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CFR 47, PART 27, SUBPART C
(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWWV/AC-WS

Section 1. Summary of Test Results

Manufacturer **TEKO Telecom** 

Model No.: **TRU8A19AWWV/AC-WS**

Serial No.: **090379001**

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with CFR 47, Part 27, Subpart C.



New Submission



Production Unit



Class II Permissive Change



Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

**THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE
TEST SPECIFICATIONS HAVE BEEN MADE.**

See "Summary of Test Data".

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CFR 47, PART 27, SUBPART C
(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWWV/AC-WS

Summary Of Test Data

| NAME OF TEST | PARA. NO. | SPEC. | RESULT |
|---|-----------|----------------------|----------|
| RF Power Output | 27.50(d) | 1640 Watts | Complies |
| Occupied Bandwidth | 2.1049 | Input/Output | Complies |
| Spurious Emissions at Antenna Terminals | 27.53(h) | -13 dBm | Complies |
| Field Strength of Spurious Emissions | 27.53(h) | -13 dBm E.I.R.P. | Complies |
| Frequency Stability | 27.54 | Must stay in band | NA |

Footnotes For N/A's:

Frequency Stability testing was not performed since the E.U.T. does not contain modulation circuitry.

EQUIPMENT: TRU8A19AWWV/AC-WS**Section 2. General Equipment Specification**

| | | | | |
|---|------------------|--|---|--|
| Supply Voltage Input: | | 120 Vac | | |
| Frequency Bands: | Downlink: | 2110 to 2155 MHz | | |
| Frequency Bands: | Uplink: | 1710 to 1755 MHz | | |
| Type of Modulation and Designator: | | CDMA (F9W) <input checked="" type="checkbox"/> | GSM (GXW) <input type="checkbox"/> | NADC (DXW) <input type="checkbox"/> |
| | | W-CDMA (F9W) <input checked="" type="checkbox"/> | EDGE (G7W) <input type="checkbox"/> | |
| Output Impedance: | | 50 ohms | | |
| RF Output (Rated): | Downlink | $\frac{20}{43}$ W dBm | | |
| RF Output (Rated): | Uplink | $\frac{0.025}{4}$ W typical dBm typical | | |
| Gain: | | 48 dB | | |
| Downlink: | | 47 dB | | |
| | Uplink: | | | |
| Frequency Translation: | | F1-F1 <input type="checkbox"/> | F1-F2 <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> |
| Band Selection: | | Software <input type="checkbox"/> | Duplexer <input type="checkbox"/> | Fullband <input checked="" type="checkbox"/> |

EQUIPMENT: TRU8A19AWWV/AC-WS**Description of EUT**

The EUT is a very high power multi-operator optical Remote Unit. It is used in conjunction with a Master Unit in the optical distribution system.

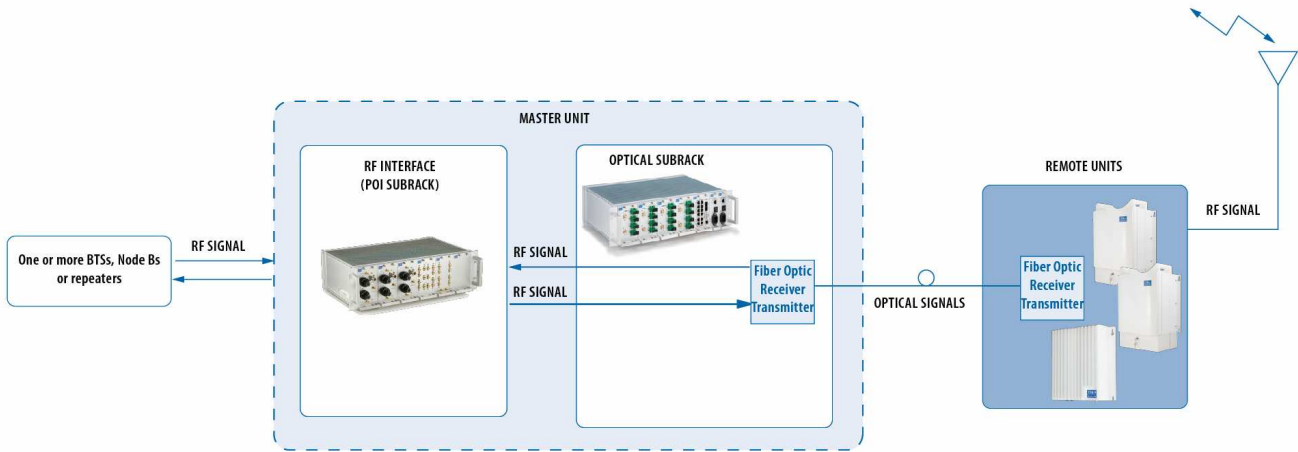
The EUT is a tri-band system; it is able to transport a wide frequency range simultaneously (AMPS, PCS and AWS bands). Single amplifier modules can be combined each other to obtain the following equipment:

| Commercial name | Description | |
|-----------------------------|-------------|--|
| REMOTE UNIT VERY HIGH POWER | | |
| TRUxxxxxcV/zz-kkkj-r | TRU | Teko Telecom Remote Unit |
| | xxxxx = | Operating band: 7S: SMR700 (UL: 698-716+776-787MHz) DL: 728-757MHz) 7P: Public Safety 700 (DL: 763-775MHz; UL: 793-805MHz) 8S: SMR800 (DL: 851-869MHz; UL: 806-824MHz) 8A: AMPS (DL: 869-894MHz; UL: 824-849MHz) 9S: SMR900 (DL: 935-941MHz; UL: 896-902MHz) 19: PCS1900 (DL: 1930-1995MHz; UL: 1850-1915MHz) AW: AWS2100 (DL: 2110-2155MHz; UL: 1710-1755MHz) <i>and combination of these</i> |
| | c = | RF Connector: W: wideband D: duplexed B: bi duplexed N: no duplexed S: single connector |
| | V = | Very high power |
| | zz = | Power supply: AC: 85-264Vac, 50-60Hz |

EQUIPMENT: **TRU8A19AWWV/AC-WS**

| | | |
|--|--------------|---|
| | kkk = | Laser version: Without option: NO WDM Thermocontrolled laser version: W21: $\lambda = 1560,61\text{nm}$ W23: $\lambda = 1558,98\text{nm}$ W25: $\lambda = 1557,36\text{nm}$ W27: $\lambda = 1555,75\text{nm}$ W29: $\lambda = 1554,13\text{nm}$ W31: $\lambda = 1552,52\text{nm}$ W: $\lambda = 1550,92\text{nm}$ W35: $\lambda = 1549,32\text{nm}$ W37: $\lambda = 1547,72\text{nm}$ No thermocontrolled laser version: M11: $\lambda = 1470 \pm 3 \text{ nm}$ M12: $\lambda = 1490 \pm 3 \text{ nm}$ M13: $\lambda = 1510 \pm 3 \text{ nm}$ M14: $\lambda = 1530 \pm 3 \text{ nm}$ W: $\lambda = 1550 \pm 3 \text{ nm}$ M16: $\lambda = 1570 \pm 3 \text{ nm}$ M17: $\lambda = 1590 \pm 3 \text{ nm}$ M18: $\lambda = 1610 \pm 3 \text{ nm}$ |
| | j = | Optical connector: S: SC-APC E: E-2000 |
| | r = | Redundancy: Without option: NO redundancy 1: Power Supply 2: HPA 3: Optical Module 4: Power Supply + HPA 5: Power Supply + Optical Module 6: HPA + Optical Module 7: Power Supply + Optical Module + HPA |

System Diagram



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CFR 47, PART 27, SUBPART C
(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWV/AC-WS

Section 3. RF Power Output

| | |
|-------------------------------|-------------------------|
| NAME OF TEST: RF Power Output | PARA. NO.: 27.50 |
| TESTED BY: G. Curioni | DATE: 23 September 2009 |

Test Results: Complies.

Measurement Data:

| Direction | Modulation | Output per Channel (dBm) | Output per Channel Power (W) |
|-----------|------------|--------------------------|------------------------------|
| Uplink | CDMA | 4,29 | 0.0027 |
| Downlink | CDMA | 43,48 | 22 |
| Uplink | W-CDMA | 4,46 | 0.0028 |
| Downlink | W-CDMA | 43,58 | 22 |

Equipment Used: 1 – 2 – 3b – 4

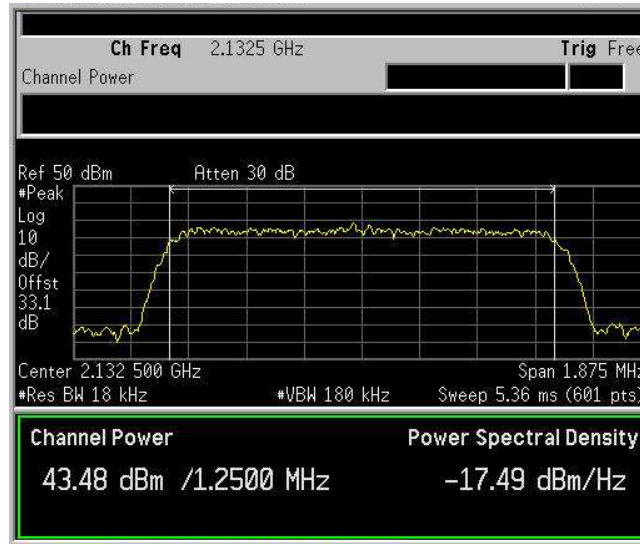
Measurement Uncertainty: +/- 1.9 dB

Temperature: 24 °C

Relative Humidity: 50 %

EQUIPMENT: **TRU8A19AWV/AC-WS**

RF Power Output D.L. mod. CDMA

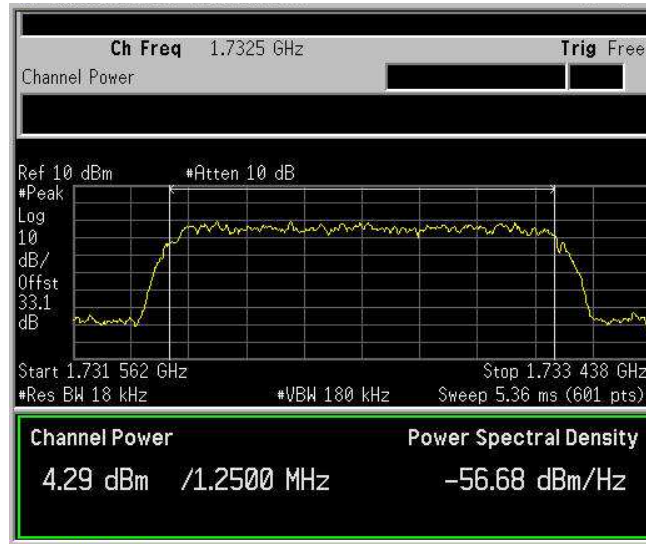


RF Power Output D.L. mod. WCDMA

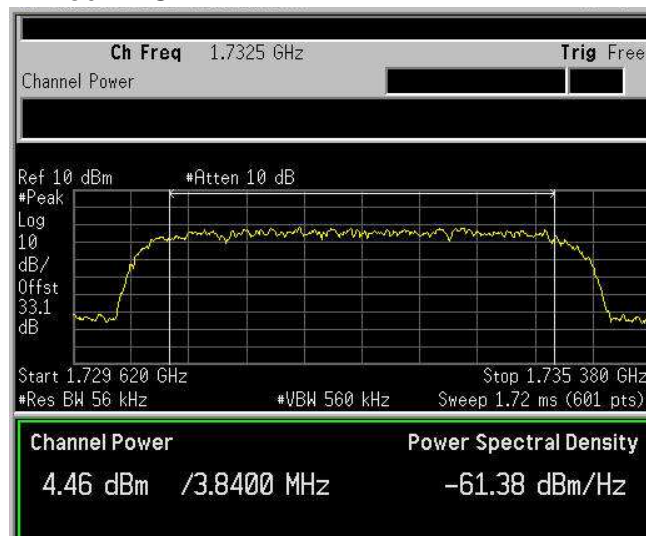


EQUIPMENT: **TRU8A19AWV/AC-WS**

RF Power Output U.L. mod. CDMA



RF Power Output U.L. mod. WCDMA



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Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWWV/AC-WS

Section 4. Occupied Bandwidth

| | |
|----------------------------------|-------------------------|
| NAME OF TEST: Occupied Bandwidth | PARA. NO.: 2.1049 |
| TESTED BY: G. Curioni | DATE: 23 September 2009 |

Test Results: Complies.

Test Data: See attached plot(s).

Equipment Used: 1 – 2 – 3b - 4

Measurement Uncertainty: 1X10⁻⁷

Temperature: 24 °C

Relative Humidity: 50 %

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(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

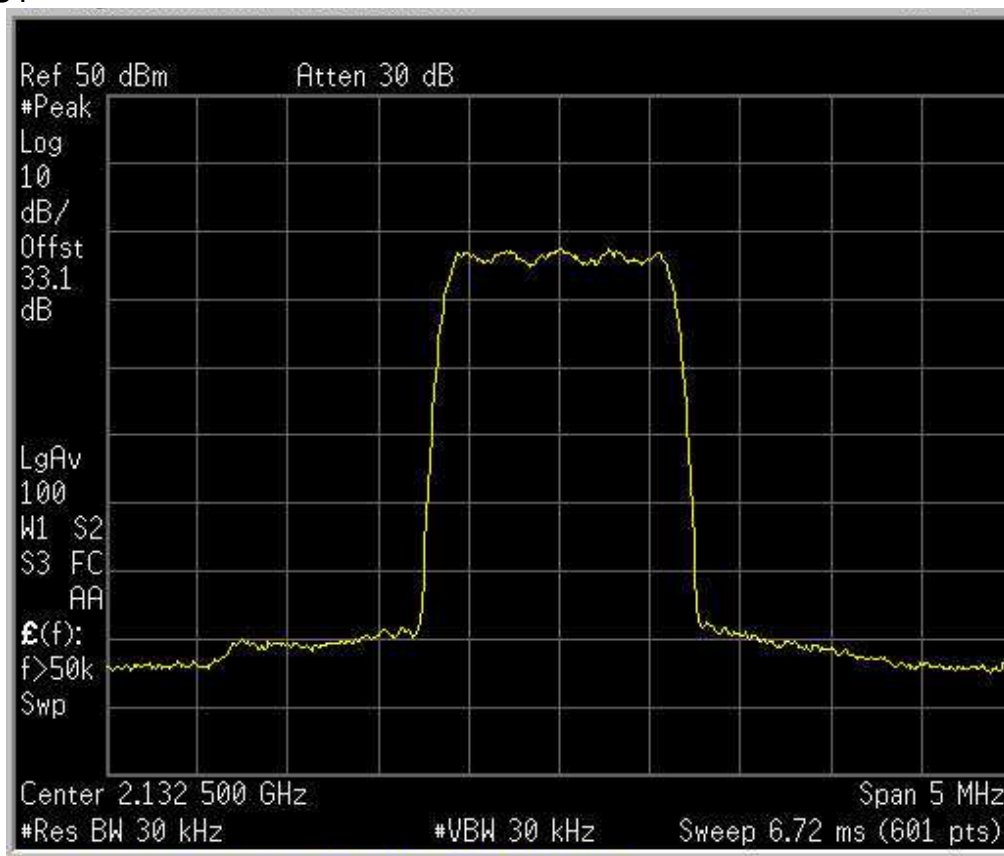
EQUIPMENT: TRU8A19AWWV/AC-WS

Test Data – Occupied Bandwidth

CDMA/EV-DO

Downlink

OUTPUT



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(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

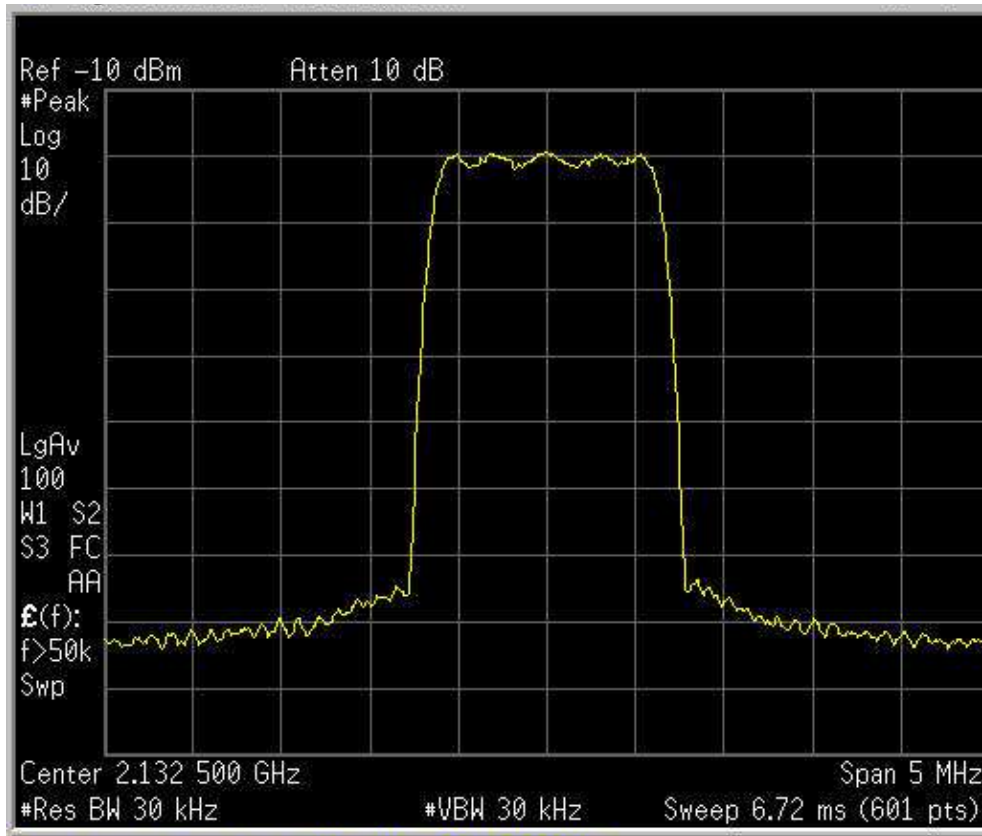
EQUIPMENT: TRU8A19AWWV/AC-WS

Test Data – Occupied Bandwidth

CDMA/EV-DO

Downlink

INPUT



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CFR 47, PART 27, SUBPART C
(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

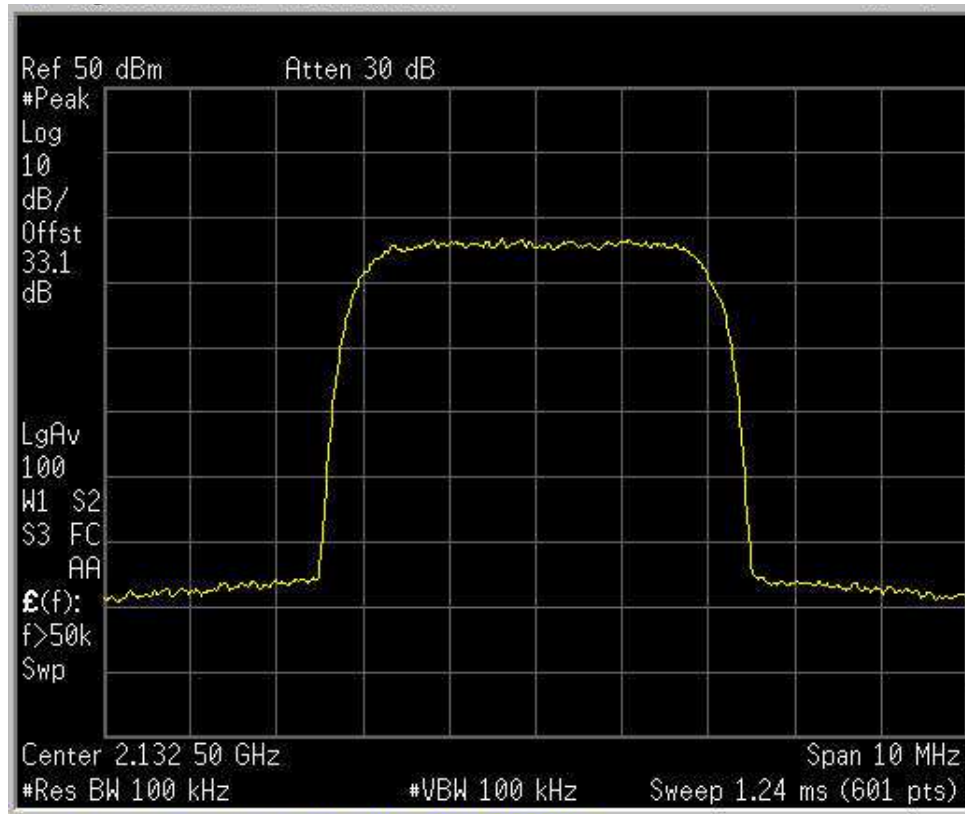
EQUIPMENT: TRU8A19AWV/AC-WS

Test Data – Occupied Bandwidth

WCDMA/UMTS

Downlink

OUTPUT



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CFR 47, PART 27, SUBPART C
(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

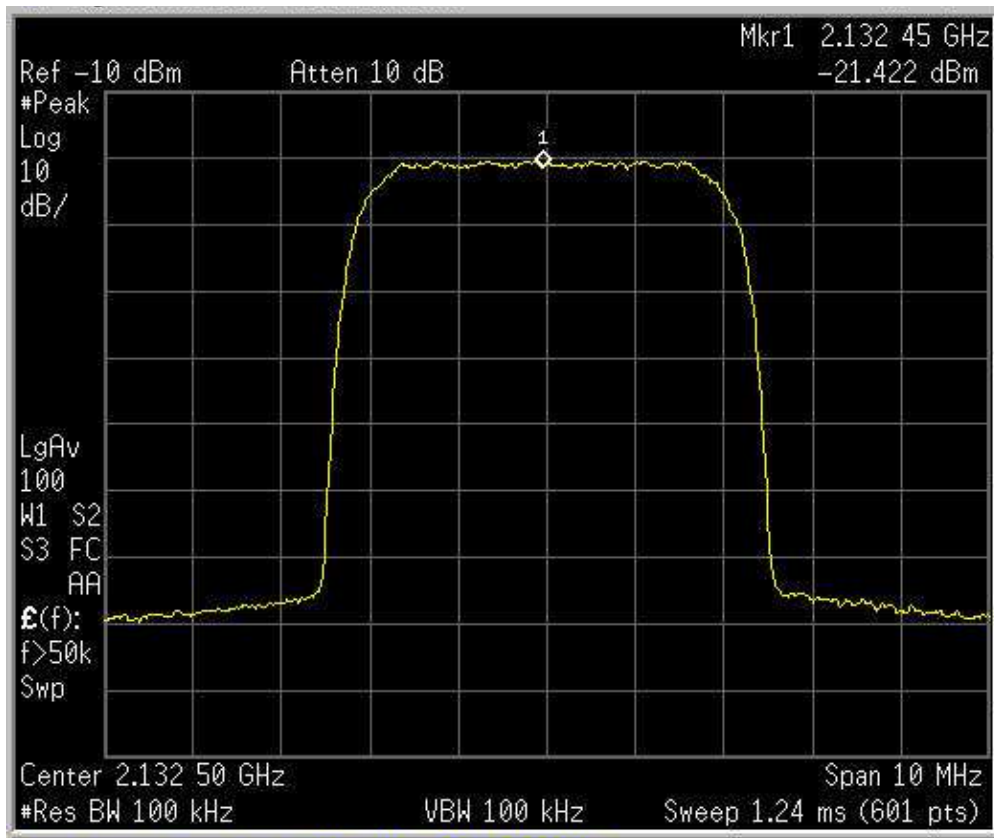
EQUIPMENT: TRU8A19AWV/AC-WS

Test Data – Occupied Bandwidth

WCDMA/UMTS

Downlink

INPUT



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CFR 47, PART 27, SUBPART C
(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

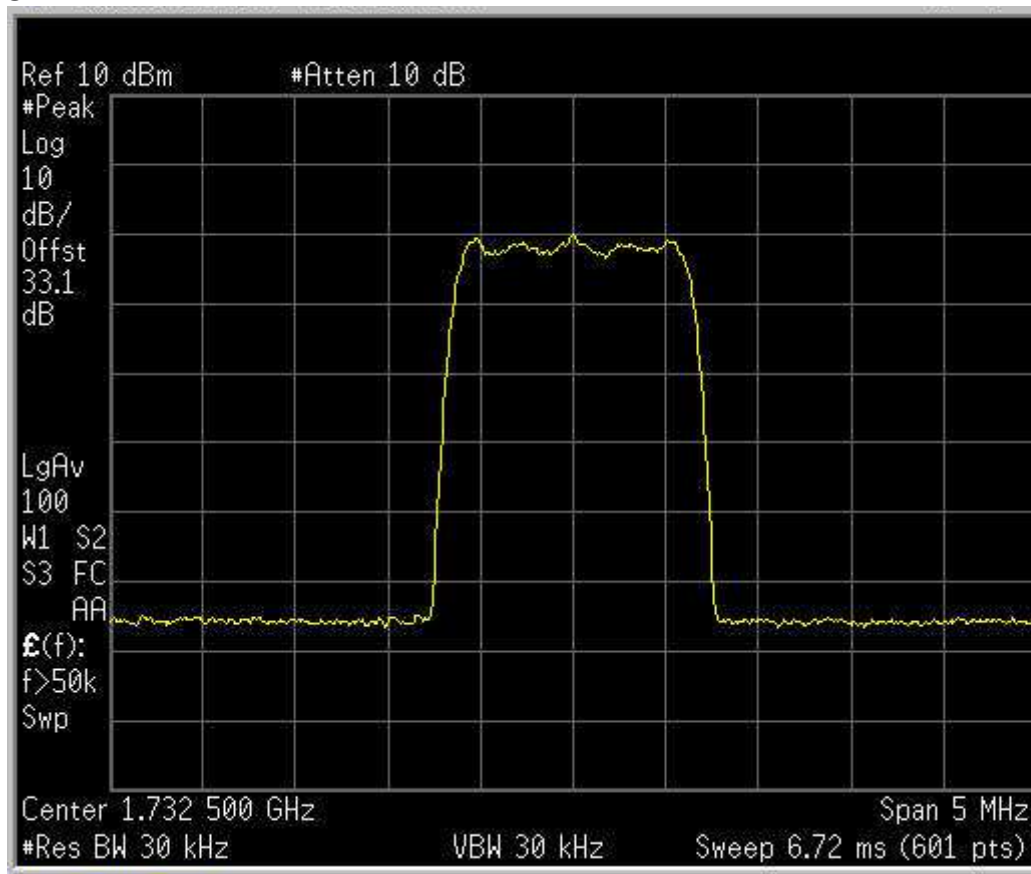
EQUIPMENT: TRU8A19AWV/AC-WS

Test Data – Occupied Bandwidth

CDMA/EV-DO

Uplink

OUTPUT



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CFR 47, PART 27, SUBPART C
(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

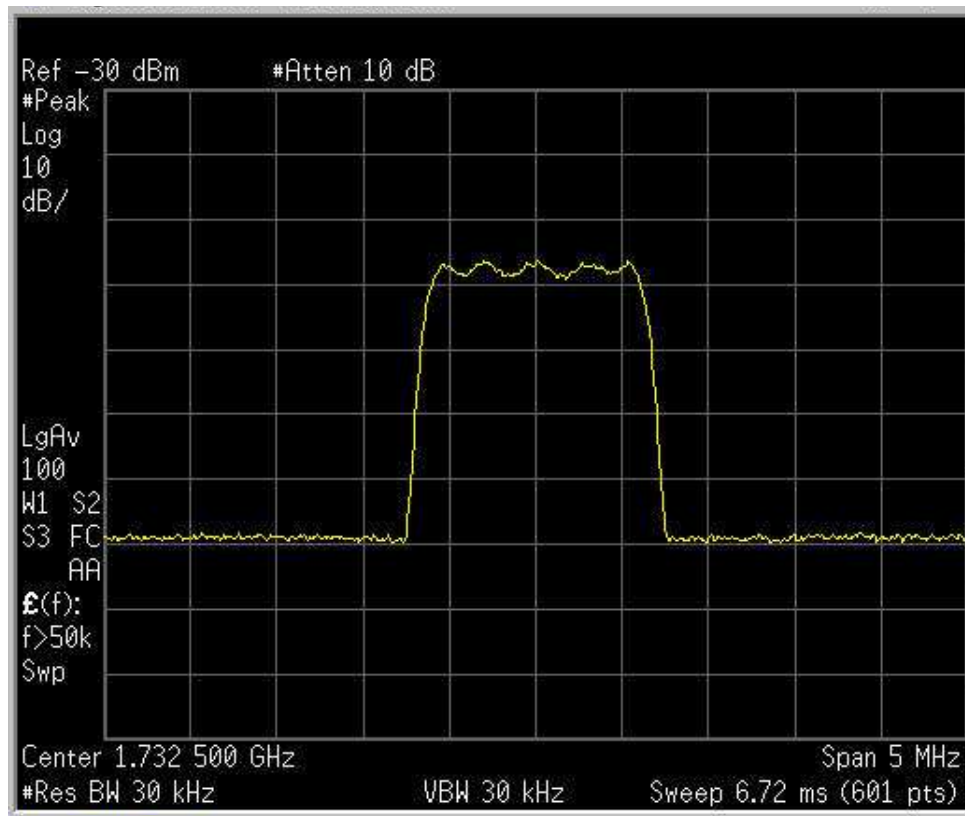
EQUIPMENT: TRU8A19AWV/AC-WS

Test Data – Occupied Bandwidth

CDMA/EV-DO

Uplink

INPUT



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(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

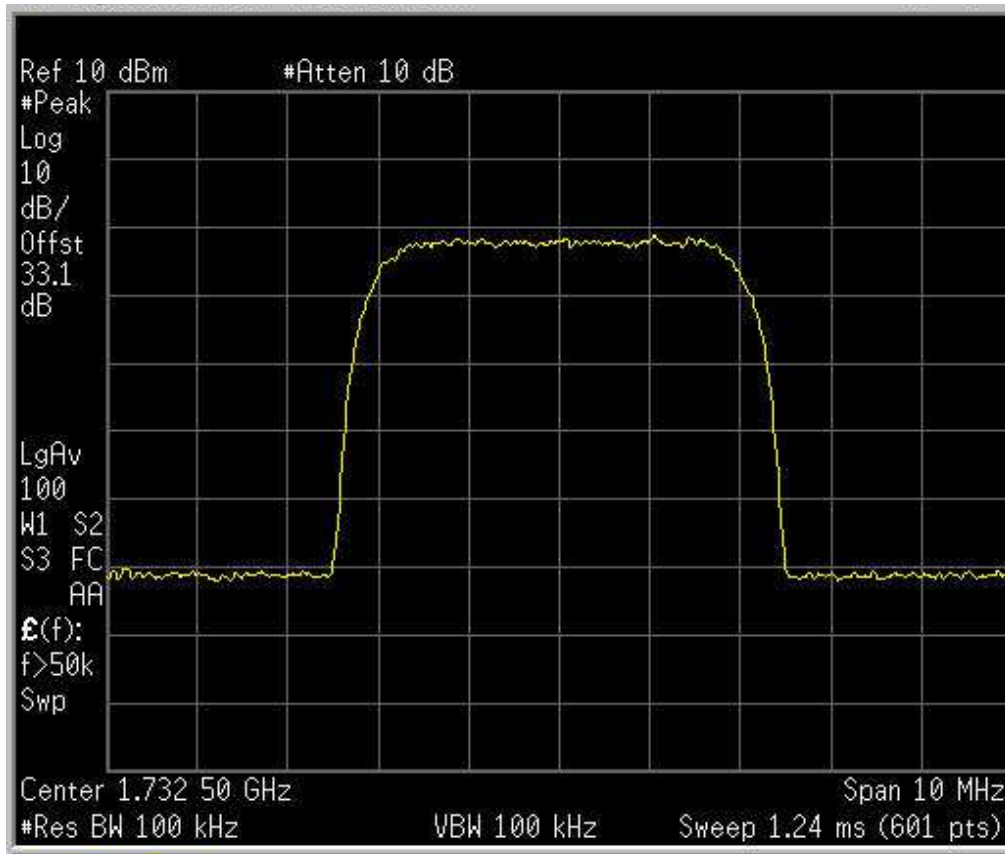
EQUIPMENT: TRU8A19AWWV/AC-WS

Test Data – Occupied Bandwidth

WCDMA/UMTS

Uplink

OUTPUT



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CFR 47, PART 27, SUBPART C
(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

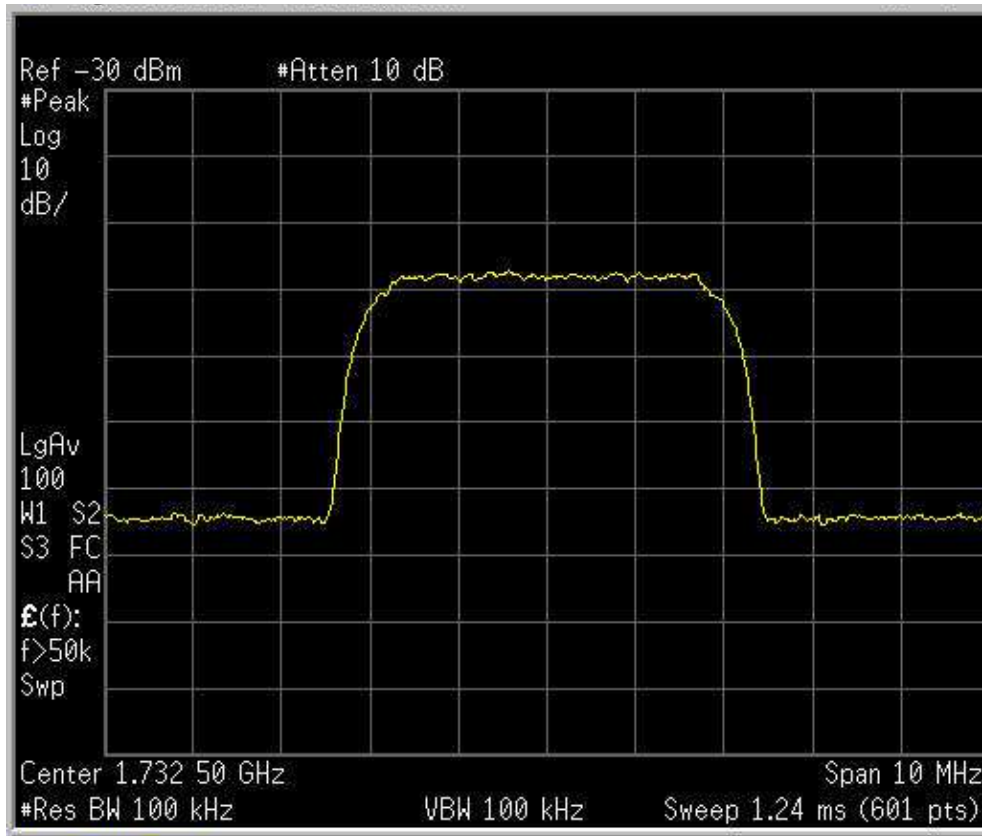
EQUIPMENT: TRU8A19AWV/AC-WS

Test Data – Occupied Bandwidth

WCDMA/UMTS

Uplink

INPUT



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CFR 47, PART 27, SUBPART C
(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWWV/AC-WS

Section 5. Spurious Emissions at Antenna Terminals

| | |
|--|-------------------------|
| NAME OF TEST: Spurious Emissions @ Antenna Terminals | PARA. NO.: 27.53 |
| TESTED BY: G. Curioni | DATE: 23 September 2009 |

Test Results: Complies.

Test Data: See attached plot(s).

Equipment Used: 1 – 2 – 3b - 4

Measurement Uncertainty: +/- 1.9 dB

Temperature: 24 °C

Relative Humidity: 50 %

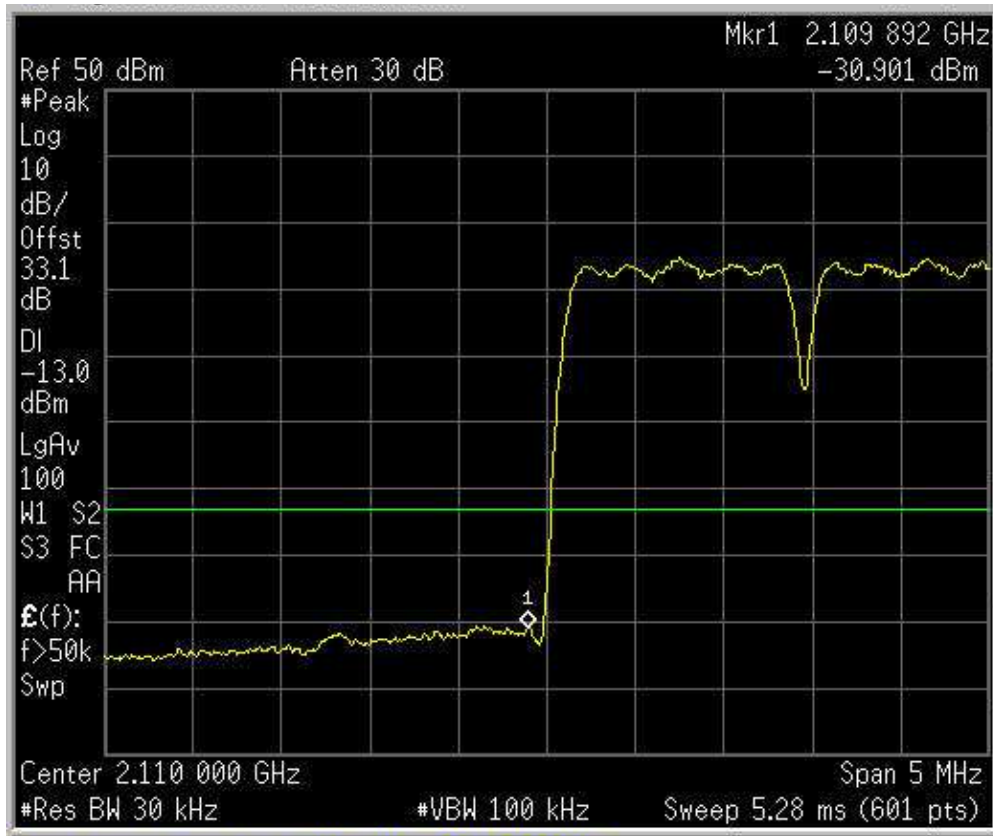
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(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWV/AC-WS

Test Data – Spurious Emissions at Antenna Terminals

CDMA/EV-DO
LOW BANDEDGE
Downlink



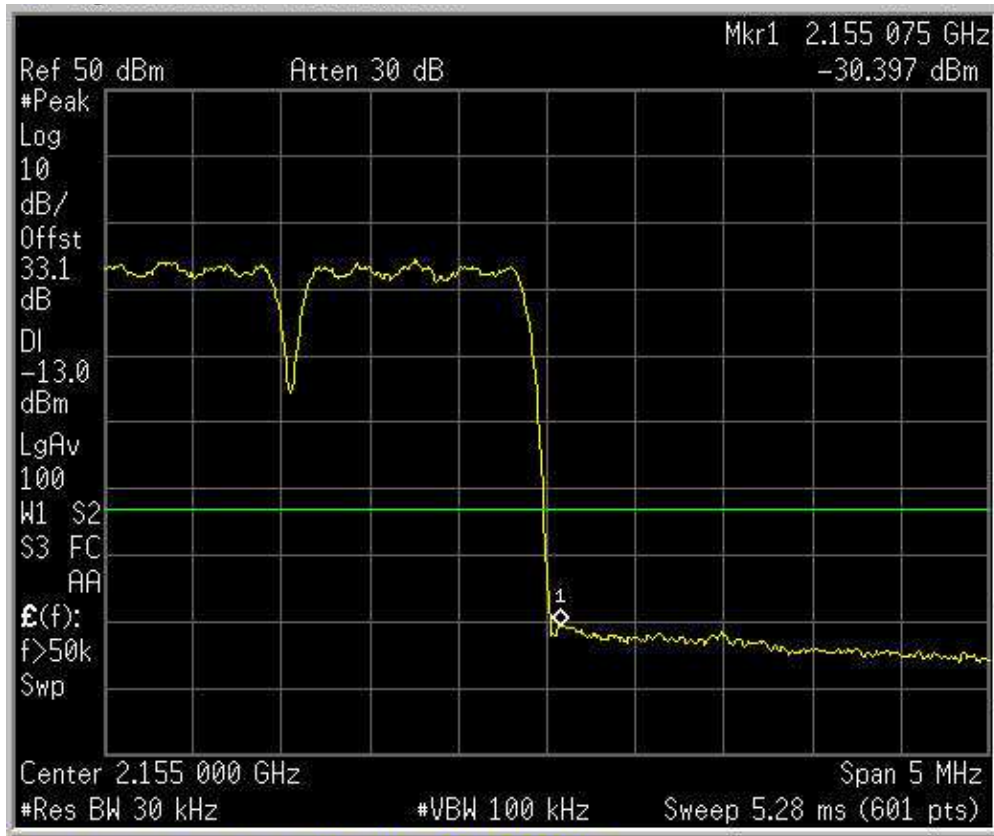
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(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWV/AC-WS

Test Data – Spurious Emissions at Antenna Terminals

CDMA/EV-DO
HIGH BAND EDGE
Downlink



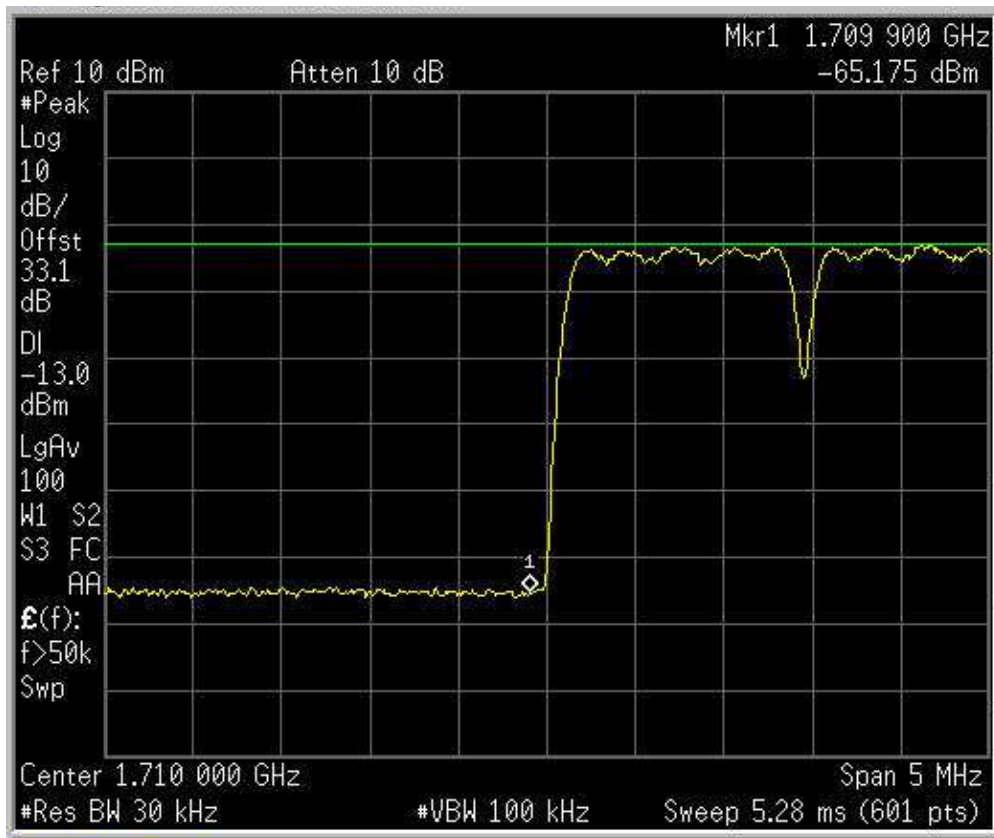
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CFR 47, PART 27, SUBPART C
(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWV/AC-WS

Test Data – Spurious Emissions at Antenna Terminals

CDMA/EV-DO
LOW BANDEDGE
Uplink



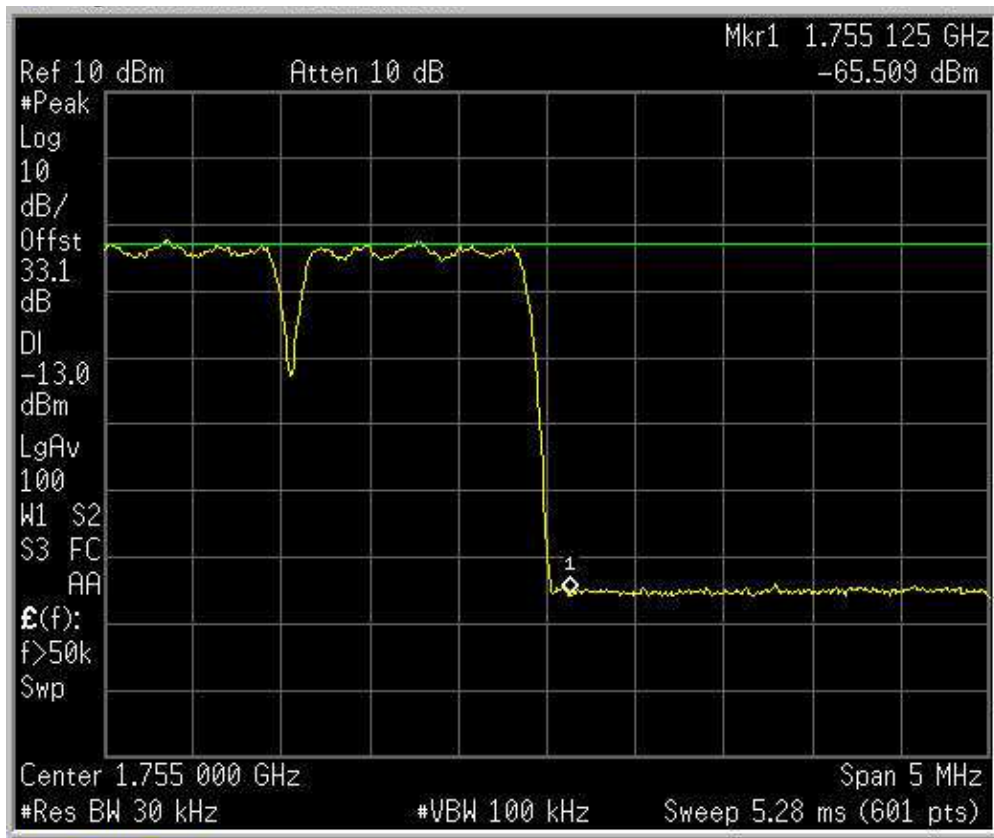
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(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWV/AC-WS

Test Data – Spurious Emissions at Antenna Terminals

CDMA/EV-DO
HIGH BAND EDGE
Uplink



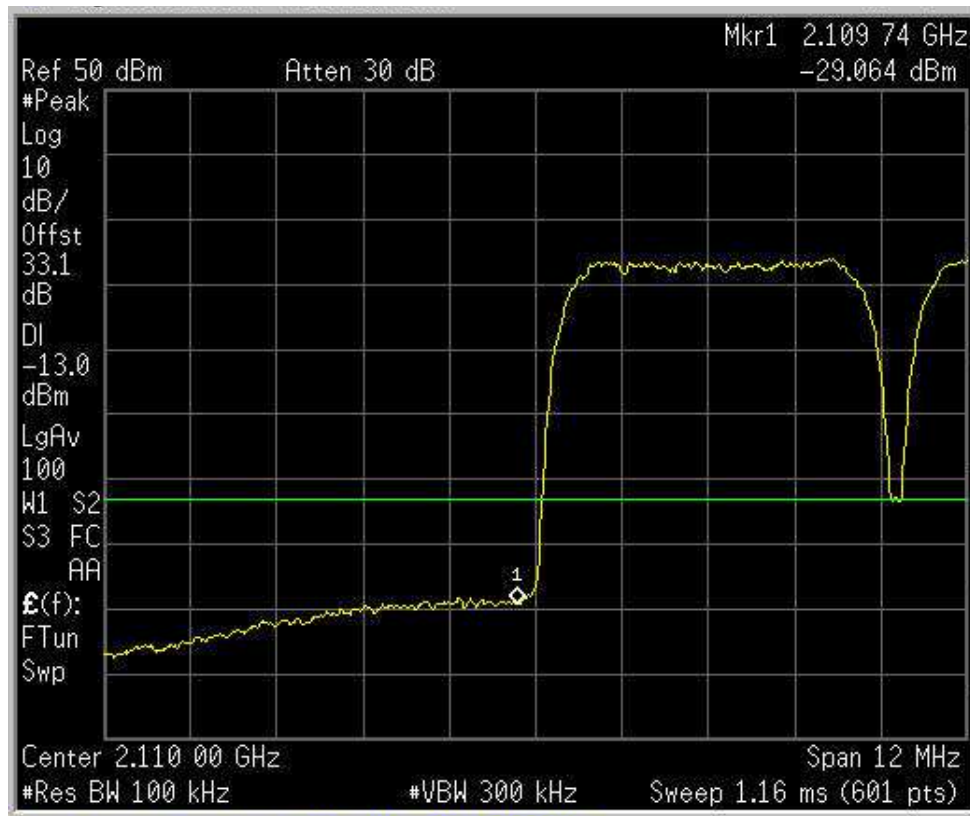
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(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWV/AC-WS

Test Data – Spurious Emissions at Antenna Terminals

WCDMA/UMTS
LOW BANDEDGE
Downlink



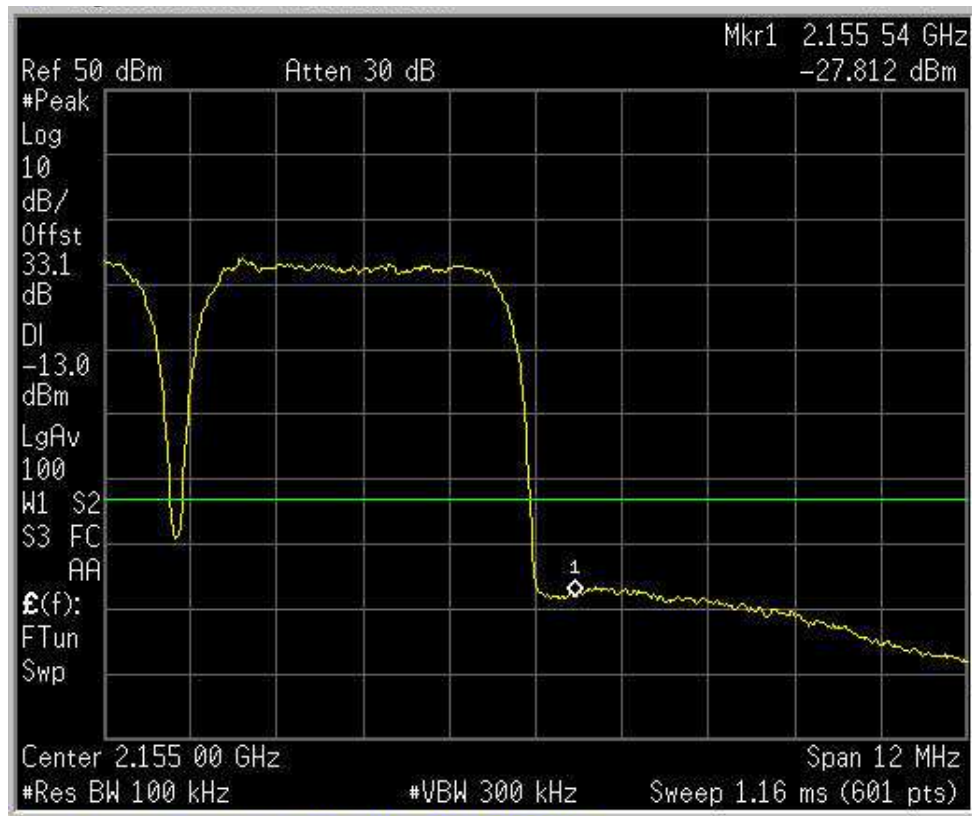
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(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWV/AC-WS

Test Data – Spurious Emissions at Antenna Terminals

WCDMA/UMTS
HIGH BAND EDGE
Downlink



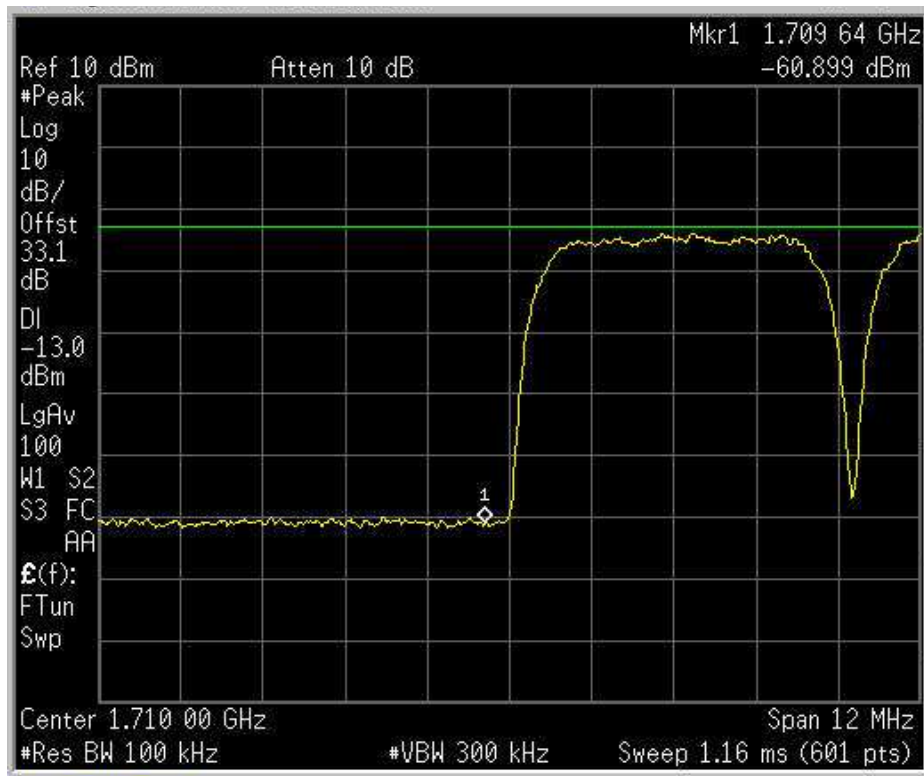
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Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWWV/AC-WS

Test Data – Spurious Emissions at Antenna Terminals

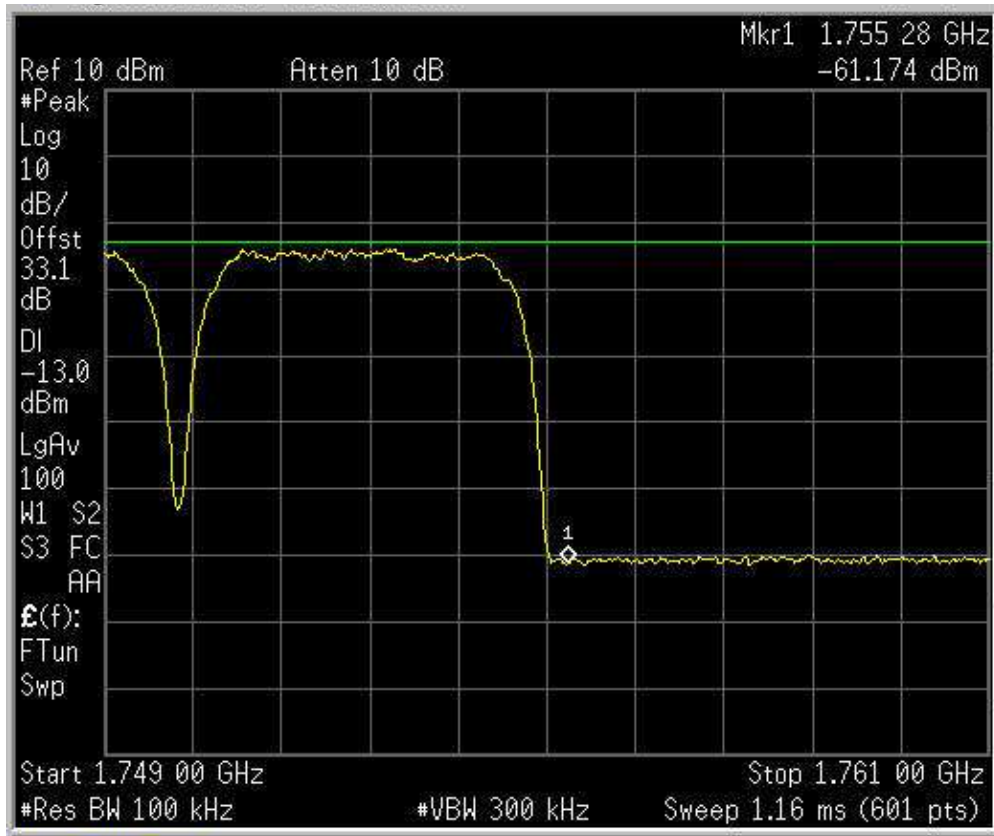
WCDMA/UMTS
LOW BANDEDGE
Uplink



EQUIPMENT: **TRU8A19AWV/AC-WS**

Test Data – Spurious Emissions at Antenna Terminals

WCDMA/UMTS
HIGH BAND EDGE
Uplink



EQUIPMENT: **TRU8A19AWV/AC-WS**

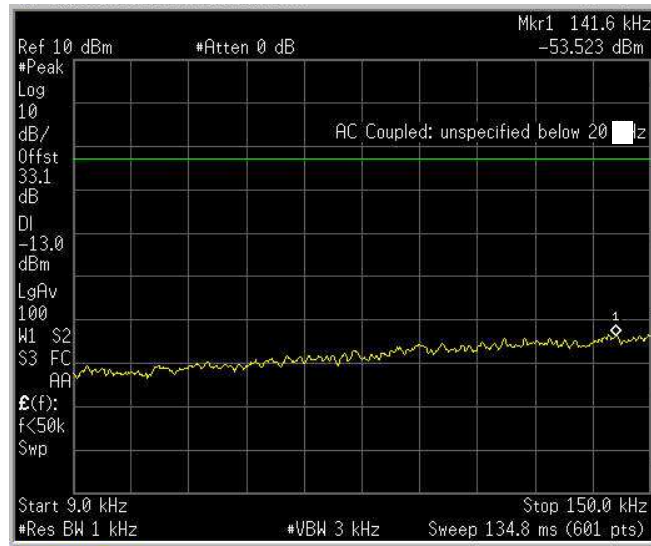
Test Data – Spurious Emissions at Antenna Terminals

CDMA/EV-DO

SPURS

Downlink

9 – 150 kHz

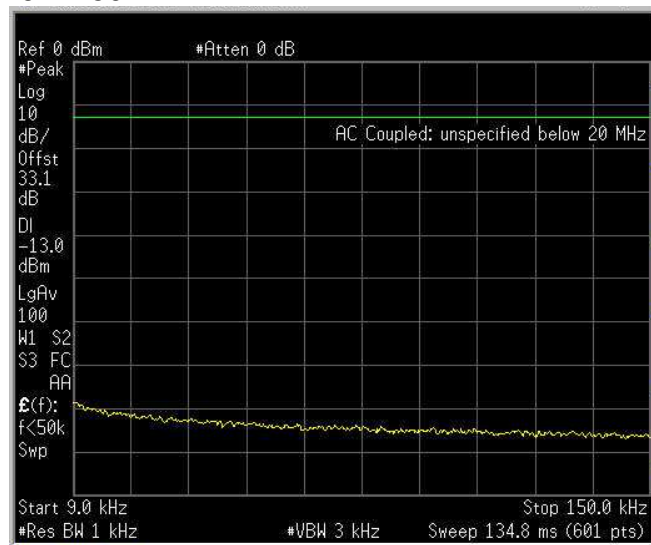


CDMA/EV-DO

SPURS

Uplink

9 – 150 kHz



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(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: **TRU8A19AWV/AC-WS**

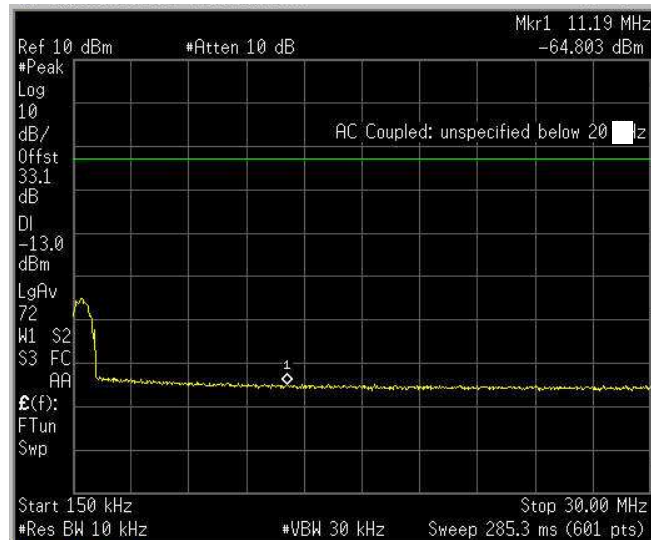
Test Data – Spurious Emissions at Antenna Terminals

CDMA/EV-DO

SPURS

Downlink

150 kHz – 30 MHz

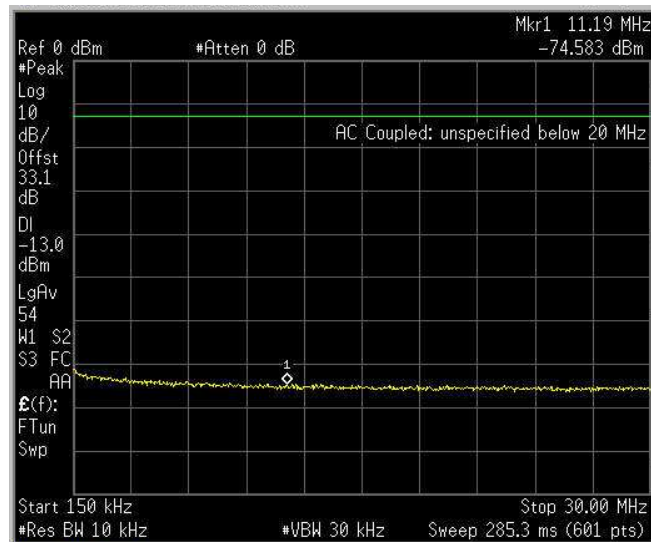


CDMA/EV-DO

SPURS

Uplink

150 kHz – 30 MHz



EQUIPMENT: **TRU8A19AWV/AC-WS**

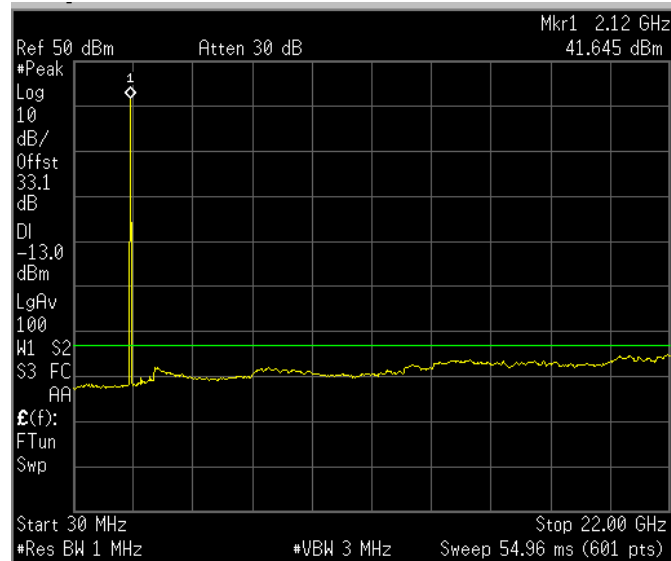
Test Data – Spurious Emissions at Antenna Terminals

CDMA/EV-DO

SPURS

Downlink

30 MHz – 22 GHz



CDMA/EV-DO

SPURS

Uplink

30 MHz – 18 GHz



EQUIPMENT: **TRU8A19AWV/AC-WS**

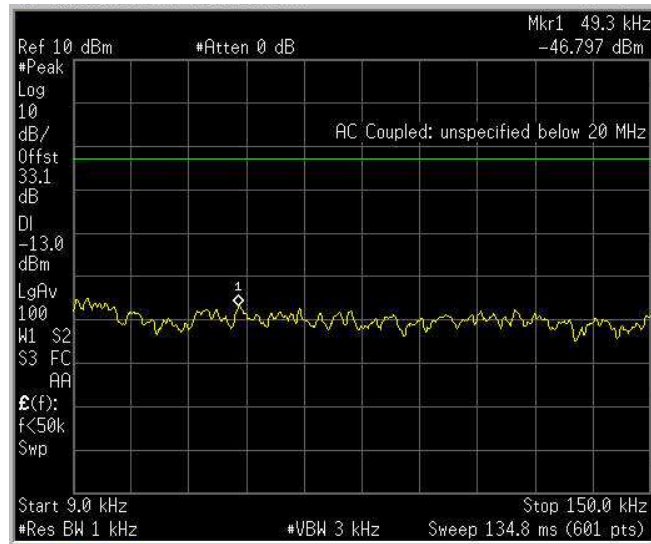
Test Data – Spurious Emissions at Antenna Terminals

WCDMA/UMTS

SPURS

Downlink

9 – 150 kHz

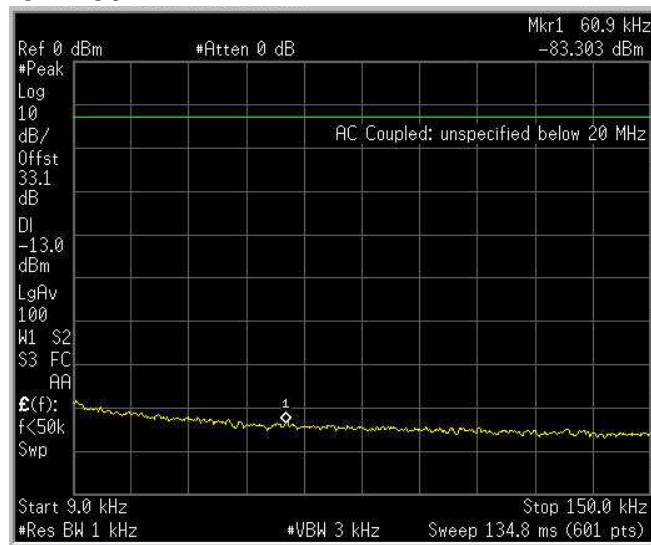


WCDMA/UMTS

SPURS

Uplink

9 – 150 kHz



EQUIPMENT: **TRU8A19AWV/AC-WS**

Test Data – Spurious Emissions at Antenna Terminals

WCDMA/UMTS

SPURS

Downlink

150 kHz – 30 MHz

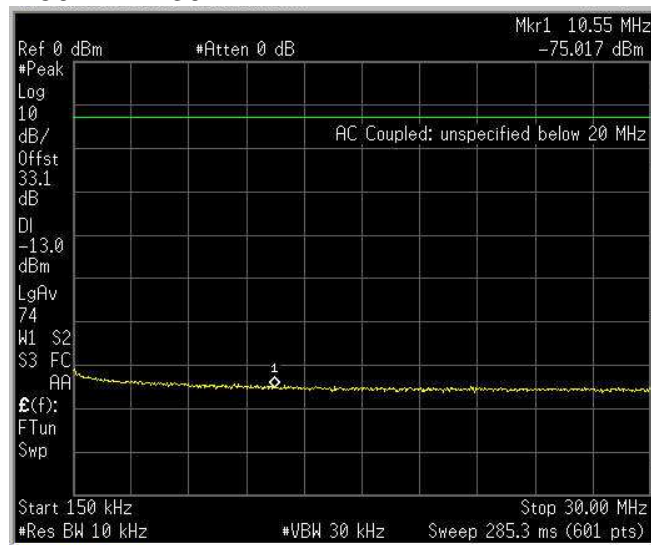


WCDMA/UMTS

SPURS

Uplink

150 kHz – 30 MHz



EQUIPMENT: **TRU8A19AWV/AC-WS**

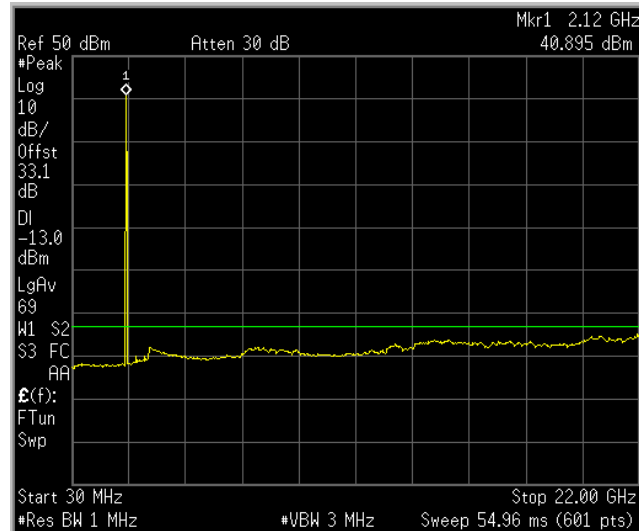
Test Data – Spurious Emissions at Antenna Terminals

WCDMA/UMTS

SPURS

Downlink

30 MHz – 22 GHz

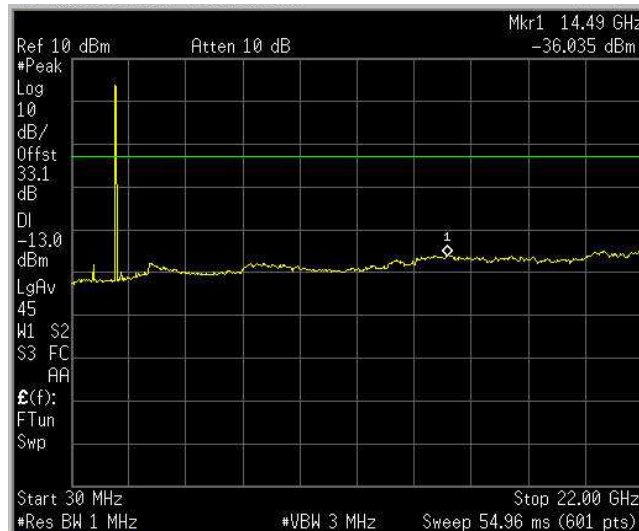


WCDMA/UMTS

SPURS

Uplink

30 MHz – 18 GHz



Section 6. Field Strength of Spurious

| | |
|--|-------------------------|
| NAME OF TEST: Field Strength of Spurious Emissions | PARA. NO.: 27.53 |
| TESTED BY: David Light | DATE: 23 September 2009 |

Test Results: Complies.

Test Data: The spectrum was searched from 30 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.

| AWS band - Master/remote 120/120 Vac | | | |
|--------------------------------------|-------------|---|---------|
| Frequency range | D.L. & U.L. | Result [dBm] Max. field strength pol. V/H | Limit |
| 30 – 1000 MHz | 78.6 MHz | -68.0 dBm H | -13 dBm |
| 1 – 22 GHz | | negligible | -13dBm |

| AWS band - Master/remote 48 Vdc/120 Vac | | | |
|---|---|---|----------------|
| Frequency range | U.L. | Result [dBm] Max. field strength pol. V/H | Limit |
| 30 – 1000 MHz | 33.9 MHz 35.8 MHz 92.2 MHz 86.4 MHz 150.8 MHz | -65.3 dBm V -56.1 dBm H -63.6 dBm H -64.6 dBm V -60.1 dBm V | Limit: -13 dbm |
| 1 – 22 GHz | | negligible | Limit: -13 dBm |

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CFR 47, PART 27, SUBPART C
(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWWV/AC-WS

Equipment Used: 5 – 6 – 7 – 8 – 9 -10 – 11 – 12 - 13

Measurement Uncertainty: +/-5 dB

Temperature: 24 °C

Relative Humidity: 50 %

RBW=VBW=100 kHz below 1000 MHz
RBW=VBW=1 MHz above 1000 MHz
Peak detector

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CFR 47, PART 27, SUBPART C
(Broadband AWS) Miscellaneous
Wireless Communication Services
PROJECT NO.: **131640-5**

EQUIPMENT: TRU8A19AWV/AC-WS

Section 7. Filter Frequency Response

| | |
|---|------------------------------|
| NAME OF TEST: Filter Frequency Response | PARA. NO.: 2-11-04/EAB/RF |
| TESTED BY: G. Curioni | DATE: 23 January 2010 |

Test Results: Complies.

Test Data: See attached plot(s).

Equipment Used: 3a

Measurement Uncertainty: +/-1,9 dB

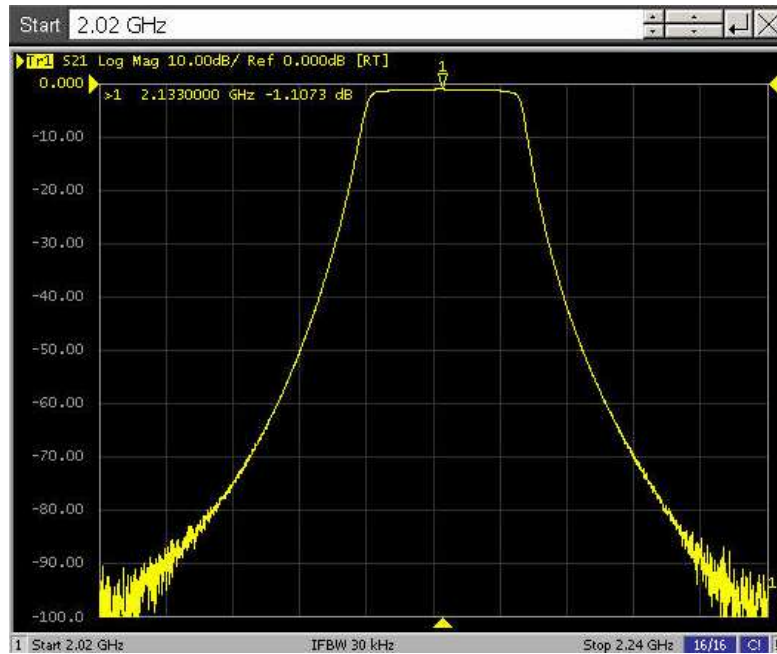
Temperature: 24 °C

Relative Humidity: 55 %

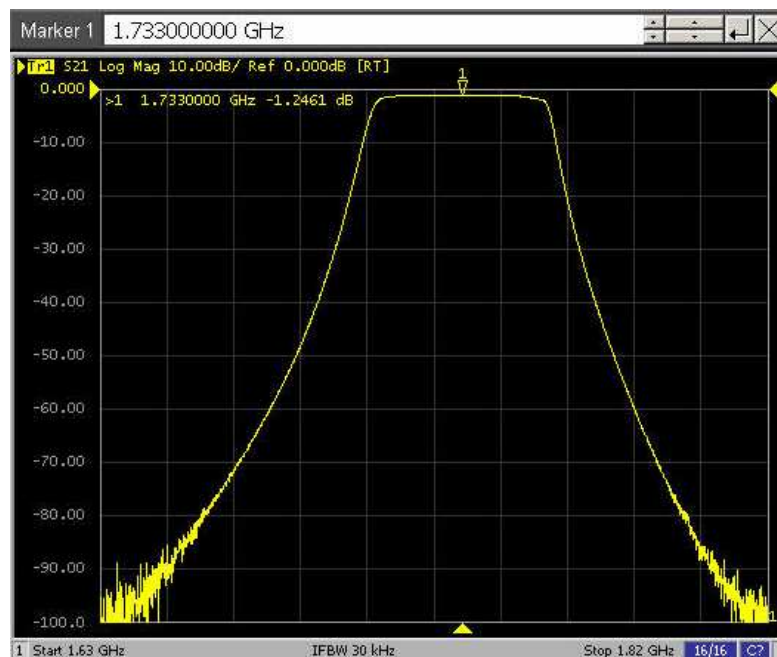
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Wireless Communication Services
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EQUIPMENT: **TRU8A19AWV/AC-WS**



Down-link



Up-link

EQUIPMENT: TRU8A19AWV/AC-WS

Section 8. Test Equipment List

| <i>Identification number</i> | <i>Description</i> | <i>Manufacturer model</i> | <i>s/n</i> | <i>Cal. Due</i> |
|------------------------------|--|---------------------------|------------|-----------------|
| 1 | Vector Signal Generator | Agilent H.P. E4438C | MY45094485 | July 2010 |
| 2 | Spectrum Analyzer | Agilent H.P. E4440A | US40420470 | December 2009 |
| 3a | Network Analyzer | Agilent H.P. E5062A | MY44101829 | November 2012 |
| 3b | Network Analyzer | Hewlett Packard 8753D | 3410A04850 | March 2010 |
| 4 | 2xcables+directional coupler+dummyload | | | |

Client's property

| | | | | |
|--|-----|------------------------|--------------------|--|
| Coupling Factor | AWS | UL 1732.5 DL 2132.5 | 33.1 dB 33.1 dB | |
| 2xcables+directional coupler+dummyload | | | | |

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EQUIPMENT: TRU8A19AWV/AC-WS

| <i>Identification number</i> | <i>Equipment</i> | <i>Manufacturer</i> | <i>Model</i> | <i>Serial N°</i> | <i>Cal. due</i> |
|------------------------------|------------------------------|---------------------|--------------------------|------------------|-----------------|
| 5 | Trilog Broadband Antenna | Schwarzbeck | VULB 9163 | VULB 9163-286 | 04/2010 |
| 6 | Bilog antenna | Schwarzbeck | STLP 9148-123 | 123 | 09/2011 |
| 7 | Broadband preamplifier | Schwarzbeck | BBV 9718 | 9718-137 | 05/2011 |
| 8 | Spectrum Analyzer 9kHz-40GHz | R&S | FSEK | 848255/005 | 09/2010 |
| 9 | Controller | EMCO | 2090 | 9511-1099 | NSC |
| 10 | Antenna Tower | EMCO | 2071-2 | 9601-1940 | NSC |
| 11 | Turning table Controller | EMCO | 1061-1.521 | 9012-1508 | NSC |
| 12 | Semi-anechoic chamber | Nemko | 3m semi-anechoic chamber | 70 | 04/2010 |
| 13 | Trilog Broadband Antenna | Siemens | 3m control room | 3 | NSC |

Property of Nemko Italy

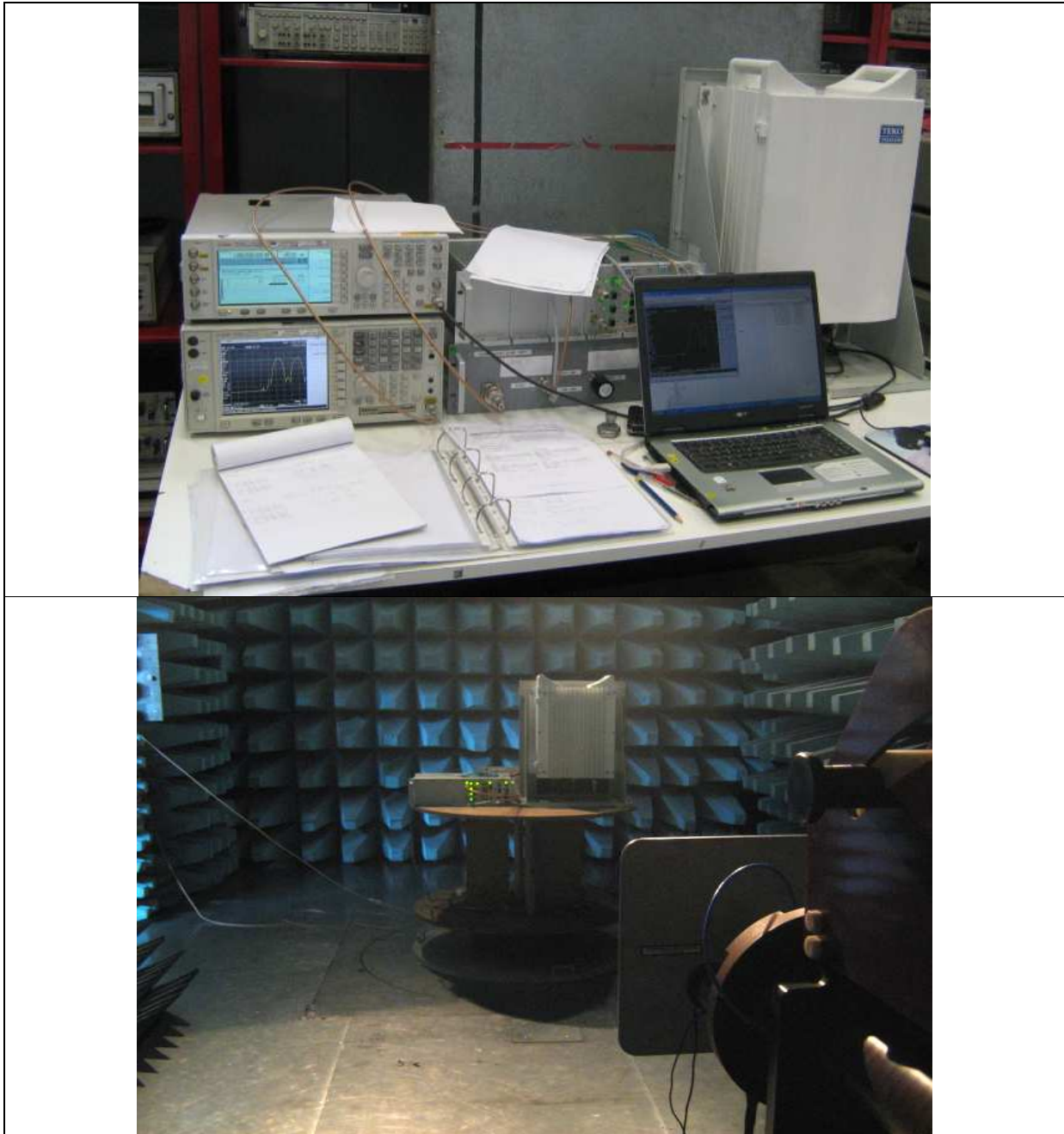
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EQUIPMENT: TRU8A19AWV/AC-WS

Section 9. PHOTOS

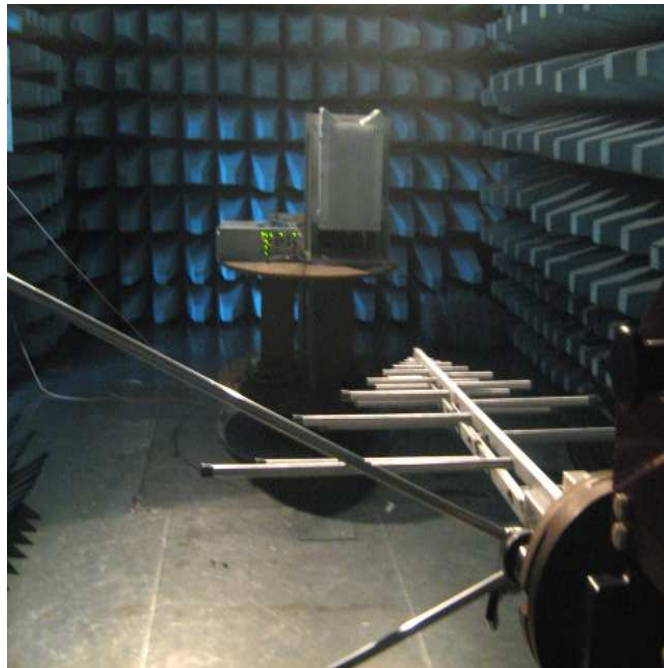
SETUP



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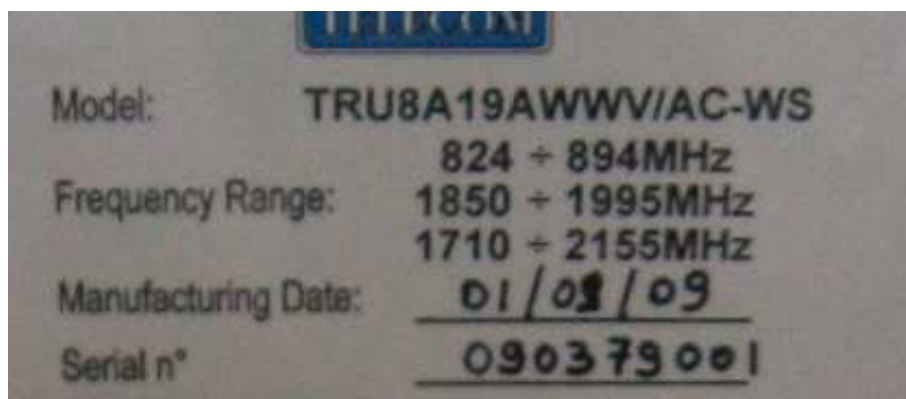


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REMOTE



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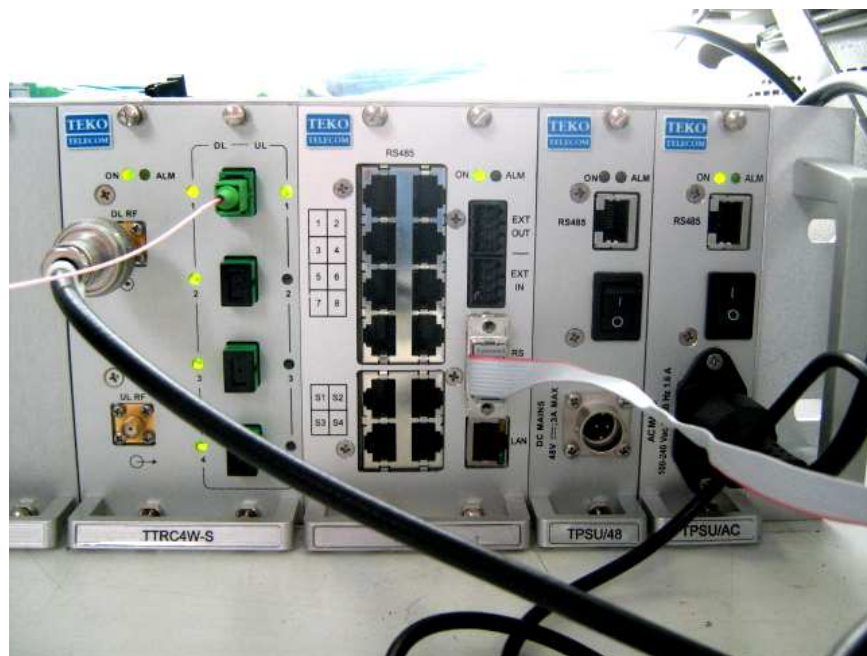
MASTER



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EQUIPMENT: TRU8A19AWWV/AC-WS

ANNEX A - TEST DETAILS

EQUIPMENT: TRU8A19AWV/AC-WS

NAME OF TEST: RF Power Output

PARA. NO.: 2.1046

Minimum Standard:

Para. No.27.53(d)(1). The power of each fixed or base station transmitting in the 2110-2155 MHz band and located in any county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, is limited to a peak equivalent isotropically radiated power (EIRP) of 3280 watts. The power of each fixed or base station transmitting in the 2110-2155 MHz band from any other location is limited to a peak EIRP of 1640 watts. A licensee operating a base or fixed station utilizing a power of more than 1640 watts EIRP must coordinate such operations in advance with all Government and non-Government satellite entities in the 2025-2110 MHz band. Operations above 1640 watts EIRP must also be coordinated in advance with the following licensees within 120 kilometers (75 miles) of the base or fixed station: all Broadband Radio Service (BRS) licensees authorized under Part 27 in the 2155-2160 MHz band and all AWS licensees in the 2110-2155 MHz band.

Method Of Measurement:

Detachable Antenna:

The channel power integrated across the carrier's bandwidth at antenna terminals is measured using a spectrum analyzer. Power output is measured with the maximum rated input level.

Integral Antenna:

The antenna substitution method is used to determine the equivalent radiated power at spurious frequencies. The spurious emissions are measured at a distance of 3 meters. The EUT is then replaced with a reference substitution antenna with a known gain referenced to an isotropic radiator. This antenna is fed with a signal at the spurious frequency. The level of the signal is adjusted to repeat the previously measured level. The resulting eirp is the signal level fed to the reference antenna corrected for gain referenced to an isotropic radiator.

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EQUIPMENT: TRU8A19AWWV/AC-WS

NAME OF TEST: Occupied Bandwidth

PARA. NO.: 2.1049

Minimum Standard: Input/Output

Method Of Measurement:

CDMA

Spectrum analyzer settings:

RBW=VBW=30 kHz

Span: 5 MHz

Sweep: Auto

GSM / EDGE

RBW=VBW= 3 kHz

Span: 1 MHz

Sweep: Auto

TDMA

RBW=VBW= 1 kHz

Span: 1 MHz

Sweep: Auto

W-CDMA

RBW=VBW= 50 kHz

Span: 10 MHz

Sweep: Auto

| | |
|---|-------------------------|
| NAME OF TEST: Spurious Emission at Antenna Terminals | PARA. NO.: 27.53 |
|---|-------------------------|

Minimum Standard: Para. No.27.53(h) For operations in the 1710-1755 MHz and 2110-2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10} (P)$ dB.

Method Of Measurement:

Spectrum analyzer settings:

CDMA

RBW: 1 MHz (> 1 MHz from Band Edge)
RBW: 30 kHz (< 1MHz from Band Edge)
VBW: \geq RBW
Sweep: Auto
Video Avg: 6 Sweeps

GSM / EDGE

RBW: 1 MHz (> 1 MHz from Band Edge)
RBW: 3 kHz (< 1 MHz from Band Edge)
VBW: \geq RBW
Sweep: Auto
Video Avg: Disabled

TDMA

RBW: 1 MHz (> 1 MHz from Band Edge)
RBW: 3 kHz (< 1 MHz from Band Edge)
VBW: \geq RBW
Sweep: Auto
Video Avg: Disabled

W-CDMA

RBW: 1 MHz (> 1 MHz from Band Edge)
RBW: 50 kHz (< 1MHz from Band Edge)
VBW: \geq RBW
Sweep: Auto
Video Avg: 6 Sweeps

To demonstrate compliance at band edges the frequency of the input signal is set to the lowest and highest assigned channel and the center frequency of the spectrum analyzer is set to the upper and lower edges of the appropriate frequency block.

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EQUIPMENT: TRU8A19AWWV/AC-WS

| | |
|---|-------------------------|
| NAME OF TEST: Field Strength of Spurious Radiation | PARA. NO.: 27.53 |
|---|-------------------------|

Minimum Standard:

Para. No.27.53(h) For operations in the 1710-1755 MHz and 2110-2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10} (P)$ dB.

Method of Measurement

TIA/EIA-603-1992

The antenna substitution method is used to determine the equivalent radiated power at spurious frequencies. The spurious emissions are measured at a distance of 3 meters. The EUT is then replaced with a reference substitution antenna with a known gain referenced to an isotropic radiator. This antenna is fed with a signal at the spurious frequency. The level of the signal is adjusted to repeat the previously measured level. The resulting eirp is the signal level fed to the reference antenna corrected for gain referenced to an isotropic radiator.

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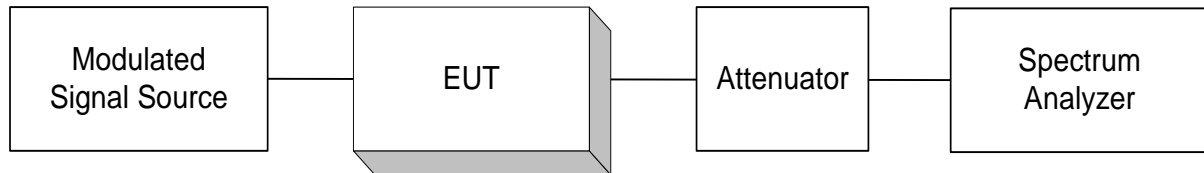
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EQUIPMENT: **TRU8A19AWWV/AC-WS**

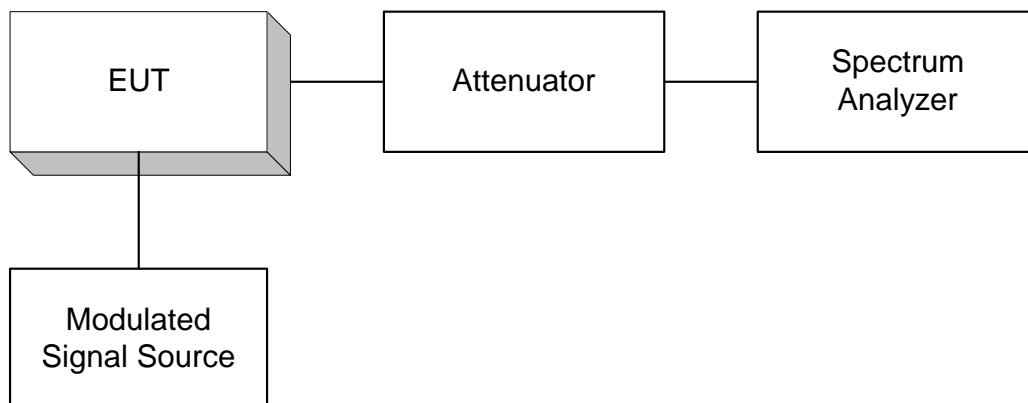
ANNEX B - TEST DIAGRAMS

EQUIPMENT: TRU8A19AWWV/AC-WS

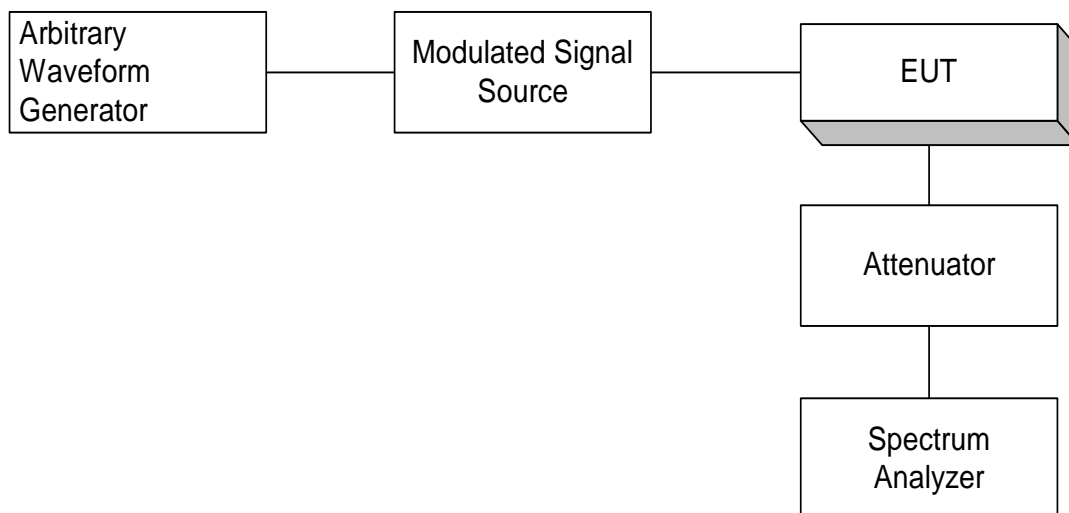
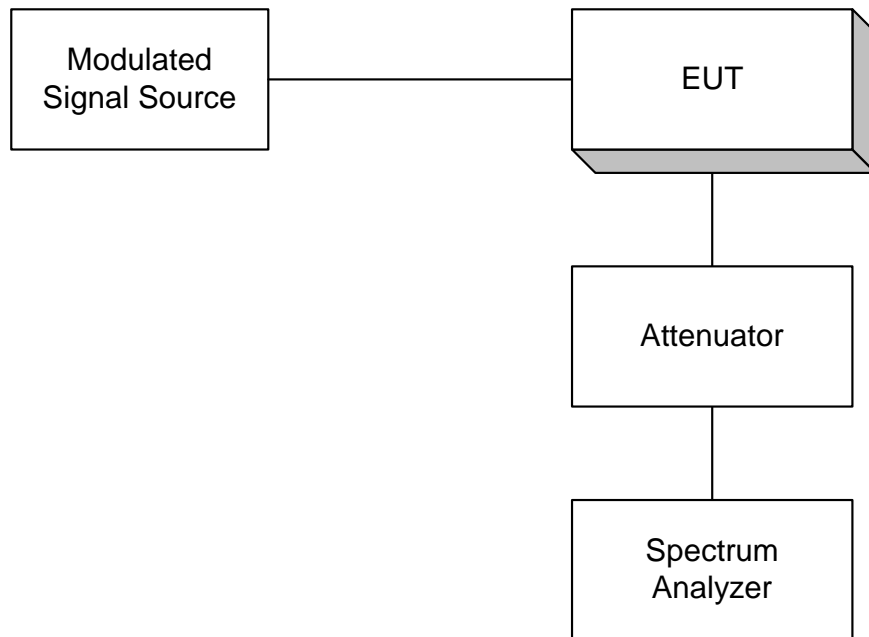
Para. No. 2.985 - R.F. Power Output



Para. No. 2.989 - Occupied Bandwidth

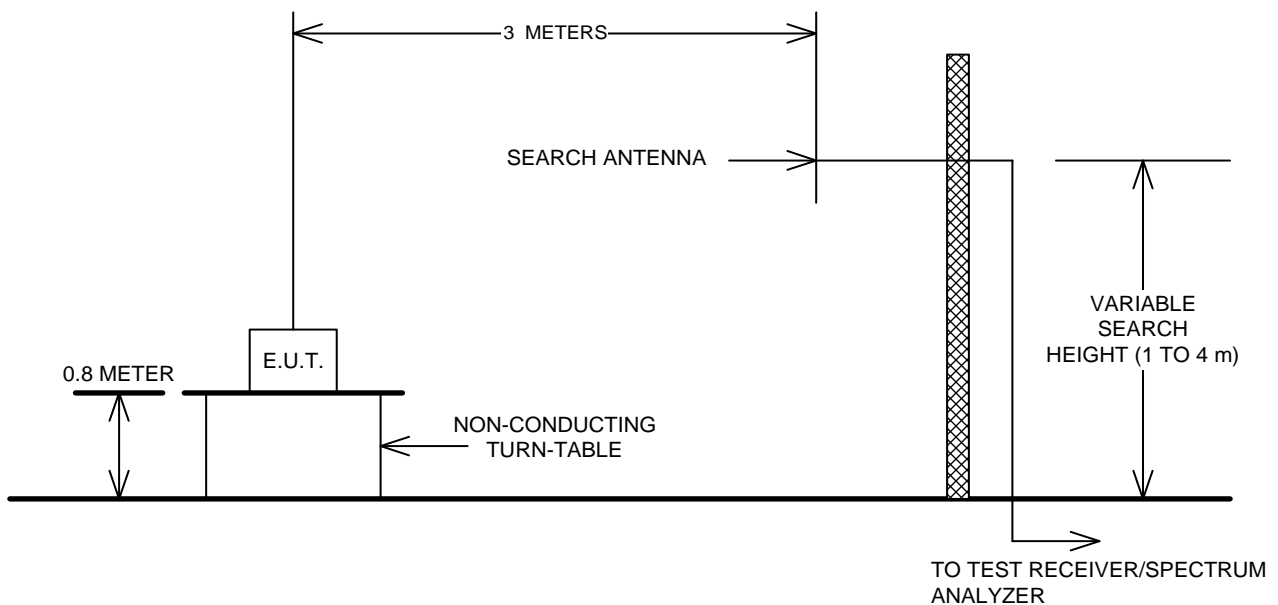


Para. No. 2.991 Spurious Emissions at Antenna Terminals



EQUIPMENT: TRU8A19AWWV/AC-WS

Para. No. 2.993 - Field Strength of Spurious Radiation



Para. No. 2.995 - Frequency Stability

