	3.0 dB	(1)
Cor	Conducted	Conducted spurious emissions	26 GHz ÷ 40 GHz	4.5 dB	(1)

<sup>(1)</sup> The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2 which has been derived from the assumed normal probability distribution with infinite degrees of freedom and for a coverage probability of 95 %



Specification: FCC 27

			A :/O : I N I	
quipment	Manufacturer	Model No.	Asset/Serial No.	Next cal.
ector Signal enerator	Agilent	N5172B EXG	MY53051238	05/2021
ector Signal enerator	Agilent	E4438C ESG	MY45094485	08/2019
pectrum Analyzer	Agilent	N9030A PXA	MY53120882	12/2019
ilog Broad Band ntenna 25-8000 MHz	Schwarzbeck	VULB 9162	VULB 9162-25	07/2021
ntenna 1-18 GHz	Schwarzbeck	STLP 9148	STPL 9148-123	07/2021
ouble ridge horn tenna (4 ÷ 40 GHz)	RFSpin	DRH40	061106A40	02/2020
roadband preamplifier 8 ÷ 40 GHz)	Miteq	JS44-18004000-35-8P- R	1.627	09/2019
roadband preamplifier -18 GHz	Schwarzbeck	BBV 9718	9718-137	08/2019
MI receiver 20 Hz ÷ 8 Hz	R&S	ESU8	100202	01/2020
MI receiver 2 Hz ÷ 44 Hz	R&S	ESW44	101620	05/2019
lydraulic revolving latform	Nemko	RTPL 01	4.233	NCR
urning-table	R&S	HCT	835 803/03	NCR
ntenna mast	R&S	HCM	836 529/05	NCR
ntroller	R&S	HCC	836 620/7	NCR
emi-anechoic namber	Nemko	10m semi-anechoic chamber	530	09/2021
hielded room	Siemens	10m control room	1947	NCR
emi-anechoic namber	Nemko	10m semi-anechoic chamber	70	NCR
hielded Room	Siemens	3m semi-anechoic chamber	3	NCR
otor controller	Emco	1051-25	9012-1559	NCR
otor controller	Emco	1061-1.521	9012-1508	NCR
ntenna Tower	Emco	2071-2	9601-1940	NCR
ontroller pole/table	Emco	2090	9511-1099	NCR

Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use (\*) Equipment supplied by manufacturer's

Specification: FCC 27

## Appendix A: Test results

## Clause 935210 D05v01 (3.2) AGC threshold

Measure of EUT AGC Threshold

Test date: 05/27/2019 to 06/24/2019

Test results: Pass

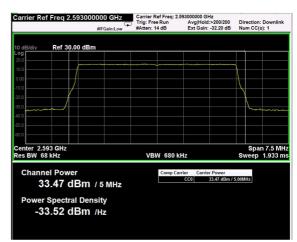
### Special notes

Broadband amplifiers: AWGN test signal used (5 MHz LTE channel)

#### Test data



AWGN Signal, Nominal Input Signal



AWGN Signal, Nominal Input Signal +1dB



Specification: FCC 27

## Clause 935210 D05v01 (3.3) Out of band rejection

Out of Band Rejection - Test for rejection of out of band signals.

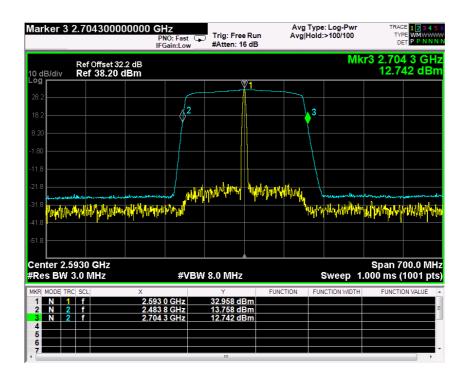
Test date: 05/27/2019 to 06/24/2019

Test results: Pass

### Special notes

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### Test data



Nemko

Product: TRM19HAWX2325AT

Specification: FCC 27

## Clause 27.53(m)(6) Occupied bandwidth

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Test date: 05/27/2019 to 06/24/2019

Test results: Pass

### Special notes

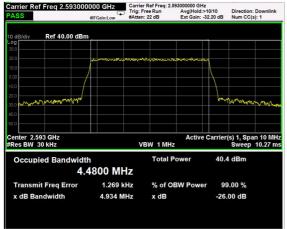
- Broadband amplifiers: AWGN test signal used (5 MHz LTE channel)



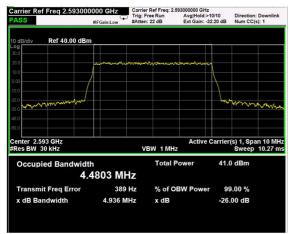
Specification: FCC 27

### Clause 27.53(m)(6) Occupied bandwidth, continued

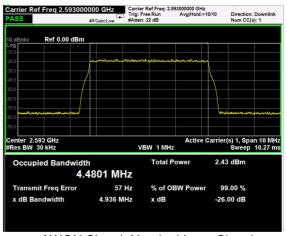
### Test data



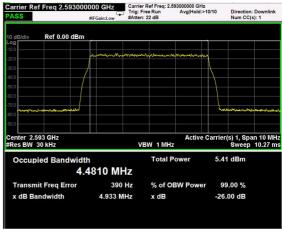
AWGN Signal, Nominal Input Signal, Output



AWGN Signal, Nominal Input Signal +3dB, Output



AWGN Signal, Nominal Input Signal, Input



AWGN Signal, Nominal Input Signal +3dB, Input



Specification: FCC 27

## Clause 27.50(h) Peak output power at RF antenna connector

### § 27.50(h) The following power limits shall apply in the BRS and EBS:

- (1) Main, booster and base stations.
  - (i) The maximum EIRP of a main, booster or base station shall not exceed 33 dBW  $\pm$  10log(X/Y) dBW, where X is the actual channel width in MHz and Y is either 6 MHz if prior to transition or the station is in the MBS following transition or 5.5 MHz if the station is in the LBS and UBS following transition, except as provided in paragraph (h)(1)(ii) of this section.
  - (ii) If a main or booster station sectorizes or otherwise uses one or more transmitting antennas with a non-omnidirectional horizontal plane radiation pattern, the maximum EIRP in dBW in a given direction shall be determined by the following formula: EIRP =  $33 \text{ dBW} + 10 \log(X/Y) \text{ dBW} + 10 \log(360/\text{beamwidth}) \text{ dBW}$ , where X is the actual channel width in MHz, Y is either (i) 6 MHz if prior to transition or the station is in the MBS following transition or (ii) 5.5 MHz if the station is in the LBS and UBS following transition, and beamwidth is the total horizontal plane beamwidth of the individual transmitting antenna for the station or any sector measured at the half-power points.

Test date: 05/27/2019 to 06/24/2019

Test results: Pass

### Special notes

- Broadband amplifiers: AWGN test signal used (5 MHz LTE channel)



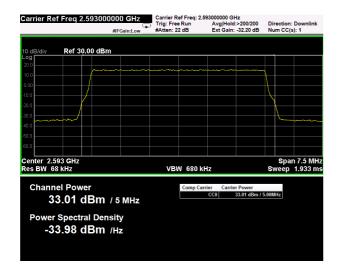
Specification: FCC 27

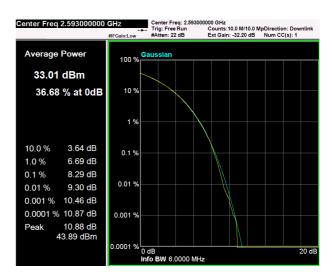
### Clause 27.50(h) Peak output power at RF antenna connector

### Test data

### AWGN signal, nominal input signal

Test data						
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	RF output Power (W/MHz)	PAR (dB)
Down-link	AWGN (LTE, 5MHz)	2593.0	33.01	2.00	0.40	10.88



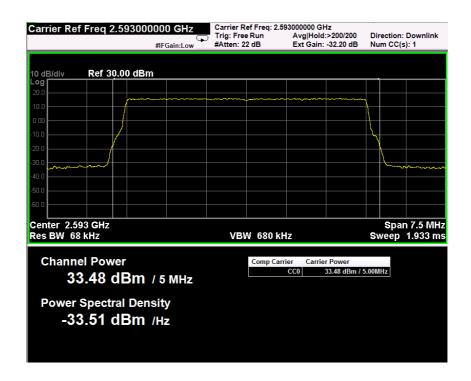


PAR measure is performed by the "CCDF" function installed on Spectrum analyzer that provides average power (the same measured with "Channel power" function), peak power and PAR.



### AWGN signal, nominal input signal + 3dB

Test data					
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	RF output Power (W/MHz)
Down-link	AWGN (LTE, 5MHz)	2593.0	33.48	2.23	0.44





## Clause 27.53(m) Spurious emissions at RF antenna connector

- (m) For BRS and EBS stations, the power of any emissions outside the licensee's frequency bands of operation shall be attenuated below the transmitter power (P) measured in watts in accordance with the standards below. If a licensee has multiple contiguous channels, out-of-band emissions shall be measured from the upper and lower edges of the contiguous channels.
- (2) For digital base stations, the attenuation shall be not less than 43 + 10 log (P) dB, unless a documented interference complaint is received from an adjacent channel licensee with an overlapping Geographic Service Area. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS No. 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. Provided that a documented interference complaint cannot be mutually resolved between the parties prior to the applicable deadline, then the following additional attenuation requirements shall apply:
- (6) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

Test date: 05/27/2019 to 06/24/2019

Test results: Pass

#### Special notes

- Broadband amplifiers: AWGN test signal used (5 MHz LTE channel)



## Clause 27.53 (m) Spurious emissions at RF antenna connector, continued

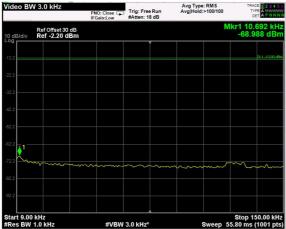
Test data			
See Plots below			
Spurious emissions me	asurement results:		
Frequency (MHz)	Spurious emission (dBm)	Limit (dBm)	Margin (dB)
Low channel			
First channel	Negligible	-13	
Mid channel			
2593 MHz	Negligible	-13	
High channel			1
Last channel	Negligible	-13	



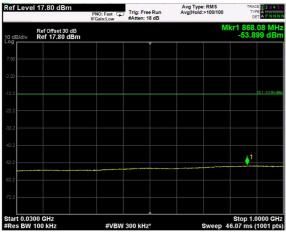
### Test data, continued: spurious emissions at antenna terminal

### **AWGN** signal

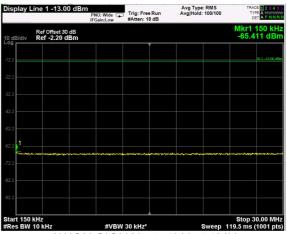
(Plots are referred to modulated carrier at the Middle Channel)



AWGN SIGNAL, 9kHz-150kHz



AWGN SIGNAL, 30MHz-1GHz



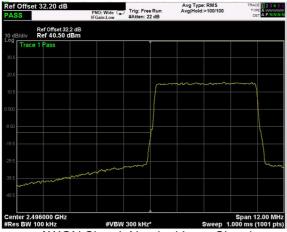
AWGN SIGNAL, 150kHz-30MHz



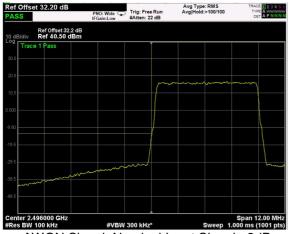
AWGN SIGNAL, 1GHz-27GHz

Specification: FCC 27

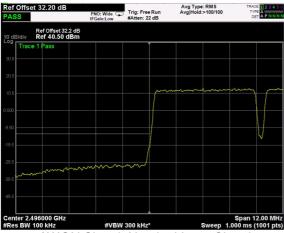
### Test data, continued: band edges Inter modulation



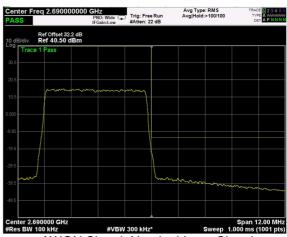
AWGN Signal, Nominal Input Signal, Low Band Edge, 1 Carrier



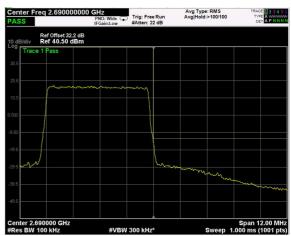
AWGN Signal, Nominal Input Signal +3dB, Low Band Edge, 1 Carrier



AWGN Signal, Nominal Input Signal, Low Band Edge, 2 Carrier



AWGN Signal, Nominal Input Signal, High Band Edge, 1 Carrier

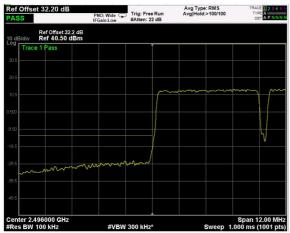


AWGN Signal, Nominal Input Signal +3dB, High Band Edge, 1 Carrier



AWGN Signal, Nominal Input Signal, High Band Edge, 2 Carrier





AWGN Signal, Nominal Input Signal +3dB, Low Band Edge, 2 Carrier



AWGN Signal, Nominal Input Signal +3dB, High Band Edge, 2 Carrier



Specification: FCC 27

## Clause 27.53(m) Radiated Spurious emissions

- (m) For BRS and EBS stations, the power of any emissions outside the licensee's frequency bands of operation shall be attenuated below the transmitter power (P) measured in watts in accordance with the standards below. If a licensee has multiple contiguous channels, out-of-band emissions shall be measured from the upper and lower edges of the contiguous channels.
- (2) For digital base stations, the attenuation shall be not less than 43 + 10 log (P) dB, unless a documented interference complaint is received from an adjacent channel licensee with an overlapping Geographic Service Area. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS No. 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. Provided that a documented interference complaint cannot be mutually resolved between the parties prior to the applicable deadline, then the following additional attenuation requirements shall apply:
- (6) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

Special notes		

Test date: 05/27/2019 to 06/24/2019/21

Test results: Pass



Specification: FCC 27

### Clause 27.53(m) Radiated spurious emissions, continued

#### Test data

The D.U.T. was positioned according to the radiated emissions set-up

The D.U.T. antenna connector was terminated by a 50  $\Omega$  shielded dummy load.

The spectrum was searched from 30 MHz to 1 GHz (RBW 100 kHz) & 1 GHz (RBW 1 MHz) to the tenth harmonic of the carrier.

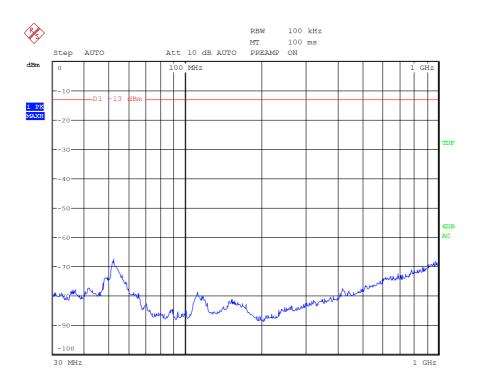
There were no emissions detected above the noise floor which was at least 20 dB below the specification limit.

Spurious emissions measurement results:

	is measurement rest			
Frequency	Polarization.	Field strength	Limit	Margin
(MHz)	V/H	(dBm)	(dBm)	(dB)
Low channel		Г	Г	Т
First Channel	V/H	Negligible	-13	
Mid channel				
2007,5	V/H	Negligible	-13	
High channel				
Look Champal	\//L1	No elimino	10	
Last Channel	V/H	Negligible	-13	

Note: Field strength includes correction factor of antenna, cable loss, amplifier, and attenuators where applicable.

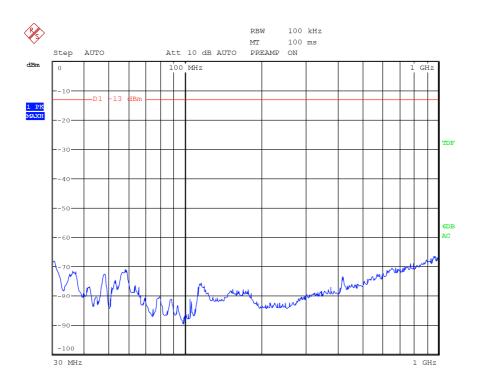




Date: 19.JUN.2019 09:40:11

30MHz-1GHz - H Pol

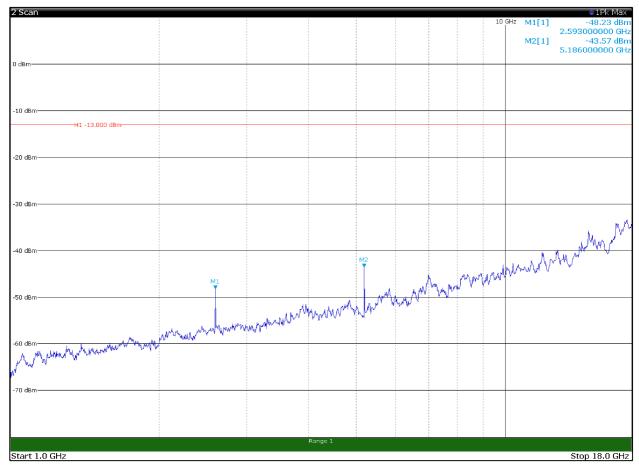




Date: 19.JUN.2019 09:39:24

30MHz-1GHz - V Pol

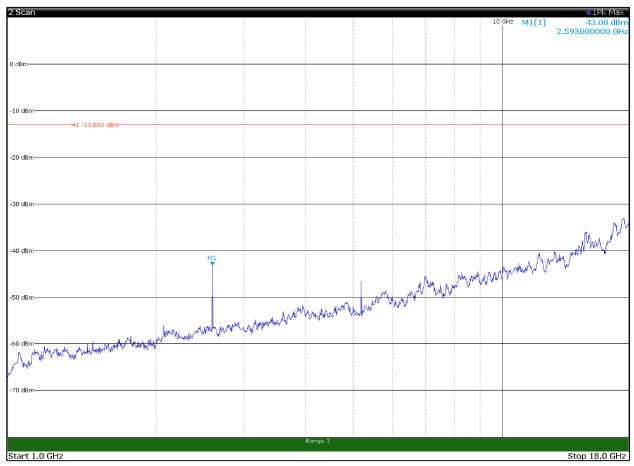




13:39:52 17.06.2019 Page 1/1

1GHz-18GHz - H Pol

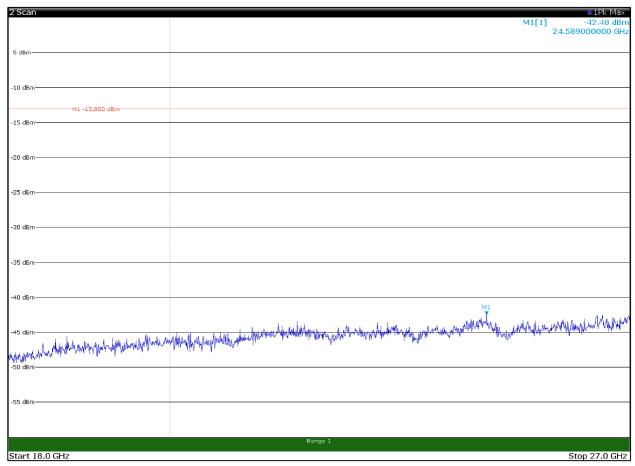




13:38:21 17.06.2019 Page 1/1

1GHz-18GHz - V Pol

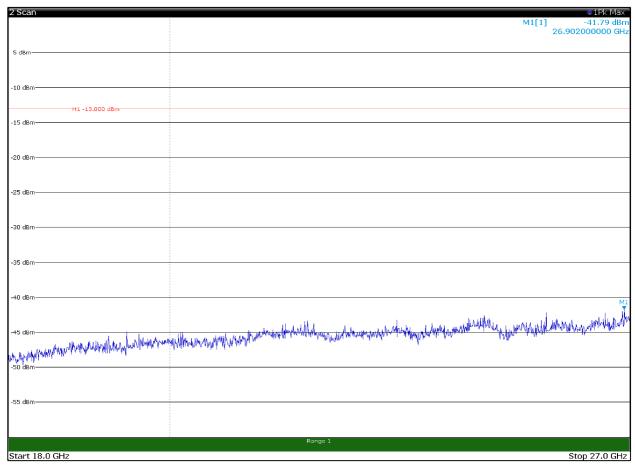




12:08:28 18:06:2019 Page 1/1

18GHz-27GHz - H Pol



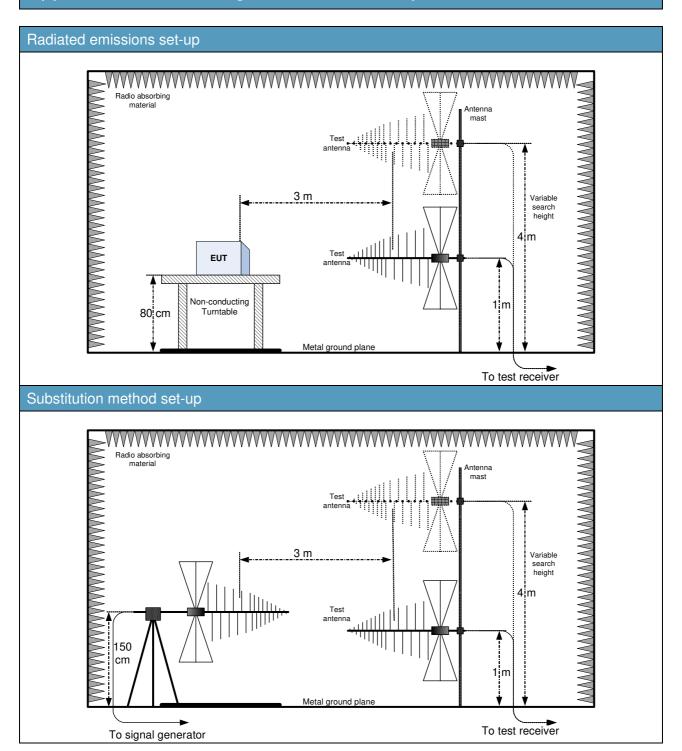


12:08:46 18:06:2019 Page 1/1

18GHz-27GHz - V Pol



# Appendix B: Block diagrams of test set-ups







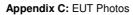
# Appendix C: EUT Photos

### Photo Set up



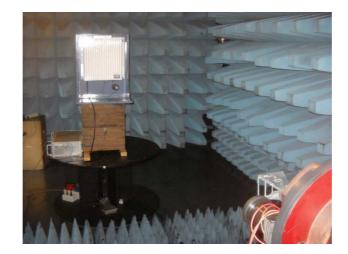








Product: TRM19HAWX2325AT





## Photo EUT











**END OF REPORT**