

## TEST REPORT

**Product** : Wireless Smart Audio Module  
**Trade mark** : Linkplay  
**Model/Type reference** : A98, A98M, A98M-12, A98M-22,  
A98MG, A98-12, A98-22, A98G  
**Serial Number** : N/A  
**Report Number** : EED32L00167704  
**FCC ID** : 2ANOG-A98XX  
**Date of Issue** : Aug. 09, 2019  
**Test Standards** : 47 CFR Part 15 Subpart E  
**Test result** : PASS

Prepared for:

**Linkplay Technology Inc**  
8F-8036, Qianren Building, No. 7, Yingcui Road,  
Jiangning District, Nanjing, China

Prepared by:

**Centre Testing International Group Co., Ltd.**  
Hongwei Industrial Zone, Bao'an 70 District,  
Shenzhen, Guangdong, China  
**TEL: +86-755-3368 3668**  
**FAX: +86-755-3368 3385**

Tested By:

Jay Zheng

Jay Zheng

Compiled by:

Alex Wu

Alex Wu

Reviewed by:

Ware Xin

Ware Xin

Approved by:

Kevin Yang

Kevin Yang

Date:

Aug. 09, 2019

Check No.: 3915522376



## 2 Version

| Version No. | Date       | Description |
|-------------|------------|-------------|
| 00          | 2019-08-09 | Original    |
|             |            |             |
|             |            |             |

### 3 Test Summary

| Test Item   | Test Requirement  | Test method              | Result |
|---|---|--------------------------|--------|
| Antenna Requirement   | 47 CFR Part 15 Subpart C<br>Section 15.203                    | ANSI C63.10-2013         | PASS   |
| AC Power Line Conducted Emission                                  | 47 CFR Part 15 Subpart E<br>Section 15.407 (b)(6)             | ANSI C63.10-2013         | PASS   |
| Conducted Output Power and transmit power control mechanism       | 47 CFR Part 15 Subpart E<br>Section 15.407 (a)(1)(2)(4)(h)(1) | ANSI C63.10-2013         | PASS   |
| 26dB emission bandwidth   | 47 CFR Part 15 Subpart E<br>Section 15.407 (a)(1)(2)          | ANSI C63.10-2013         | PASS   |
| Peak Power Spectral Density                                       | 47 CFR Part 15 Subpart E<br>Section 15.407 (a)(1)(2)(5)       | ANSI C63.10-2013         | PASS   |
| Peak power excursion  | 47 CFR Part 15 Subpart E<br>Section 15.407 (a)(6)             | ANSI C63.10-2013         | PASS   |
| Frequency stability   | 47 CFR Part 15 Subpart E<br>Section 15.407 (g)                | ANSI C63.10-2013         | PASS   |
| Dynamic Frequency Selection                                       | 47 CFR Part 15 Subpart E<br>Section 15.407 (h)                | KDB905462 D02            | PASS   |
| Operation in the absence of information to the transmit           | 47 CFR Part 15 Subpart E<br>Section 15.407 (c)                | 47 CFR Part 15 Subpart E | PASS   |
| Unwanted Emissions that fall Outside of the Restricted Bands      | 47 CFR Part 15 Subpart E<br>Section 15.407 (b)(1)(2)(3)(5)    | ANSI C63.10-2013         | PASS   |
| Unwanted Emissions in the Restricted Bands                        | 47 CFR Part 15 Subpart E<br>Section 15.407 (b)(6)(7)(8)       | ANSI C63.10-2013         | PASS   |
| Restricted bands around fundamental frequency (Radiated Emission) | 47 CFR Part 15 Subpart E<br>Section 15.407 (b)(6)(7)(8)       | ANSI C63.10-2013         | PASS   |

Remark:

The tested sample(s) and the sample information are provided by the client.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

CH: In this whole report CH means channel.

Volt: In this whole report Volt means Voltage.

Temp: In this whole report Temp means Temperature.

Humid: In this whole report Humid means humidity.

Press: In this whole report Press means Pressure.

N/A: In this whole report not application

Model No.: A98, A98M, A98M-12, A98M-22, A98MG, A98-12, A98-22, A98G

Only the model A98 was tested, The difference is that ROM and RAM are different in size or customer.

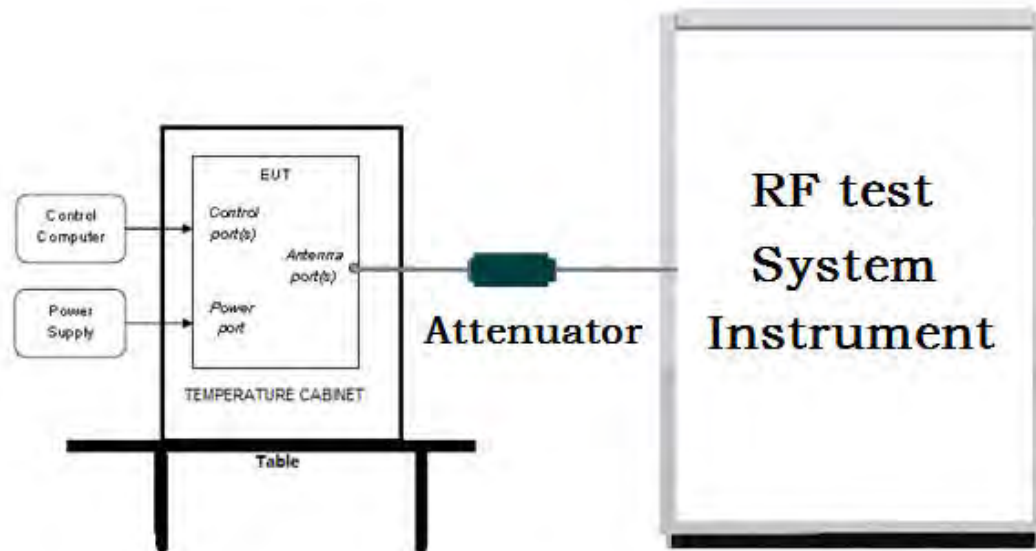
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## 5 Test Requirement

### 5.1 Test setup

#### 5.1.1 For Conducted test setup



#### 5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

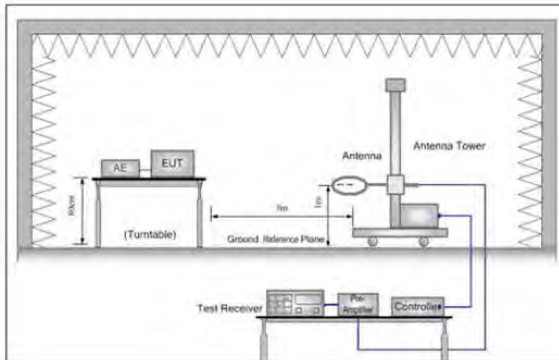


Figure 1. Below 30MHz

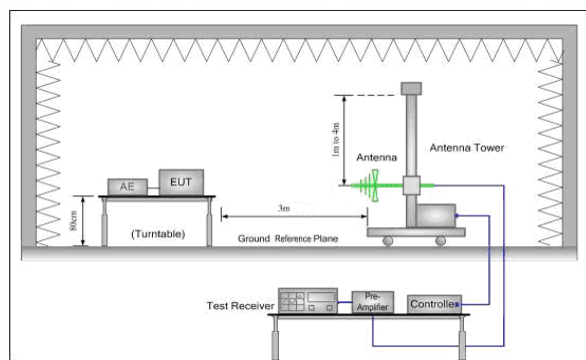


Figure 2. 30MHz to 1GHz

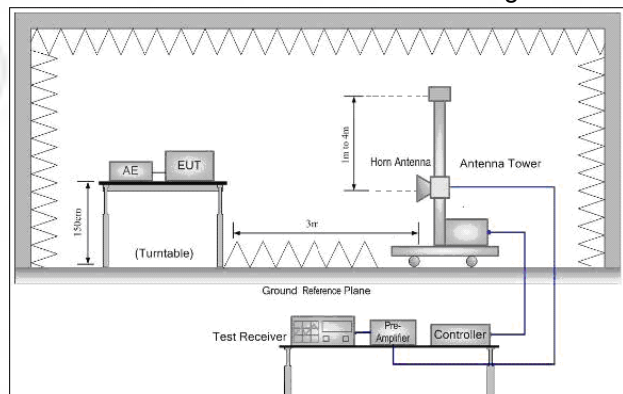
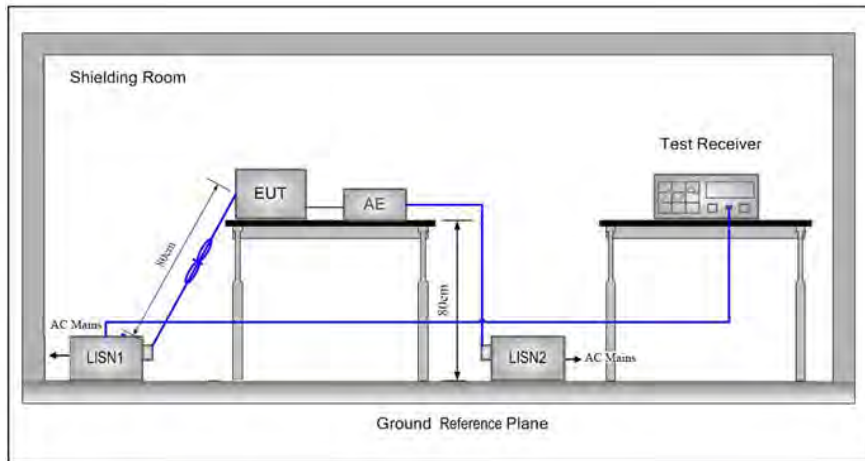


Figure 3. Above 1GHz

### 5.1.3 For Conducted Emissions test setup Conducted Emissions setup



## 5.2 Test Environment

| Operating Environment: |          |
|------------------------|----------|
| Temperature:           | 25.0 °C  |
| Humidity:              | 57 % RH  |
| Atmospheric Pressure:  | 1010mbar |

### 5.3 Test Condition

#### Test channel:

| Test Mode          | Tx/Rx             | RF Channel  |            |             |
|--------------------|-------------------|-------------|------------|-------------|
|                    |                   | Low(L)      | Middle(cm) | High(H)     |
| 802.11a/n/ac(HT20) | 5150MHz ~5250 MHz | Channel 36  | Channel 44 | Channel 48  |
|                    |                   | 5180MHz     | 5220MHz    | 5240MHz     |
| 802.11a/n/ac(HT20) | 5250MHz ~5350 MHz | Channel 52  | Channel 60 | Channel 64  |
|                    |                   | 5260MHz     | 5300MHz    | 5320MHz     |
| 802.11a/n/ac(HT20) | 5470MHz ~5600 MHz | Channel 100 | Channel108 | Channel116  |
|                    |                   | 5500MHz     | 5600MHz    | 5580MHz     |
| 802.11a/n/ac(HT20) | 5650MHz ~5725 MHz | Channel 132 | Channel136 | Channel140  |
|                    |                   | 5660MHz     | 5680MHz    | 5700MHz     |
| 802.11a/n/ac(HT20) | 5725MHz ~5850 MHz | Channel 149 | Channel157 | Channel165  |
|                    |                   | 5745MHz     | 5785MHz    | 5825MHz     |
| 802.11n/ac(HT40)   | 5150MHz ~5250 MHz | Channel 38  | N/A        | Channel 46  |
|                    |                   | 5190MHz     | N/A        | 5230MHz     |
| 802.11n/ac(HT40)   | 5250MHz ~5350 MHz | Channel54   | N/A        | Channel62   |
|                    |                   | 5270MHz     | N/A        | 5310MHz     |
| 802.11n/ac(HT40)   | 5470MHz ~5600 MHz | Channel 102 | N/A        | Channel 110 |
|                    |                   | 5510MHz     | N/A        | 5550MHz     |
| 802.11n/ac(HT40)   | 5650MHz ~5725 MHz | Channel 134 | N/A        | N/A         |
|                    |                   | 5670MHz     | N/A        | N/A         |
| 802.11ac(HT40)     | 5725MHz ~5850 MHz | Channel 151 | N/A        | Channel 159 |
|                    |                   | 5755MHz     | N/A        | 5795MHz     |
| 802.11ac(HT80)     | 5150MHz ~5250 MHz | Channel 42  | N/A        | N/A         |
|                    |                   | 5210MHz     | N/A        | N/A         |
| 802.11ac(HT80)     | 5250MHz ~5350 MHz | Channel58   | N/A        | N/A         |
|                    |                   | 5290MHz     | N/A        | N/A         |
| 802.11ac(HT80)     | 5470MHz ~5600 MHz | Channel 106 | N/A        | N/A         |
|                    |                   | 5530MHz     | N/A        | N/A         |
| 802.11ac(HT80)     | 5725MHz ~5850 MHz | Channel 155 | N/A        | N/A         |
|                    |                   | 5775MHz     | N/A        | N/A         |

## 6 General Information

### 6.1 Client Information

|                          |  |
|--------------------------|--|
| Applicant:               | Linkplay Technology Inc  |
| Address of Applicant:    | 8F-8036, Qianren Building, No. 7, Yingcui Road, Jiangning District, Nanjing, China |
| Manufacturer:            | Linkplay Technology Inc  |
| Address of Manufacturer: | 8F-8036, Qianren Building, No. 7, Yingcui Road, Jiangning District, Nanjing, China |
| Factory:                 | Linkplay Technology Inc  |
| Address of Factory:      | 8F-8036, Qianren Building, No. 7, Yingcui Road, Jiangning District, Nanjing, China |

### 2General Description of EUT

|                                  |   |       |
|----------------------------------|---|-------|
| Product Name:                    | Wireless Smart Audio Module                                 |       |
| Model No.(EUT):                  | A98, A98M, A98M-12, A98M-22, A98MG, A98-12, A98-22, A98G    |       |
| Test Model No.:                  | A98   |       |
| Trade Mark:                      | Linkplay  |       |
| EUT Supports Radios application: | 5G WiFi, 802.11a/n(HT20)/n(HT40)/ac(HT20)/ac(HT40)/ac(HT80) |       |
| Power Supply:                    | Battery:  | DC 5V |
| Sample Received Date:            | Jun. 26, 2019   |       |
| Sample tested Date:              | Jun. 26, 2019 to Aug. 09, 2018                              |       |



## 6.2 Product Specification subjective to this standard

|                        |   |
|------------------------|---|
| Operation Frequency:   | IEEE 802.11a/n/ac(HT20): 5180MHz ~5240 MHz<br>IEEE 802.11a/n/ac(HT20): 5260MHz ~5320 MHz<br>IEEE 802.11a/n/ac(HT20): 5500MHz ~5700 MHz<br>IEEE802.11a/n/ac(HT20): 5745MHz ~5825 MHz<br>IEEE802.11n/ac(HT40) 5190MHz ~5230 MHz<br>IEEE802.11n/ac(HT40) 5270MHz ~5310 MHz<br>IEEE802.11n/ac(HT40) 5510MHz ~5670 MHz<br>IEEE802.11n/ac(HT40) 5755MHz ~5795 MHz<br>IEEE802.11ac(HT80) 5210<br>IEEE802.11ac(HT80) 5290<br>IEEE802.11ac(HT80) 5530 ~ 5610<br>IEEE802.11ac(HT80) 5775  |
| Channel Numbers:       | IEEE 802.11a/n/ac(HT20): 5180MHz ~5240 MHz / 4 channel<br>IEEE 802.11a/n/ac(HT20): 5260MHz ~5320 MHz / 4 channel<br>IEEE 802.11a/n/ac(HT20): 5500MHz ~5700 MHz / 11 channel<br>IEEE802.11a/n/ac(HT20): 5745MHz ~5825 MHz / 5 channel<br>IEEE802.11n/ac(HT40) 5190MHz ~5230 MHz/ 2 channel<br>IEEE802.11n/ac(HT40) 5270MHz ~5310 MHz / 2 channel<br>IEEE802.11n/ac(HT40) 5510MHz ~5670 MHz / 5 channel<br>IEEE802.11n/ac(HT40) 5755MHz ~5795 MHz / 2 channel<br>IEEE802.11ac(HT80) 5210 / 1 channel<br>IEEE802.11ac(HT80) 5290 / 1 channel<br>IEEE802.11ac(HT80) 5530 ~ 5610 / 2 channel<br>IEEE802.11ac(HT80) 5775 /1 channel |
| Type of Modulation:    | OFDM,   |
| Test Power Grade:      | N/A   |
| Test Software of EUT:  | Linkplay Factory Tool For Custom (manufacturer declare )  |
| Antenna Type and Gain: | PIFA antenna,<br>Gain: 4.64dBi  |
| Test Voltage:          | DC 5V   |

### Operation Frequency each of channel

| For 802.11a/n/ac( HT20) Operation in the 5180 ~ 5240 band |           |         |           |         |           |         |           |
|---|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel   | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 36  | 5180MHz   | 40      | 5200MHz   | 44      | 5220MHz   | 48      | 5240MHz   |

| For 802.11a/n/ac( HT20) Operation in the 5260MHz ~5320 MHz band |           |         |           |         |           |         |           |
|---|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel   | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 52  | 5260MHz   | 56      | 5280MHz   | 60      | 5300MHz   | 64      | 5320MHz   |

| For 802.11a/n/ac( HT20) Operation in the 5500MHz ~5700 MHz band |           |         |           |         |           |         |           |
|---|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel   | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 100   | 5500MHz   | 104     | 5520MHz   | 108     | 5540MHz   | 112     | 5560MHz   |
| 116   | 5580MHz   | 120     | 5600MHz   | 124     | 5620MHz   | 128     | 5640MHz   |
| 132   | 5660MHz   | 136     | 5680MHz   | 140     | 5700MHz   | N/A     | N/A       |

| For 802.11a/n/ac( HT20) Operation in the 5745MHz ~5825 MHz band |           |         |           |         |           |         |           |
|---|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel   | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 149   | 5745MHz   | 153     | 5765MHz   | 157     | 5785MHz   | 161     | 5805MHz   |
| 165   | 5825MHz   | N/A     | N/A       | N/A     | N/A       | N/A     | N/A       |

| For 802.11n/ac( HT40) Operation in the 5190MHz ~5230MHz band |           |         |           |
|--|-----------|---------|-----------|
| Channel  | Frequency | Channel | Frequency |
| 38   | 5190MHz   | 46      | 5230MHz   |

| For 802.11n/ac( HT40) Operation in the 5270MHz ~5310 MHz band |           |         |           |
|---|-----------|---------|-----------|
| Channel   | Frequency | Channel | Frequency |
| 54  | 5190MHz   | 46      | 5310MHz   |

| For 802.11a/n/ac( HT40) Operation in the 551MHz ~5670 MHz band |           |         |           |         |           |         |           |
|--|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel  | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 102  | 5510MHz   | 110     | 5550MHz   | 118     | 5590MHz   | 126     | 5630MHz   |
| 134  | 5670MHz   | N/A     | N/A       | N/A     | N/A       | N/A     | N/A       |

| For 802.11n/ac( HT40) Operation in the 5755MHz ~5795 MHz band |           |         |           |         |           |
|---|-----------|---------|-----------|---------|-----------|
| Channel   | Frequency | Channel | Frequency | Channel | Frequency |
| 151   | 5755MHz   | 159     | 5795MHz   | N/A     | N/A       |

| For 802.11ac( HT80) Operation in the 5210 MHz band |           |         |           |         |           |
|--|-----------|---------|-----------|---------|-----------|
| Channel  | Frequency | Channel | Frequency | Channel | Frequency |
| 42   | 5210MHz   | N/A     | N/A       | N/A     | N/A       |

| For 802.11ac( HT80) Operation in the 5290 MHz band |           |         |           |         |           |
|--|-----------|---------|-----------|---------|-----------|
| Channel  | Frequency | Channel | Frequency | Channel | Frequency |
| 58   | 5290MHz   | N/A     | N/A       | N/A     | N/A       |

| For 802.11ac( HT80) Operation in the 5530MHz ~5610 MHz band |           |         |           |         |           |
|---|-----------|---------|-----------|---------|-----------|
| Channel   | Frequency | Channel | Frequency | Channel | Frequency |
| 106   | 5530MHz   | 122     | 5610      | N/A     | N/A       |

| For 802.11ac( HT80) Operation in the 5775 MHz band |           |         |           |         |           |
|--|-----------|---------|-----------|---------|-----------|
| Channel  | Frequency | Channel | Frequency | Channel | Frequency |
| 155  | 5775MHz   | N/A     | N/A       | N/A     | N/A       |

## 6.4 Description of Support Units

The EUT has been tested independently

## 6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

## 6.6 Deviation from Standards

None.

## 6.7 Abnormalities from Standard Conditions

None.

## 6.8 Other Information Requested by the Customer

None.

## 6.9 Measurement Uncertainty (95% confidence levels, k=2)

| No. | Item                            | Measurement Uncertainty |
|-----|---------------------------------|-------------------------|
| 1   | Radio Frequency                 | $7.9 \times 10^{-8}$    |
| 2   | RF power, conducted             | 0.46dB (30MHz-1GHz)     |
|     |                                 | 0.55dB (1GHz-18GHz)     |
| 3   | Radiated Spurious emission test | 4.5dB (30MHz-1GHz)      |
|     |                                 | 4.8dB (1GHz-12.75GHz)   |
| 4   | Conduction emission             | 3.5dB (9kHz to 150kHz)  |
|     |                                 | 3.1dB (150kHz to 30MHz) |
| 5   | Temperature test                | 0.64°C                  |
| 6   | Humidity test                   | 3.8%                    |
| 7   | DC power voltages               | 0.026%                  |

## 7 Equipment List

| RF test system                   |               |                              |               |                        |                            |
|----------------------------------|---------------|------------------------------|---------------|------------------------|----------------------------|
| Equipment                        | Manufacturer  | Model No.                    | Serial Number | Cal. Date (mm-dd-yyyy) | Cal. Due date (mm-dd-yyyy) |
| Signal Generator                 | Keysight      | E8257D                       | MY53401106    | 03-01-2019             | 02-28-2020                 |
| Spectrum Analyzer                | Keysight      | N9010A                       | MY54510339    | 03-01-2019             | 02-28-2020                 |
| Signal Generator                 | Keysight      | N5182B                       | MY53051549    | 03-01-2019             | 02-28-2020                 |
| High-pass filter                 | Sinoscite     | FL3CX03WG1<br>8NM12-0398-002 | ---           | 01-09-2019             | 01-08-2020                 |
| High-pass filter                 | MICRO-TRONICS | SPA-F-63029-4                | ---           | 01-09-2019             | 01-08-2020                 |
| DC Power                         | Keysight      | E3642A                       | MY54426035    | 03-01-2019             | 02-28-2020                 |
| PC-1                             | Lenovo        | R4960d                       | ---           | 03-01-2019             | 02-28-2020                 |
| BT&WI-FI Automatic control       | R&S           | OSP120                       | 101374        | 03-01-2019             | 02-28-2020                 |
| RF control unit                  | JS Tonscend   | JS0806-2                     | 15860006      | 03-01-2019             | 02-28-2020                 |
| RF control unit                  | JS Tonscend   | JS0806-1                     | 15860004      | 03-01-2019             | 02-28-2020                 |
| RF control unit                  | JS Tonscend   | JS0806-4                     | 158060007     | 03-01-2019             | 02-28-2020                 |
| BT&WI-FI Automatic test software | JS Tonscend   | JS1120-2                     | ---           | 03-01-2019             | 02-28-2020                 |
| Temperature/ Humidity Indicator  | biaozhi       | HM10                         | 1804186       | 10-12-2018             | 10-11-2019                 |

| Conducted disturbance Test            |              |                         |                |                        |                            |
|---------------------------------------|--------------|-------------------------|----------------|------------------------|----------------------------|
| Equipment                             | Manufacturer | Model No.               | Serial Number  | Cal. date (mm-dd-yyyy) | Cal. Due date (mm-dd-yyyy) |
| Receiver                              | R&S          | ESCI                    | 100435         | 05-20-2019             | 05-18-2020                 |
| Temperature/<br>Humidity<br>Indicator | Defu         | TH128                   | /              | 06-14-2019             | 06-12-2020                 |
| Communication<br>test set             | Agilent      | E5515C                  | GB47050<br>534 | 03-01-2019             | 02-28-2020                 |
| Communication<br>test set             | R&S          | CMW500                  | 102898         | 01-18-2019             | 01-17-2020                 |
| LISN                                  | R&S          | ENV216                  | 100098         | 05-08-2019             | 05-06-2020                 |
| LISN                                  | schwarzbeck  | NNLK8121                | 8121-529       | 05-08-2019             | 05-06-2020                 |
| Voltage Probe                         | R&S          | ESH2-Z3<br>0299.7810.56 | 100042         | 06-13-2017             | 06-11-2020                 |
| Current Probe                         | R&S          | EZ-17<br>816.2063.03    | 100106         | 05-20-2019             | 05-18-2020                 |
| ISN                                   | TESEQ        | ISN T800                | 30297          | 01-06-2019             | 01-15-2020                 |
| Barometer                             | changchun    | DYM3                    | 1188           | 06-20-2019             | 06-18-2020                 |

| 3M Semi/full-anechoic Chamber    |                  |                          |               |                        |                            |
|----------------------------------|------------------|--------------------------|---------------|------------------------|----------------------------|
| Equipment                        | Manufacturer     | Model No.                | Serial Number | Cal. date (mm-dd-yyyy) | Cal. Due date (mm-dd-yyyy) |
| 3M Chamber & Accessory Equipment | TDK              | SAC-3                    | ---           | 05-24-2019             | 05-22-2020                 |
| TRILOG Broadband Antenna         | Schwarzbeck      | VULB9163                 | 9163-401      | 12-21-2018             | 12-20-2019                 |
| TRILOG Broadband Antenna         | Schwarzbeck      | VULB9163                 | 9163-618      | 07-26-2019             | 07-24-2020                 |
| Microwave Preamplifier           | Agilent          | 8449B                    | 3008A02425    | 08-21-2018             | 08-20-2019                 |
| Microwave Preamplifier           | Tonscend         | EMC051845 SE             | 980380        | 01-16-2019             | 01-15-2020                 |
| Horn Antenna                     | Schwarzbeck      | BBHA 9120D               | 9120D-1869    | 04-25-2018             | 04-23-2021                 |
| Horn Antenna                     | ETS-LINDGREN     | 3117                     | 00057410      | 06-05-2018             | 06-03-2021                 |
| Double ridge horn antenna        | A.H.SYSTEMS      | SAS-574                  | 374           | 06-05-2018             | 06-04-2021                 |
| Pre-amplifier                    | A.H.SYSTEMS      | PAP-1840-60              | 6041.6041     | 07-26-2019             | 07-24-2020                 |
| Loop Antenna                     | Schwarzbeck      | FMZB 1519B               | 1519B-076     | 04-25-2018             | 04-25-2021                 |
| Spectrum Analyzer                | R&S              | FSP40                    | 100416        | 04-28-2019             | 04-26-2020                 |
| Receiver                         | R&S              | ESCI                     | 100435        | 05-20-2019             | 05-18-2020                 |
| Receiver                         | R&S              | ESCI7                    | 100938-003    | 11-23-2018             | 11-22-2019                 |
| Multi device Controller          | maturio          | NCD/070/10711112         | ---           | 01-09-2019             | 01-08-2020                 |
| Signal Generator                 | Agilent          | E4438C                   | MY45095744    | 03-01-2019             | 02-28-2020                 |
| Signal Generator                 | Keysight         | E8257D                   | MY53401106    | 03-01-2019             | 02-28-2020                 |
| Temperature/Humidity Indicator   | Shanghai qixiang | HM10                     | 1804298       | 10-12-2018             | 10-11-2019                 |
| Communication test set           | Agilent          | E5515C                   | GB47050534    | 03-01-2019             | 02-28-2020                 |
| Cable line                       | Fulai(7M)        | SF106                    | 5219/6A       | 01-09-2019             | 01-08-2020                 |
| Cable line                       | Fulai(6M)        | SF106                    | 5220/6A       | 01-09-2019             | 01-08-2020                 |
| Cable line                       | Fulai(3M)        | SF106                    | 5216/6A       | 01-09-2019             | 01-08-2020                 |
| Cable line                       | Fulai(3M)        | SF106                    | 5217/6A       | 01-09-2019             | 01-08-2020                 |
| High-pass filter                 | Sinoscite        | FL3CX03WG18NM12-0398-002 | ---           | 01-09-2019             | 01-08-2020                 |
| High-pass filter                 | MICRO-TRONICS    | SPA-F-63029-4            | ---           | 01-09-2019             | 01-08-2020                 |
| band rejection filter            | Sinoscite        | FL5CX01CA09CL12-0395-001 | ---           | 01-09-2019             | 01-08-2020                 |
| band rejection filter            | Sinoscite        | FL5CX01CA08CL12-0393-001 | ---           | 01-09-2019             | 01-08-2020                 |
| band rejection filter            | Sinoscite        | FL5CX02CA04CL12-0396-002 | ---           | 01-09-2019             | 01-08-2020                 |
| band rejection filter            | Sinoscite        | FL5CX02CA03CL12-0394-001 | ---           | 01-09-2019             | 01-08-2020                 |

| 3M full-anechoic Chamber        |              |                   |               |                        |                            |
|---------------------------------|--------------|-------------------|---------------|------------------------|----------------------------|
| Equipment                       | Manufacturer | Model No.         | Serial Number | Cal. date (mm-dd-yyyy) | Cal. Due date (mm-dd-yyyy) |
| RSE Automatic test software     | JS Tonscend  | JS36-RSE          | 10166         | 06-19-2019             | 06-17-2020                 |
| Receiver                        | Keysight     | N9038A            | MY57290136    | 03-27-2019             | 03-25-2020                 |
| Spectrum Analyzer               | Keysight     | N9020B            | MY57111112    | 03-27-2019             | 03-25-2020                 |
| Spectrum Analyzer               | Keysight     | N9030B            | MY57140871    | 03-27-2019             | 03-25-2020                 |
| Loop Antenna                    | Schwarzbeck  | FMZB 1519B        | 1519B-075     | 04-25-2018             | 04-23-2021                 |
| Loop Antenna                    | Schwarzbeck  | FMZB 1519B        | 1519B-076     | 04-25-2018             | 04-23-2021                 |
| TRILOG Broadband Antenna        | Schwarzbeck  | VULB 9163         | 9163-1148     | 04-25-2018             | 04-23-2021                 |
| Horn Antenna                    | Schwarzbeck  | BBHA 9170         | 9170-832      | 04-25-2018             | 04-23-2021                 |
| Horn Antenna                    | Schwarzbeck  | BBHA 9170         | 9170-829      | 04-25-2018             | 04-23-2021                 |
| Communication Antenna           | Schwarzbeck  | CLSA 0110L        | 1014          | 02-14-2019             | 02-13-2020                 |
| Biconical antenna               | Schwarzbeck  | VUBA 9117         | 9117-381      | 04-25-2018             | 04-23-2021                 |
| Horn Antenna                    | ETS-LINDGREN | 3117              | 00057407      | 07-10-2018             | 07-08-2021                 |
| Preamplifier                    | EMCI         | EMC184055SE       | 980596        | 05-22-2019             | 5-20-2020                  |
| Communication test set          | R&S          | CMW500            | 102898        | 01-18-2019             | 01-17-2020                 |
| Preamplifier                    | EMCI         | EMC001330         | 980563        | 05-08-2019             | 05-06-2020                 |
| Preamplifier                    | Agilent      | 8449B             | 3008A02425    | 08-21-2018             | 08-20-2019                 |
| Temperature/ Humidity Indicator | biaozhi      | GM1360            | EE1186631     | 05-01-2019             | 04-30-2020                 |
| Signal Generator                | KEYSIGHT     | E8257D            | MY53401106    | 03-01-2019             | 02-28-2020                 |
| Fully Anechoic Chamber          | TDK          | FAC-3             | ---           | 01-17-2018             | 01-15-2021                 |
| Filter bank                     | JS Tonscend  | JS0806-F          | 188060094     | 04-10-2018             | 04-08-2021                 |
| Cable line                      | Times        | SFT205-NMSM-2.50M | 394812-0001   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | SFT205-NMSM-2.50M | 394812-0002   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | SFT205-NMSM-2.50M | 394812-0003   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | SFT205-NMSM-2.50M | 393495-0001   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | EMC104-NMNM-1000  | SN160710      | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | SFT205-NMSM-3.00M | 394813-0001   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | SFT205-NMNM-1.50M | 381964-0001   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | SFT205-NMSM-7.00M | 394815-0001   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | HF160-KMKM-3.00M  | 393493-0001   | 01-09-2019             | 01-08-2020                 |

## 8 Radio Technical Requirements Specification

### Reference documents for testing:

| No. | Identity   | Document Title   |
|-----|--|--|
| 1   | FCC Part15E  | Subpart C-Intentional Radiators  |
| 2   | ANSI C63.10-2013   | American National Standard for Testing Unlicensed Wireless Devices   |
| 3   | KDB789033 D02 General UNII Test Procedures New Rules v01 | Guidelines for compliance testing of unlicensed national information infrastructure (U-NII) device part 15 subpart E |

### Test Results List:

| Test Requirement                          | Test method      | Test item   | Verdict | Note        |
|---|------------------|---|---------|-------------|
| Part15E Section 15.407 (a)(1)(2)(4)(h)(1) | KDB789033 D02v01 | Conducted Output Power and transmit power control mechanism       | PASS    | Appendix A) |
| Part15E Section 15.407 (a)(1)(2)          | KDB789033 D02v01 | 26dB Occupied Bandwidth   | PASS    | Appendix B) |
| Part15E Section 15.407 (a)(1)(2)(5)       | KDB789033 D02v01 | Power Spectral Density  | PASS    | Appendix C) |
| Part15E Section 15.407 (a)(6)             | KDB789033 D02v01 | Peak power excursion  | PASS    | Appendix D) |
| Part15E Section 15.407 (g)                | KDB789033 D02v01 | Frequency stability   | PASS    | Appendix E) |
| Part15C Section 15.203                    | ANSI C63.10      | Antenna Requirement   | PASS    | Appendix F) |
| Part15E Section 15.407 (c)                | Section 15.407   | Operation in the absence of information to the transmit           | PASS    | Appendix G) |
| Part15E Section 15.407 (b)(6)             | ANSI C63.10      | AC Power Line Conducted Emission                                  | PASS    | Appendix H) |
| Part15E Section 15.407 (b)(6)(7)(8)       | KDB789033 D02v01 | Restricted bands around fundamental frequency (Radiated Emission) | PASS    | Appendix I) |
| Part15E Section 15.407 (b)(6)(7)(8)       | KDB789033 D02v01 | Unwanted Emissions in the Restricted Bands                        | PASS    | Appendix J) |
| Part15E Section 15.407 (b)(1)(2)(3)(5)    | KDB789033 D02v01 | Unwanted Emissions that fall Outside of the Restricted Bands      | PASS    | Appendix K) |



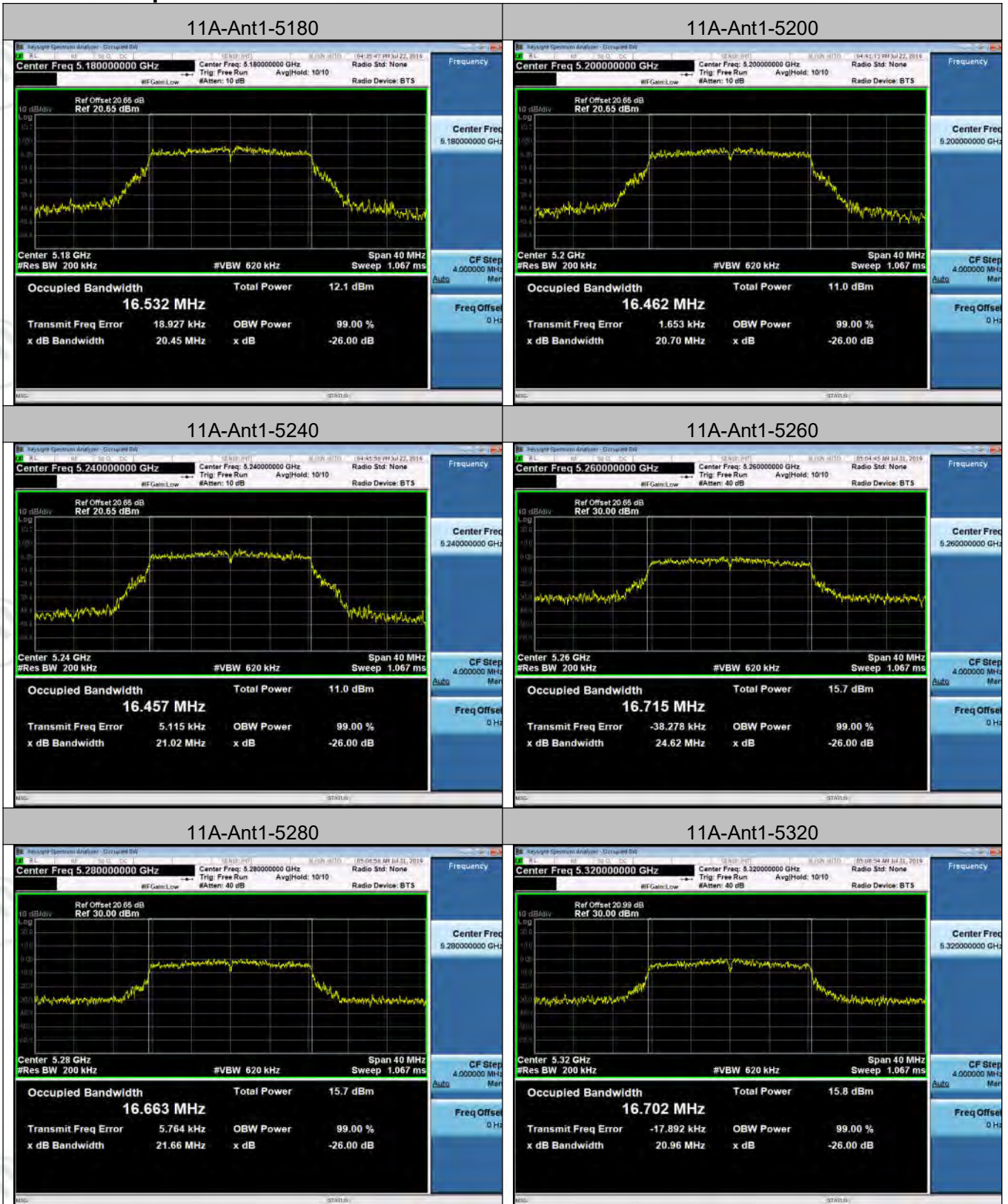
**Ant 1:**
**Appendix A): Emission Bandwidth**
**Result Table**

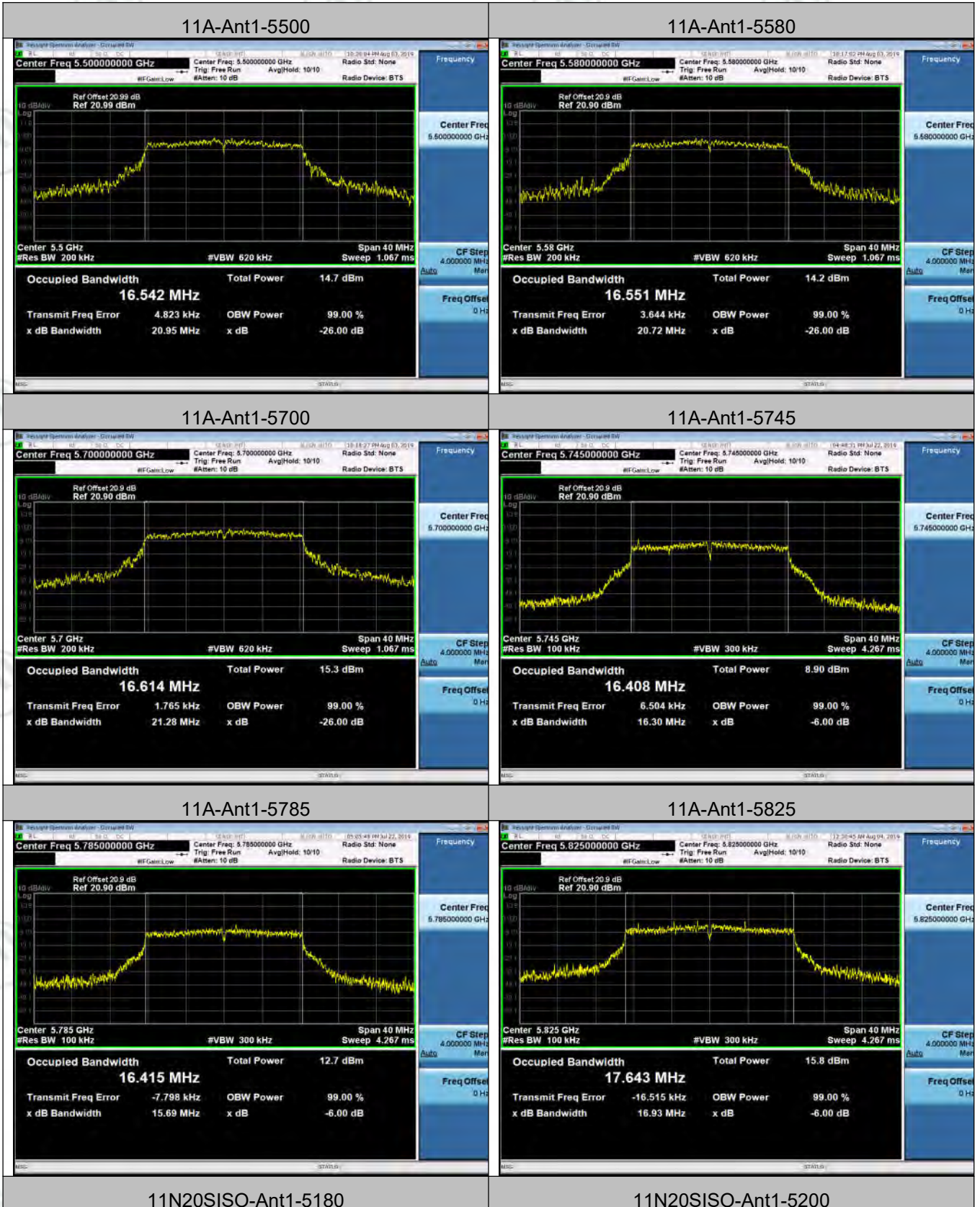
| Test Mode  | Antenna | Channel | EBW[MHz] | OBW[MHz] | Verdict |
|------------|---------|---------|----------|----------|---------|
| 11A        | Ant1    | 5180    | 20.45    | 16.532   | PASS    |
| 11A        | Ant1    | 5200    | 20.70    | 16.462   | PASS    |
| 11A        | Ant1    | 5240    | 21.02    | 16.457   | PASS    |
| 11A        | Ant1    | 5260    | 24.62    | 16.715   | PASS    |
| 11A        | Ant1    | 5280    | 21.66    | 16.663   | PASS    |
| 11A        | Ant1    | 5320    | 20.96    | 16.702   | PASS    |
| 11A        | Ant1    | 5500    | 20.95    | 16.542   | PASS    |
| 11A        | Ant1    | 5580    | 20.72    | 16.551   | PASS    |
| 11A        | Ant1    | 5700    | 21.28    | 16.614   | PASS    |
| 11A        | Ant1    | 5745    | 16.30    | 16.408   | PASS    |
| 11A        | Ant1    | 5785    | 15.69    | 16.415   | PASS    |
| 11A        | Ant1    | 5825    | 16.93    | 17.643   | PASS    |
| 11N20SISO  | Ant1    | 5180    | 21.11    | 17.698   | PASS    |
| 11N20SISO  | Ant1    | 5200    | 20.55    | 17.724   | PASS    |
| 11N20SISO  | Ant1    | 5240    | 21.15    | 17.722   | PASS    |
| 11N20SISO  | Ant1    | 5260    | 20.84    | 17.709   | PASS    |
| 11N20SISO  | Ant1    | 5280    | 21.04    | 17.659   | PASS    |
| 11N20SISO  | Ant1    | 5320    | 21.11    | 17.689   | PASS    |
| 11N20SISO  | Ant1    | 5500    | 20.59    | 17.757   | PASS    |
| 11N20SISO  | Ant1    | 5580    | 20.72    | 17.719   | PASS    |
| 11N20SISO  | Ant1    | 5700    | 21.47    | 17.719   | PASS    |
| 11N20SISO  | Ant1    | 5745    | 17.63    | 17.677   | PASS    |
| 11N20SISO  | Ant1    | 5785    | 17.54    | 17.611   | PASS    |
| 11N20SISO  | Ant1    | 5825    | 16.24    | 17.616   | PASS    |
| 11AC20SISO | Ant1    | 5180    | 20.51    | 17.687   | PASS    |
| 11AC20SISO | Ant1    | 5200    | 20.35    | 17.670   | PASS    |
| 11AC20SISO | Ant1    | 5240    | 21.01    | 17.712   | PASS    |

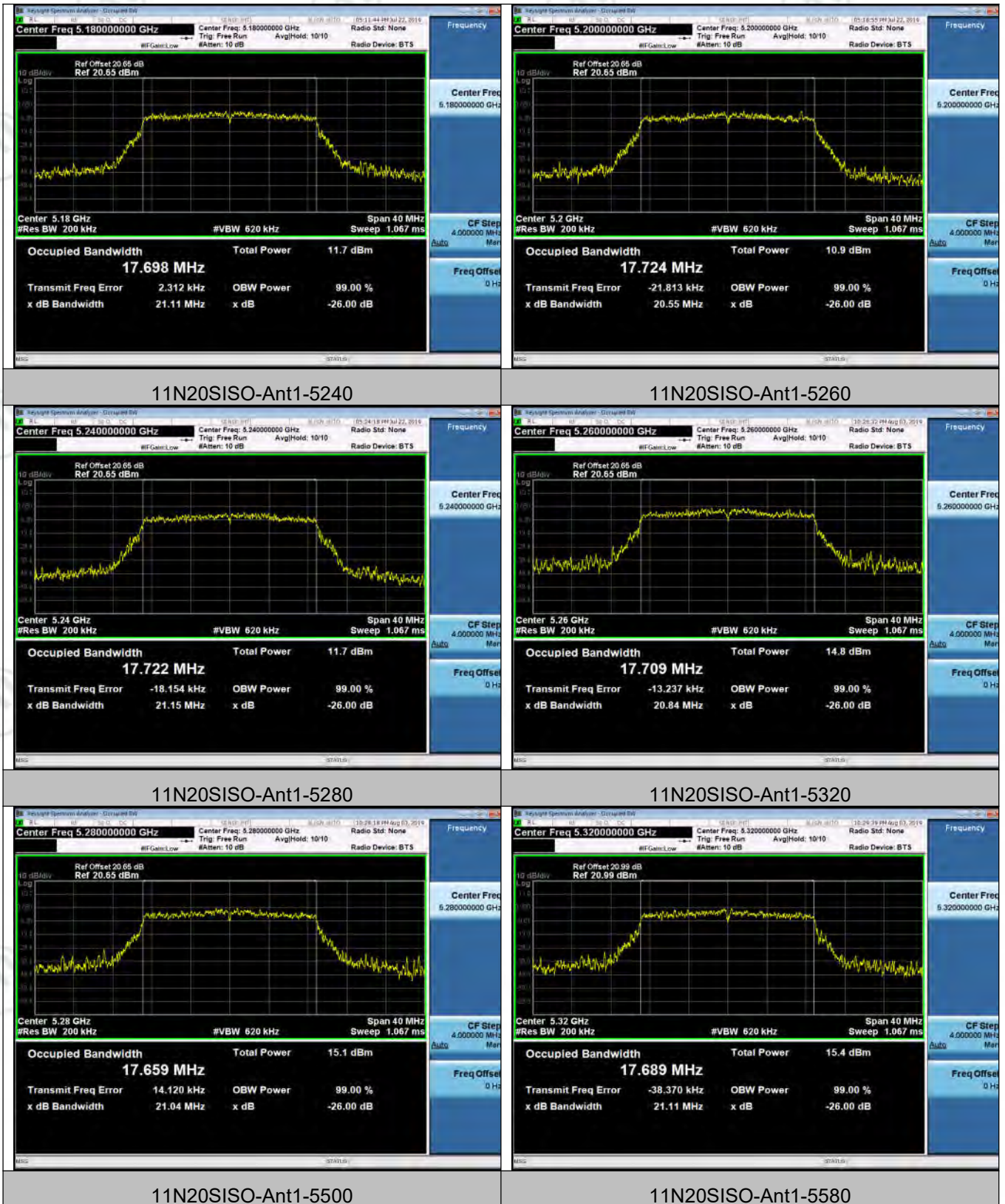
|            |      |      |       |        |      |
|------------|------|------|-------|--------|------|
| 11AC20SISO | Ant1 | 5260 | 20.97 | 17.719 | PASS |
| 11AC20SISO | Ant1 | 5280 | 21.19 | 17.668 | PASS |
| 11AC20SISO | Ant1 | 5320 | 20.76 | 17.680 | PASS |
| 11AC20SISO | Ant1 | 5500 | 20.68 | 17.760 | PASS |
| 11AC20SISO | Ant1 | 5580 | 20.86 | 17.668 | PASS |
| 11AC20SISO | Ant1 | 5700 | 21.27 | 17.679 | PASS |
| 11AC20SISO | Ant1 | 5745 | 17.60 | 17.664 | PASS |
| 11AC20SISO | Ant1 | 5785 | 17.06 | 17.667 | PASS |
| 11AC20SISO | Ant1 | 5825 | 17.56 | 17.616 | PASS |
| 11N40SISO  | Ant1 | 5190 | 38.55 | 36.163 | PASS |
| 11N40SISO  | Ant1 | 5230 | 39.32 | 36.150 | PASS |
| 11N40SISO  | Ant1 | 5270 | 39.41 | 36.172 | PASS |
| 11N40SISO  | Ant1 | 5310 | 38.85 | 36.184 | PASS |
| 11N40SISO  | Ant1 | 5510 | 39.18 | 36.082 | PASS |
| 11N40SISO  | Ant1 | 5550 | 38.76 | 36.195 | PASS |
| 11N40SISO  | Ant1 | 5670 | 38.71 | 36.182 | PASS |
| 11N40SISO  | Ant1 | 5755 | 35.22 | 36.155 | PASS |
| 11N40SISO  | Ant1 | 5795 | 36.31 | 36.162 | PASS |
| 11AC40SISO | Ant1 | 5190 | 38.78 | 36.214 | PASS |
| 11AC40SISO | Ant1 | 5230 | 39.38 | 36.104 | PASS |
| 11AC40SISO | Ant1 | 5270 | 39.29 | 36.205 | PASS |
| 11AC40SISO | Ant1 | 5310 | 38.77 | 36.096 | PASS |
| 11AC40SISO | Ant1 | 5510 | 38.47 | 36.001 | PASS |
| 11AC40SISO | Ant1 | 5550 | 39.21 | 36.149 | PASS |
| 11AC40SISO | Ant1 | 5670 | 38.92 | 36.117 | PASS |
| 11AC40SISO | Ant1 | 5755 | 36.06 | 36.104 | PASS |
| 11AC40SISO | Ant1 | 5795 | 35.67 | 36.146 | PASS |

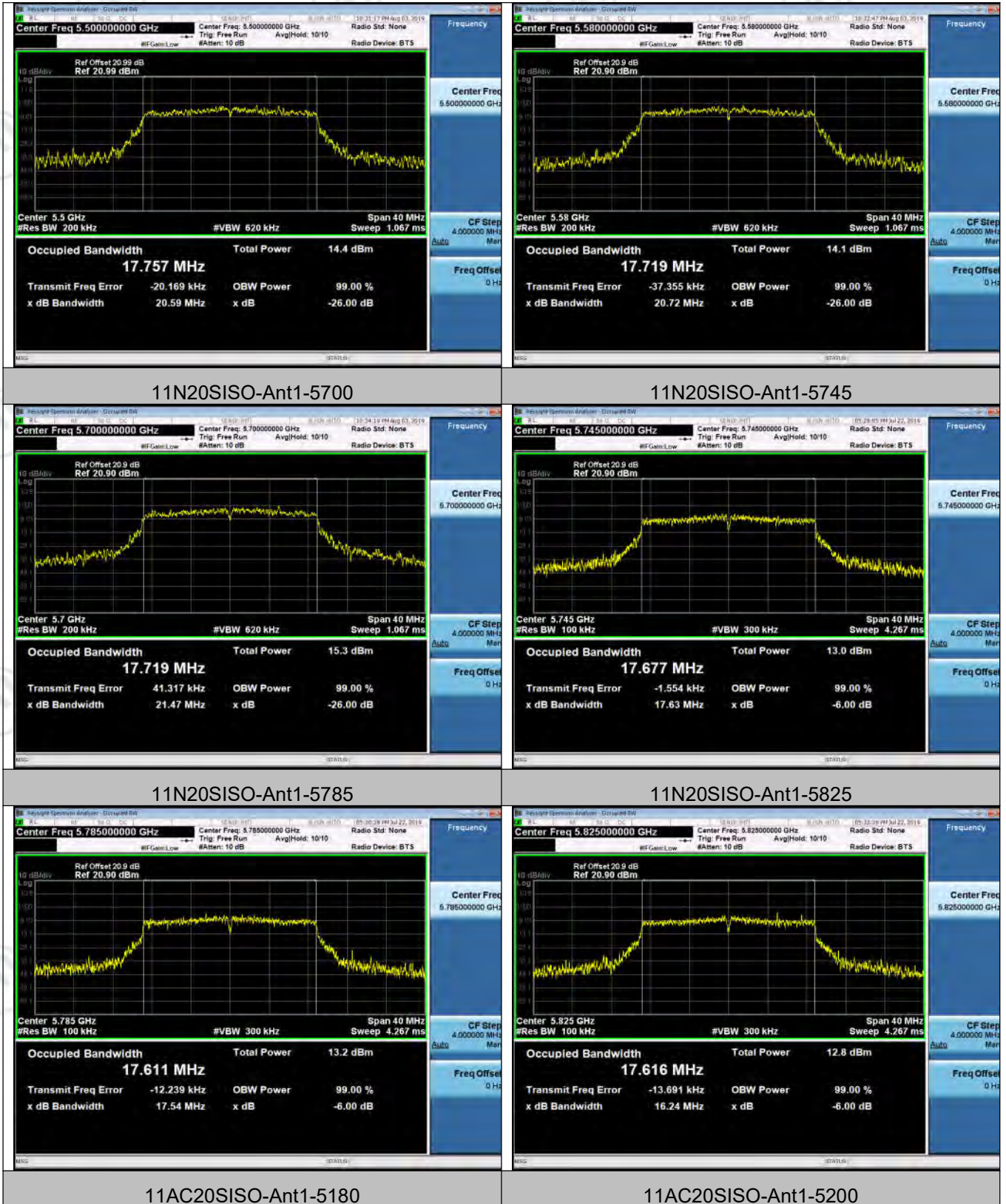
| Test Mode  | Antenna | Channel | EBW[MHz] | OBW[MHz] | Verdict |
|------------|---------|---------|----------|----------|---------|
| 11AC80SISO | Ant1    | 5210    | 80.13    | 75.445   | PASS    |
| 11AC80SISO | Ant1    | 5290    | 80.11    | 75.409   | PASS    |
| 11AC80SISO | Ant1    | 5530    | 80.23    | 75.522   | PASS    |
| 11AC80SISO | Ant1    | 5775    | 73.85    | 75.624   | PASS    |

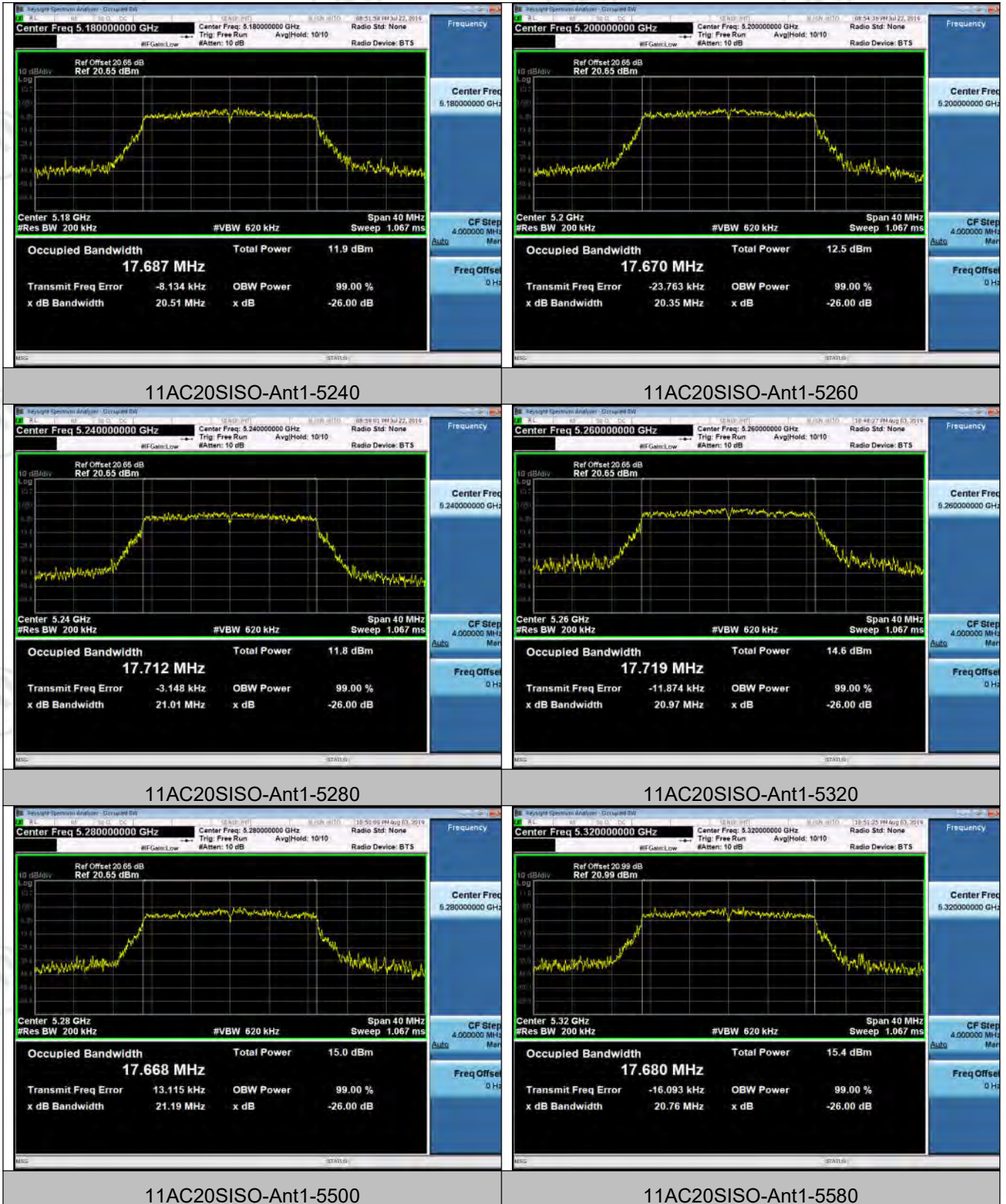
**Test Graph**



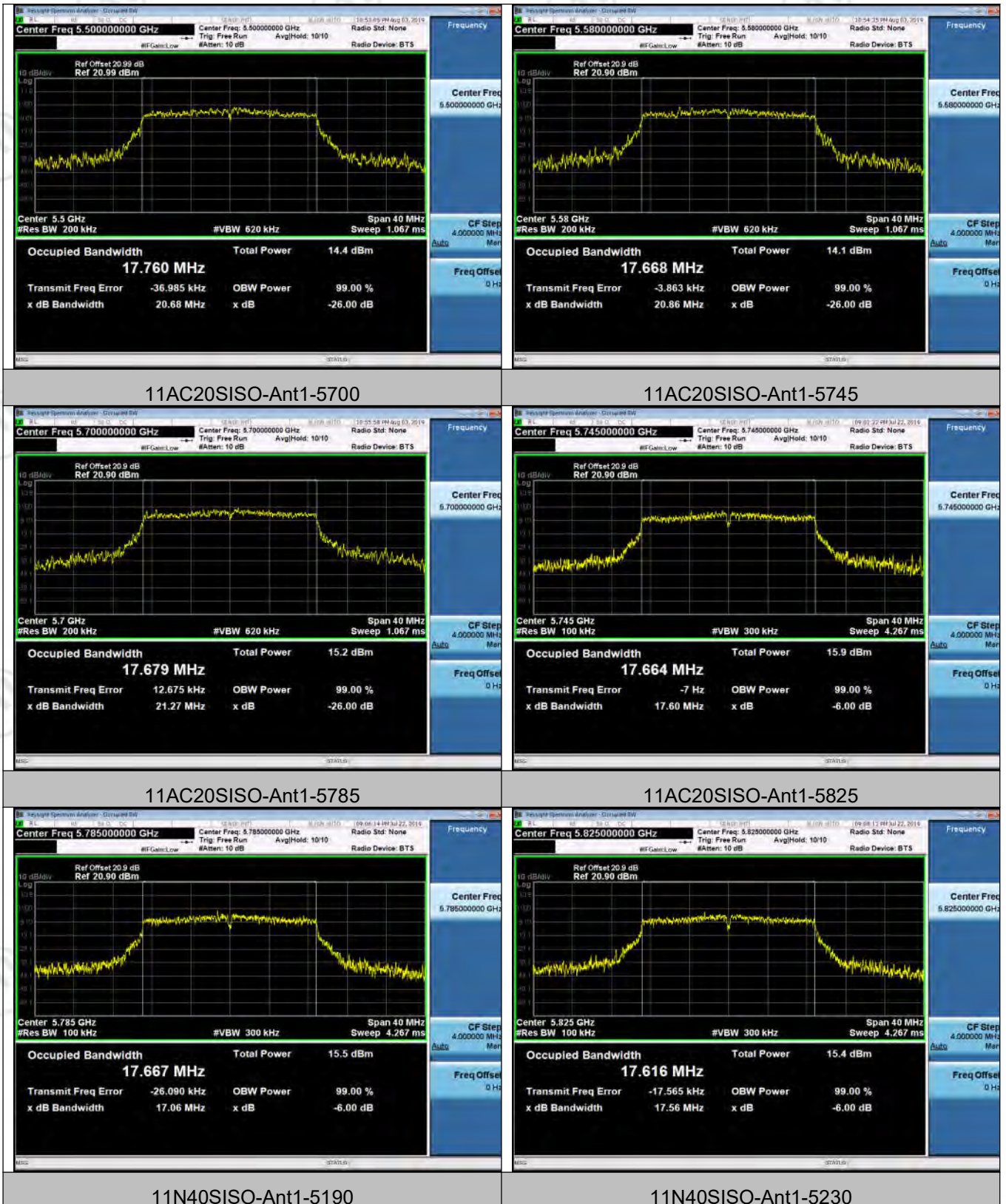


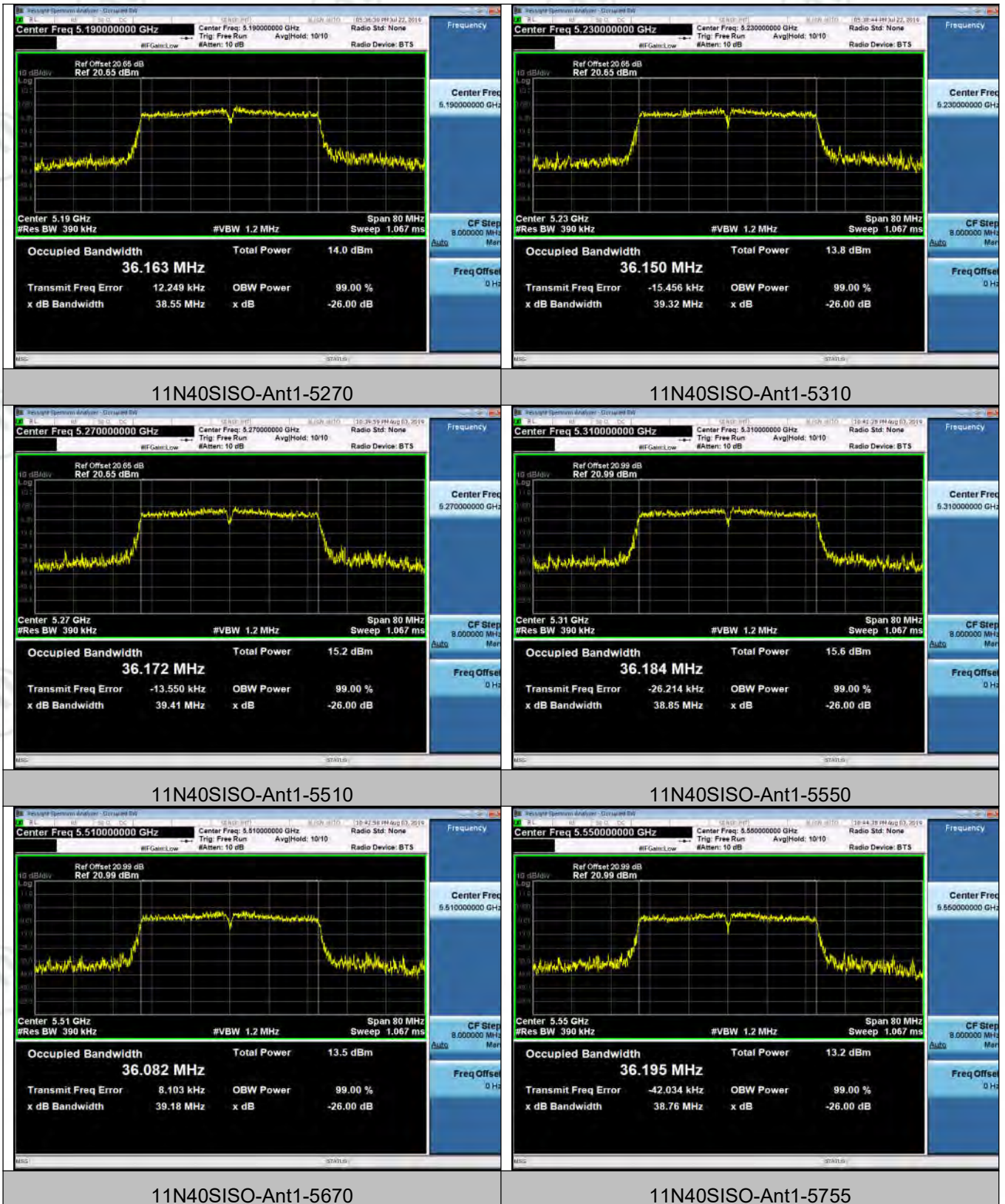


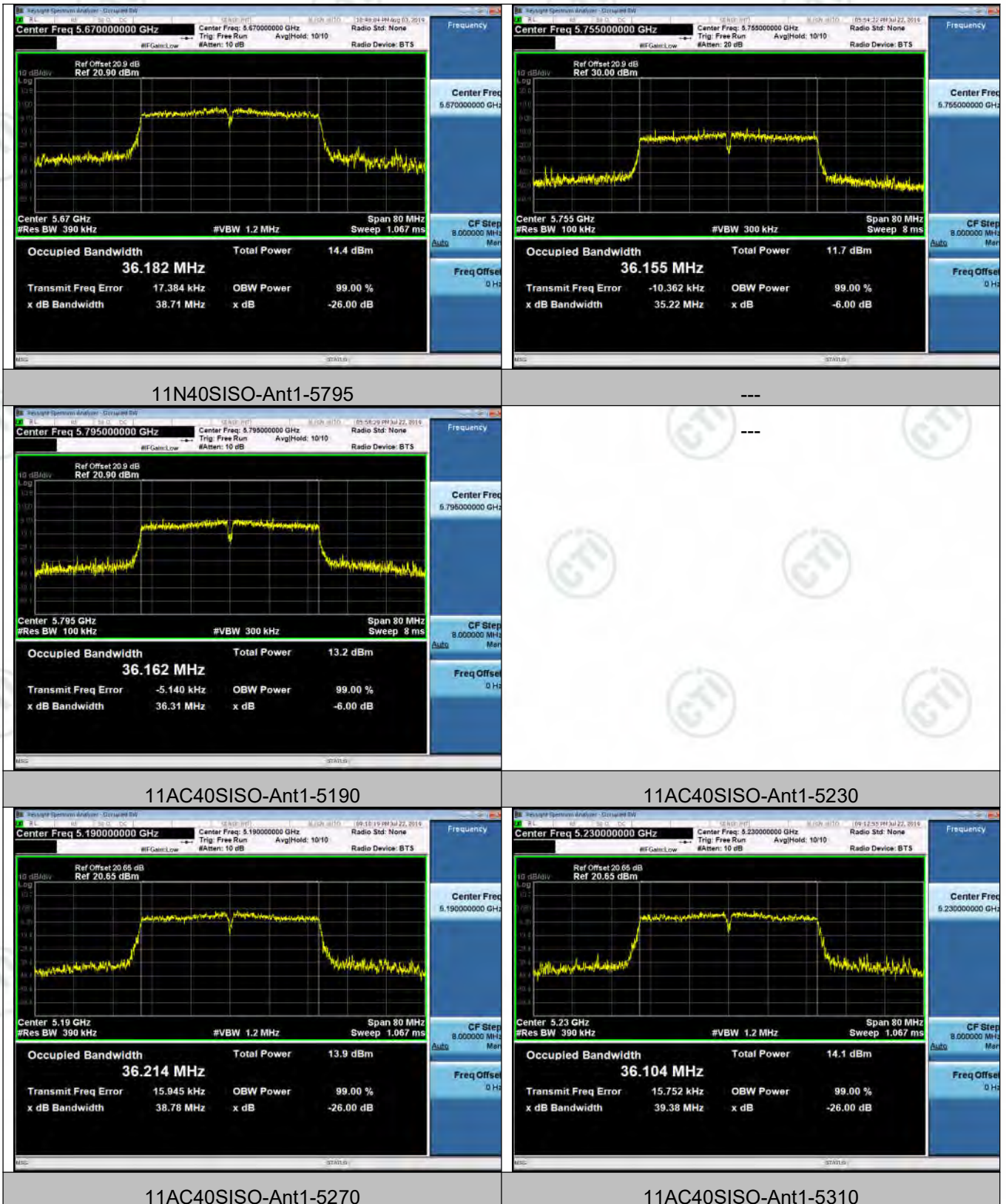


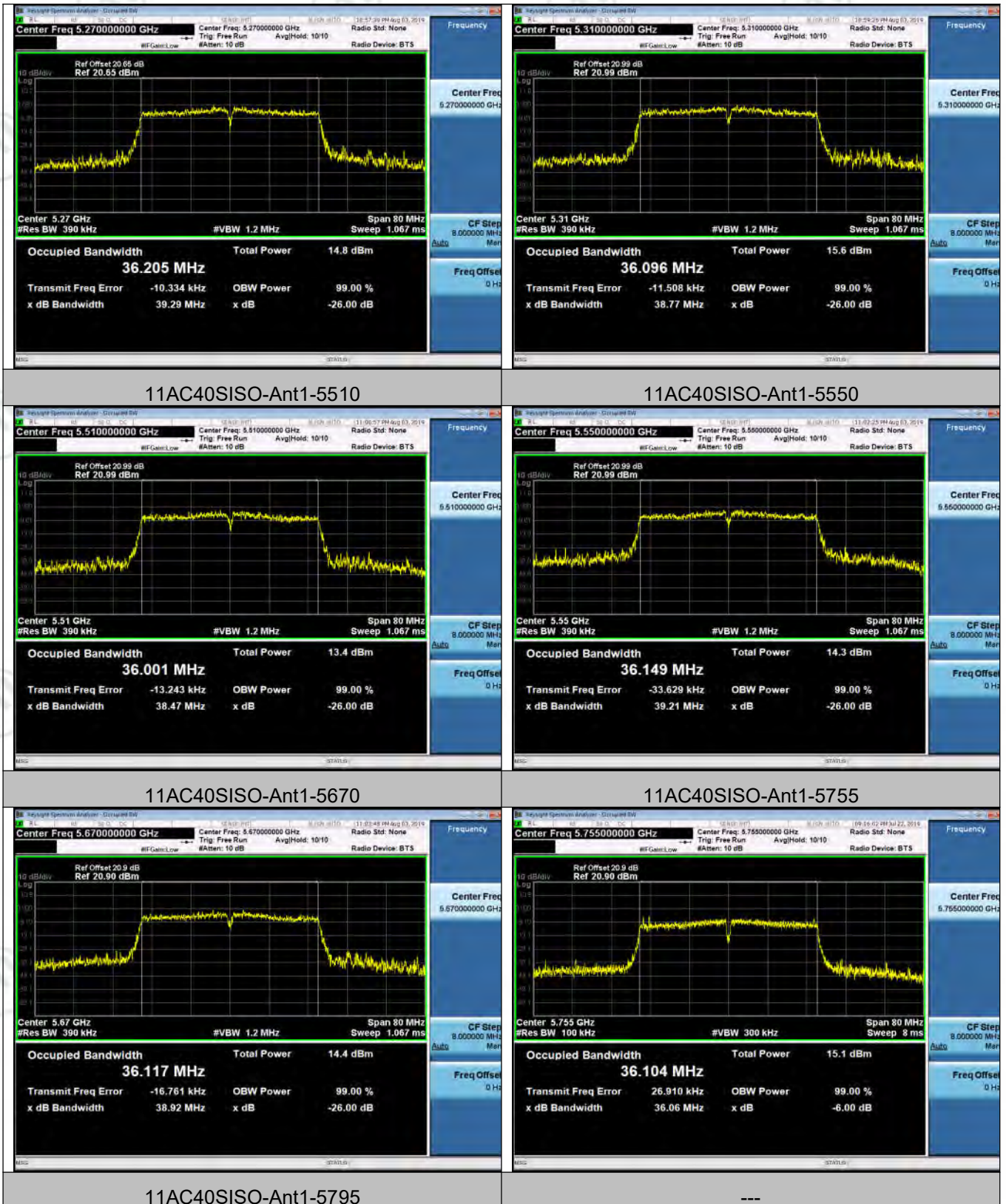


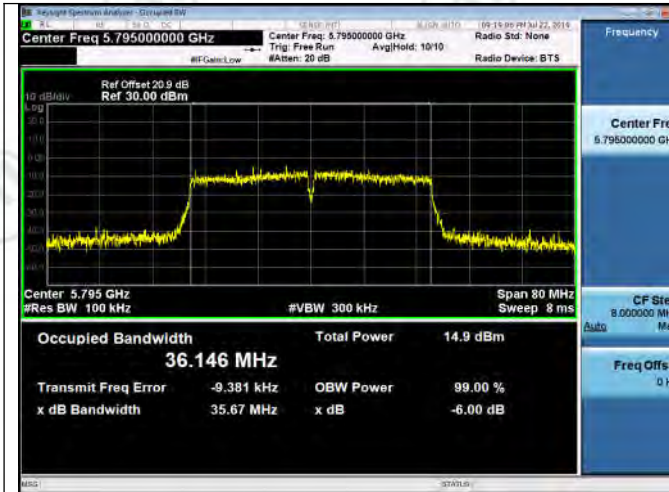




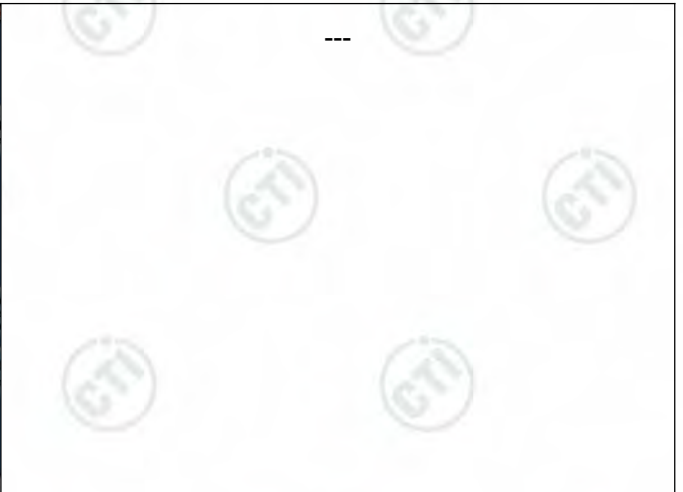




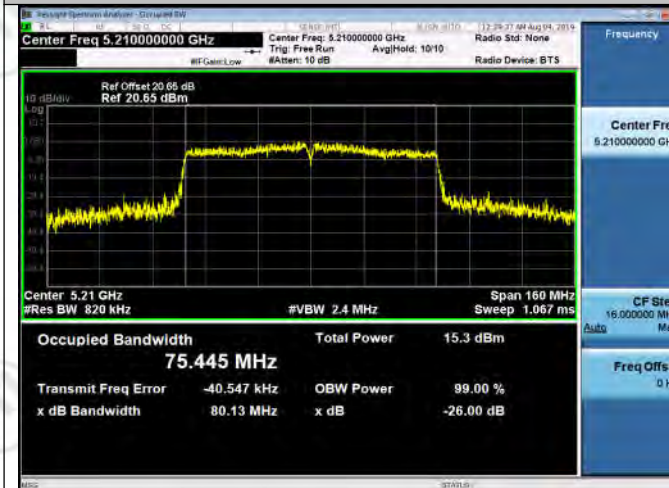




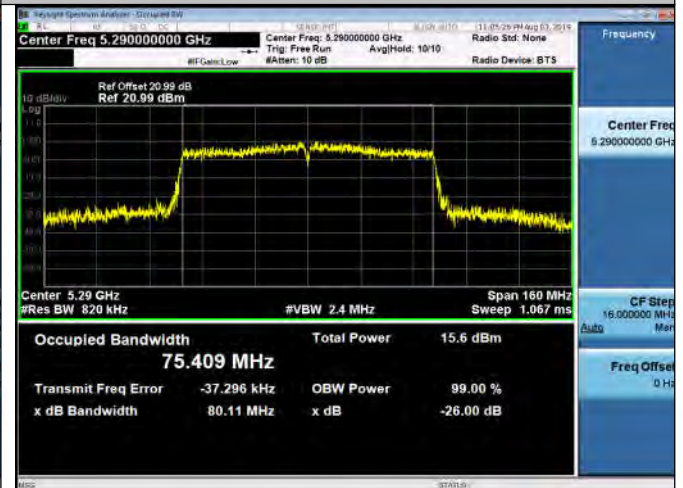
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11AC80SISO-Ant1-5290



11AC80SISO-Ant1-5530



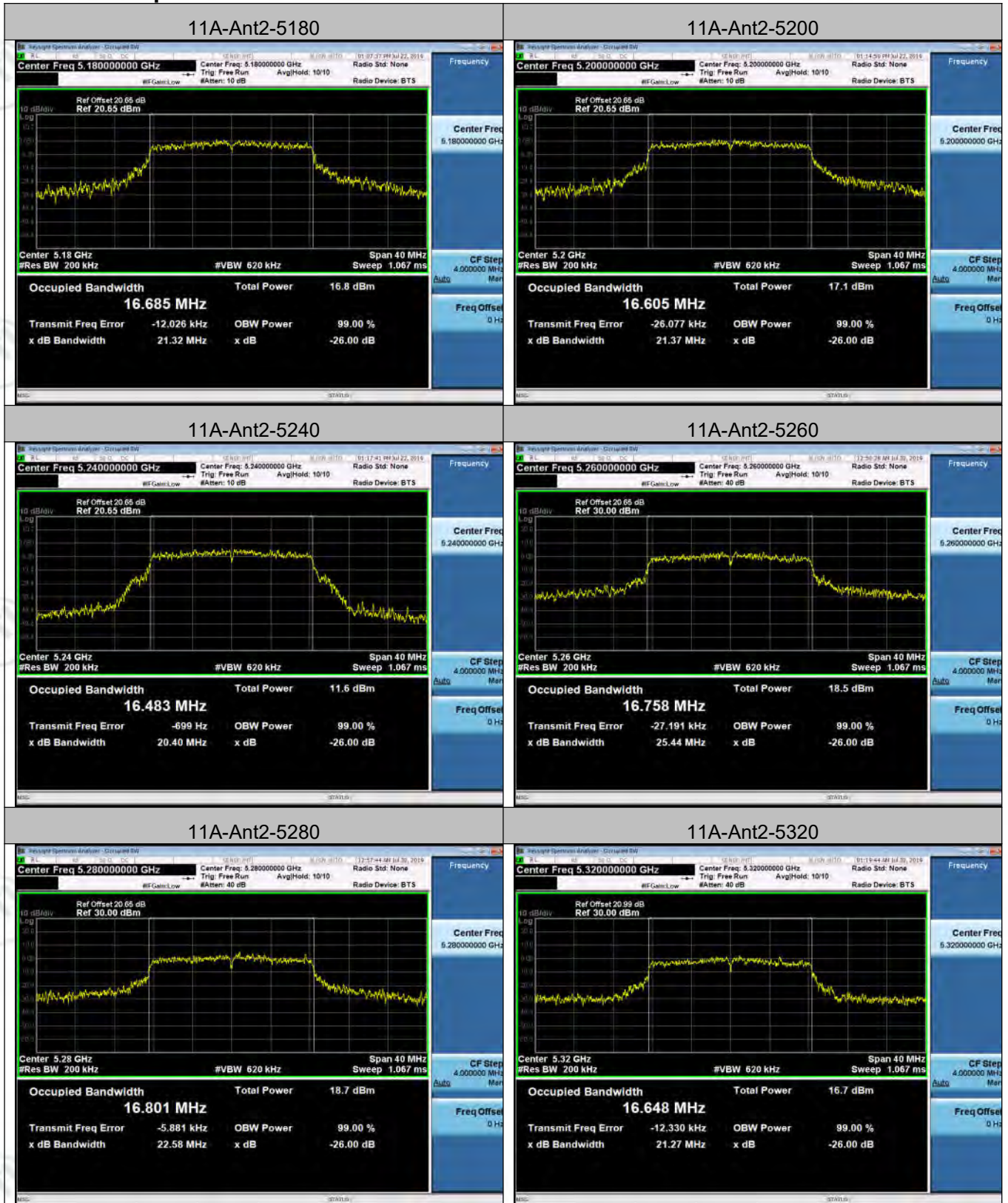
11AC80SISO-Ant1-5775

**Ant 2:**

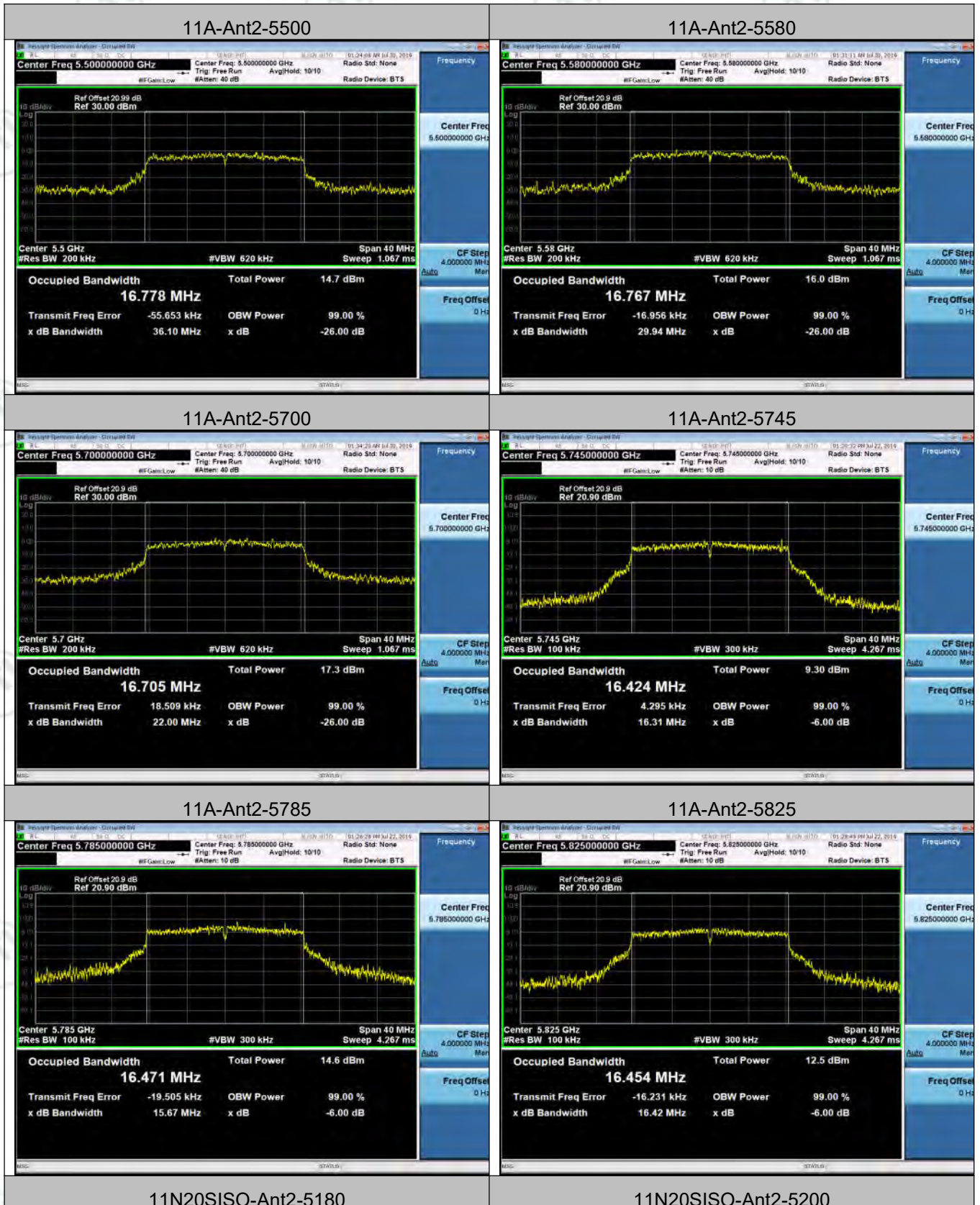
| Test Mode  | Antenna | Channel | EBW[MHz] | OBW[MHz] | Verdict |
|------------|---------|---------|----------|----------|---------|
| 11A        | Ant2    | 5180    | 21.32    | 16.685   | PASS    |
| 11A        | Ant2    | 5200    | 21.37    | 16.605   | PASS    |
| 11A        | Ant2    | 5240    | 20.40    | 16.483   | PASS    |
| 11A        | Ant2    | 5260    | 25.44    | 16.758   | PASS    |
| 11A        | Ant2    | 5280    | 22.58    | 16.801   | PASS    |
| 11A        | Ant2    | 5320    | 21.27    | 16.648   | PASS    |
| 11A        | Ant2    | 5500    | 36.10    | 16.778   | PASS    |
| 11A        | Ant2    | 5580    | 29.94    | 16.767   | PASS    |
| 11A        | Ant2    | 5700    | 22.00    | 16.705   | PASS    |
| 11A        | Ant2    | 5745    | 16.31    | 16.424   | PASS    |
| 11A        | Ant2    | 5785    | 15.67    | 16.471   | PASS    |
| 11A        | Ant2    | 5825    | 16.42    | 16.454   | PASS    |
| 11N20SISO  | Ant2    | 5180    | 21.31    | 17.793   | PASS    |
| 11N20SISO  | Ant2    | 5200    | 20.78    | 17.685   | PASS    |
| 11N20SISO  | Ant2    | 5240    | 20.44    | 17.716   | PASS    |
| 11N20SISO  | Ant2    | 5260    | 21.20    | 17.815   | PASS    |
| 11N20SISO  | Ant2    | 5280    | 21.00    | 17.773   | PASS    |
| 11N20SISO  | Ant2    | 5320    | 21.52    | 17.785   | PASS    |
| 11N20SISO  | Ant2    | 5500    | 21.61    | 17.860   | PASS    |
| 11N20SISO  | Ant2    | 5580    | 21.08    | 17.715   | PASS    |
| 11N20SISO  | Ant2    | 5700    | 25.18    | 17.887   | PASS    |
| 11N20SISO  | Ant2    | 5745    | 17.17    | 17.674   | PASS    |
| 11N20SISO  | Ant2    | 5785    | 16.89    | 17.705   | PASS    |
| 11N20SISO  | Ant2    | 5825    | 15.67    | 17.653   | PASS    |
| 11AC20SISO | Ant2    | 5180    | 20.58    | 17.714   | PASS    |
| 11AC20SISO | Ant2    | 5200    | 20.82    | 17.684   | PASS    |
| 11AC20SISO | Ant2    | 5240    | 20.82    | 17.691   | PASS    |
| 11AC20SISO | Ant2    | 5260    | 21.89    | 17.771   | PASS    |
| 11AC20SISO | Ant2    | 5280    | 21.03    | 17.709   | PASS    |
| 11AC20SISO | Ant2    | 5320    | 21.19    | 17.766   | PASS    |

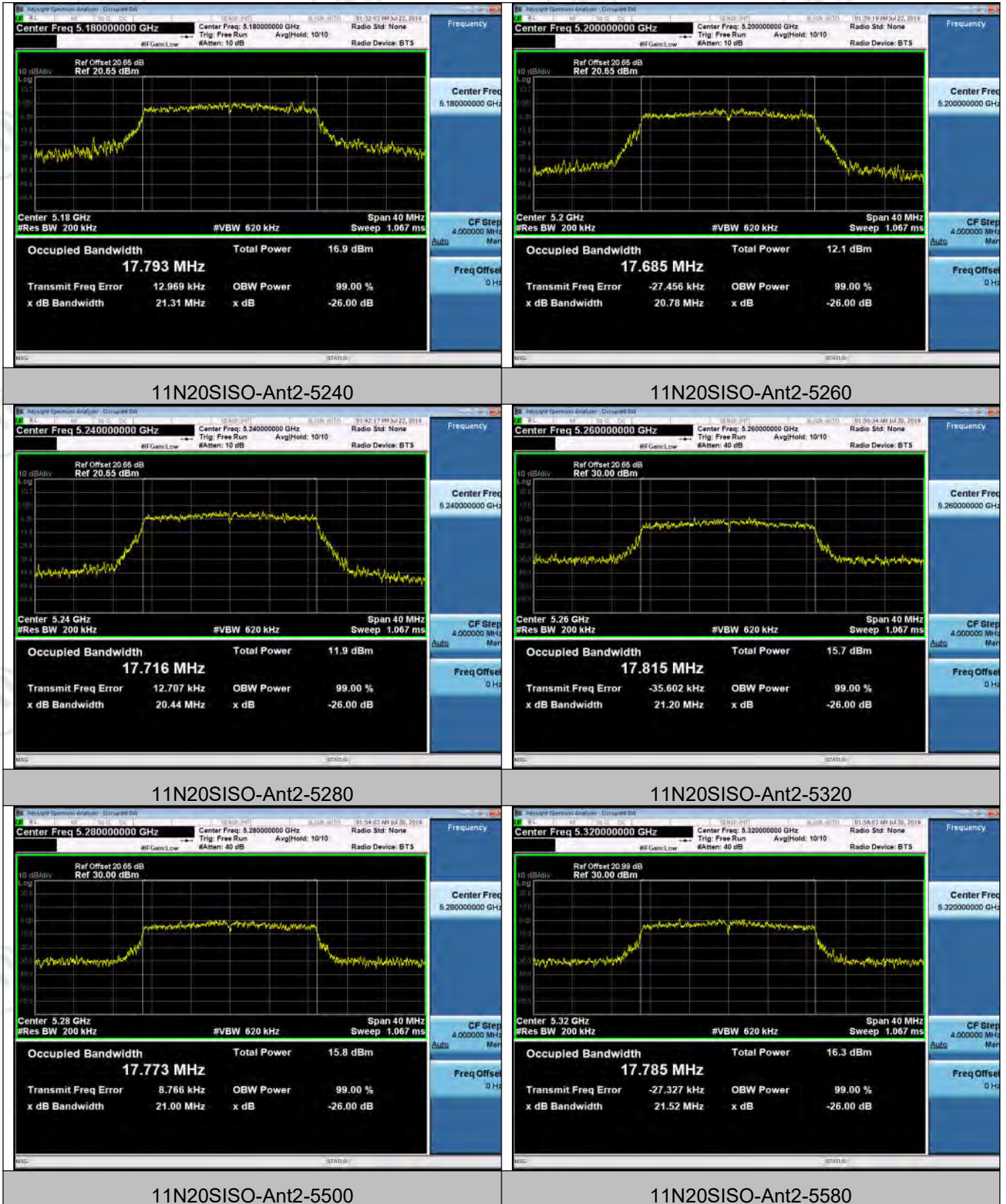
| 11AC20SISO | Ant2    | 5500    | 21.99    | 17.782   | PASS    |
|------------|---------|---------|----------|----------|---------|
| 11AC20SISO | Ant2    | 5580    | 21.54    | 17.766   | PASS    |
| 11AC20SISO | Ant2    | 5700    | 24.24    | 17.862   | PASS    |
| 11AC20SISO | Ant2    | 5745    | 17.54    | 17.728   | PASS    |
| 11AC20SISO | Ant2    | 5785    | 16.26    | 17.702   | PASS    |
| 11AC20SISO | Ant2    | 5825    | 17.57    | 17.694   | PASS    |
| 11N40SISO  | Ant2    | 5190    | 39.16    | 36.184   | PASS    |
| 11N40SISO  | Ant2    | 5230    | 38.90    | 36.187   | PASS    |
| 11N40SISO  | Ant2    | 5270    | 39.40    | 36.156   | PASS    |
| 11N40SISO  | Ant2    | 5310    | 39.17    | 36.177   | PASS    |
| 11N40SISO  | Ant2    | 5510    | 38.93    | 36.103   | PASS    |
| 11N40SISO  | Ant2    | 5550    | 38.93    | 36.250   | PASS    |
| 11N40SISO  | Ant2    | 5670    | 42.06    | 36.276   | PASS    |
| 11N40SISO  | Ant2    | 5755    | 36.33    | 36.162   | PASS    |
| 11N40SISO  | Ant2    | 5795    | 35.80    | 36.178   | PASS    |
| 11AC40SISO | Ant2    | 5190    | 47.18    | 36.186   | PASS    |
| 11AC40SISO | Ant2    | 5230    | 39.33    | 36.144   | PASS    |
| 11AC40SISO | Ant2    | 5270    | 40.28    | 36.165   | PASS    |
| 11AC40SISO | Ant2    | 5310    | 39.25    | 36.100   | PASS    |
| 11AC40SISO | Ant2    | 5510    | 39.17    | 36.108   | PASS    |
| 11AC40SISO | Ant2    | 5550    | 40.05    | 36.130   | PASS    |
| 11AC40SISO | Ant2    | 5670    | 39.50    | 36.207   | PASS    |
| 11AC40SISO | Ant2    | 5755    | 35.80    | 36.237   | PASS    |
| 11AC40SISO | Ant2    | 5795    | 35.08    | 36.239   | PASS    |
| Test Mode  | Antenna | Channel | EBW[MHz] | OBW[MHz] | Verdict |
| 11AC80SISO | Ant2    | 5210    | 80.59    | 75.397   | PASS    |
| 11AC80SISO | Ant2    | 5290    | 80.16    | 75.513   | PASS    |
| 11AC80SISO | Ant2    | 5530    | 79.75    | 75.479   | PASS    |
| 11AC80SISO | Ant2    | 5775    | 75.34    | 75.824   | PASS    |

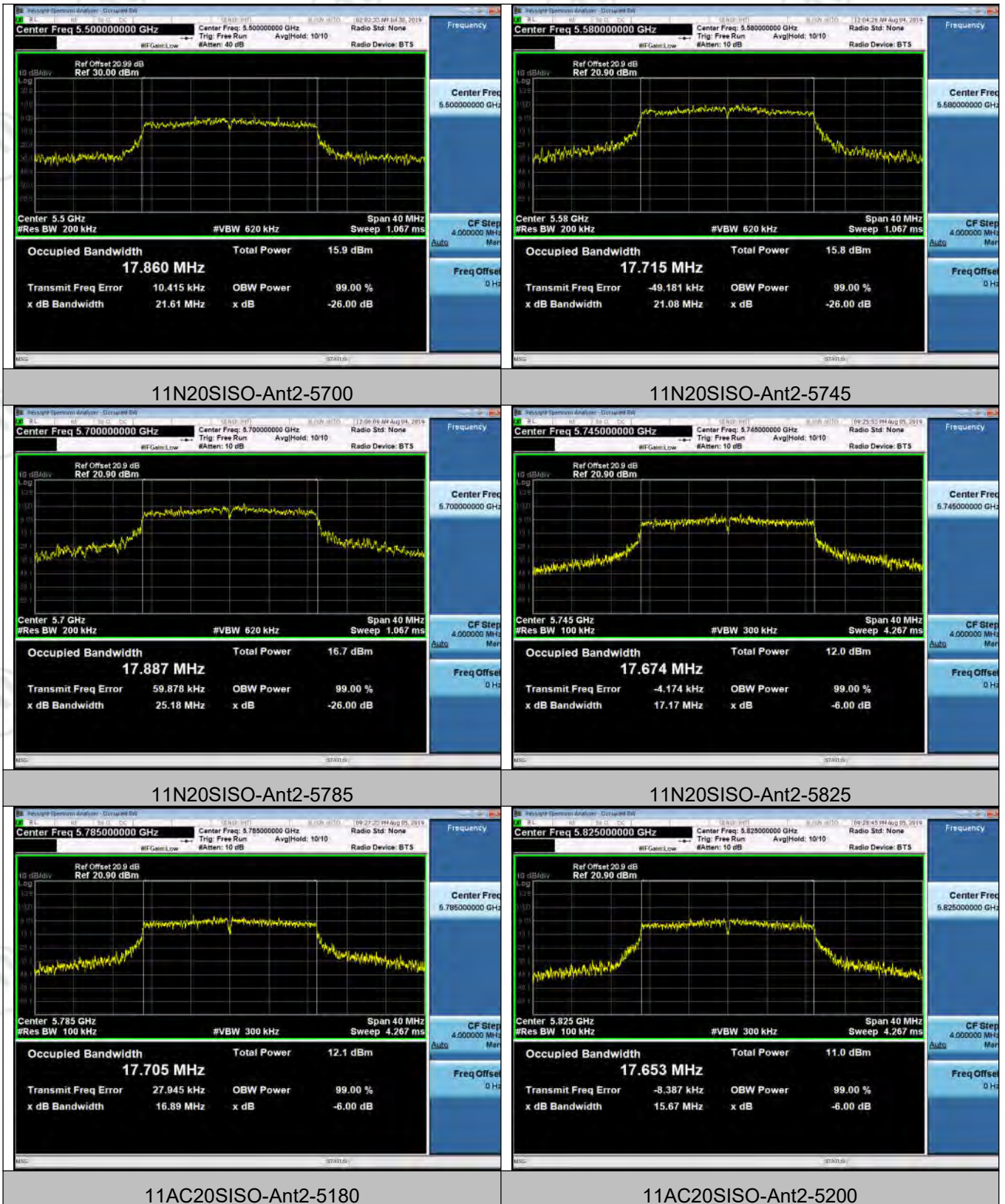
**Test Graph**

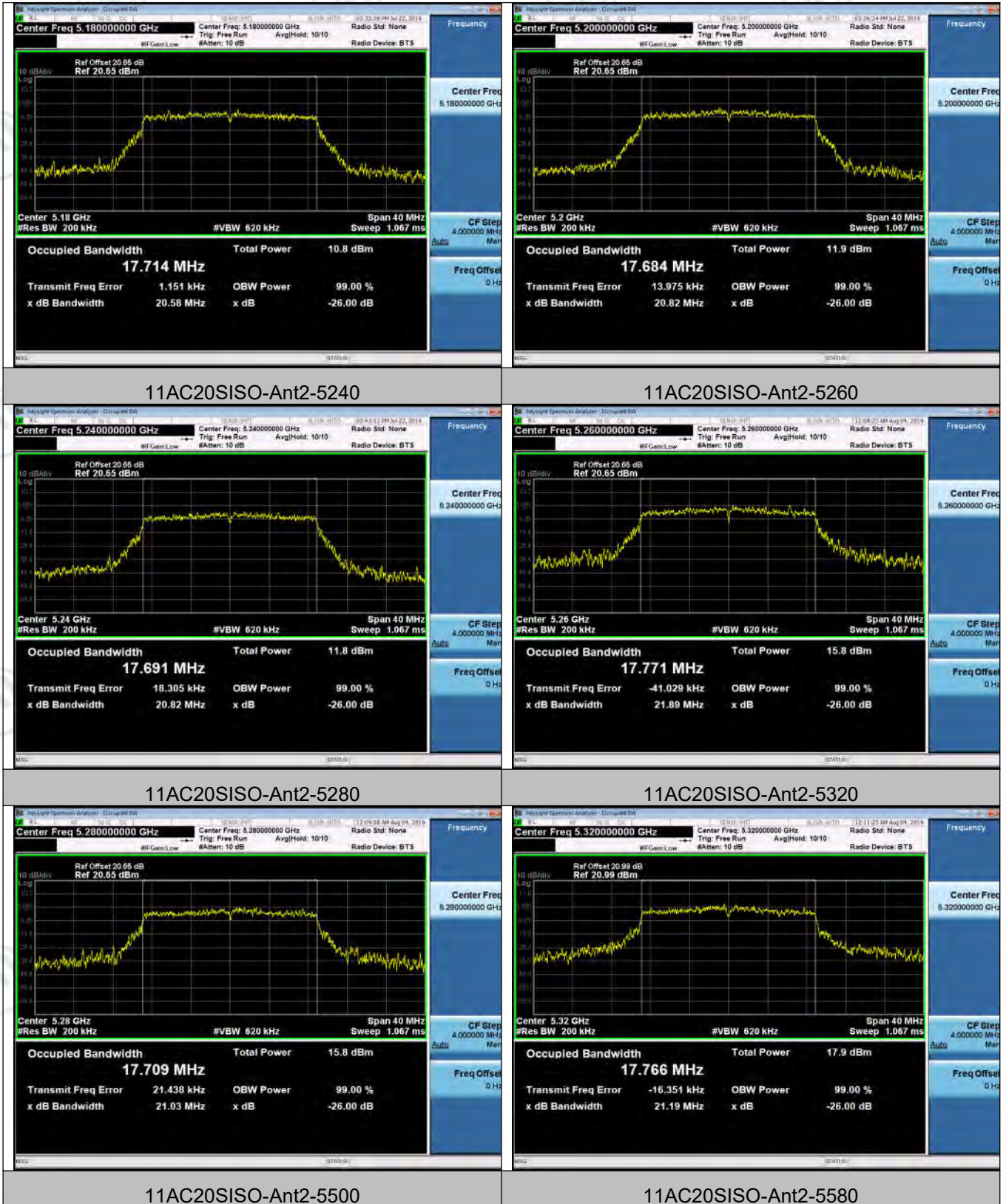


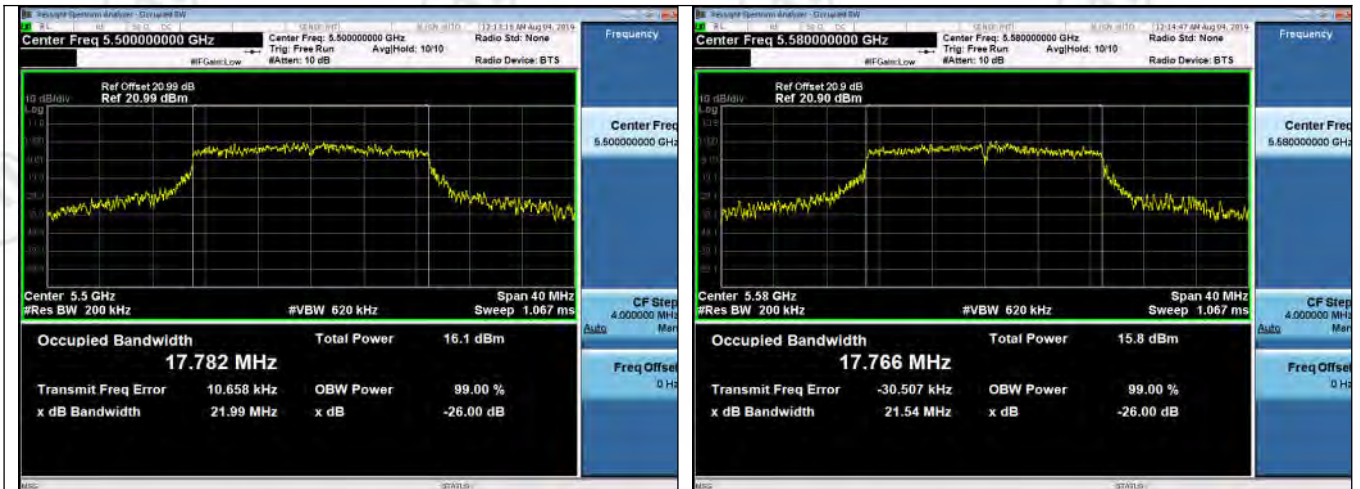






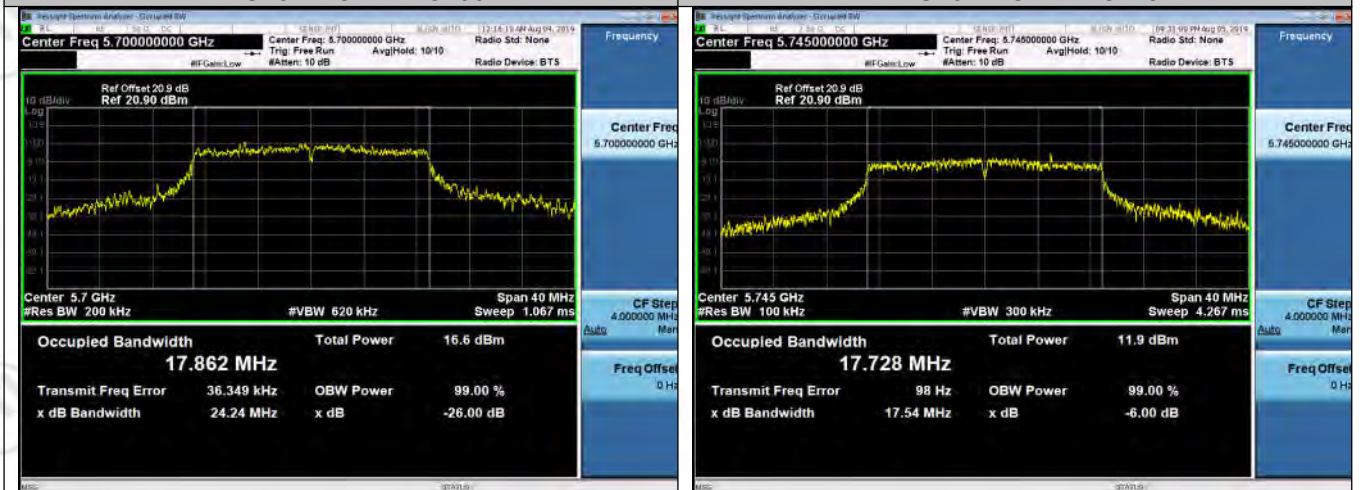






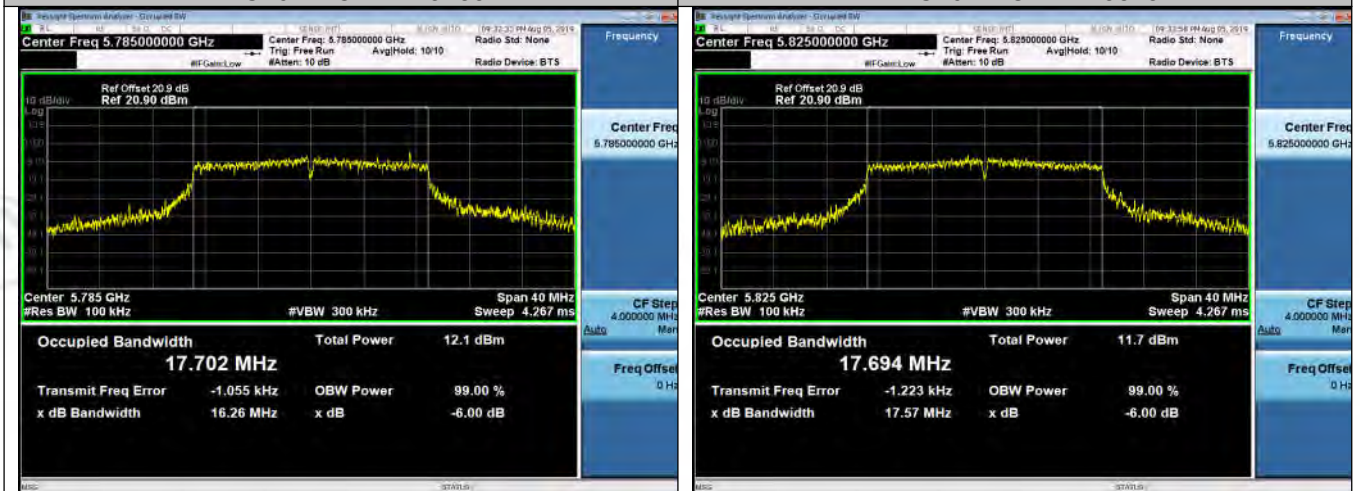
11AC20SISO-Ant2-5700

11AC20SISO-Ant2-5745



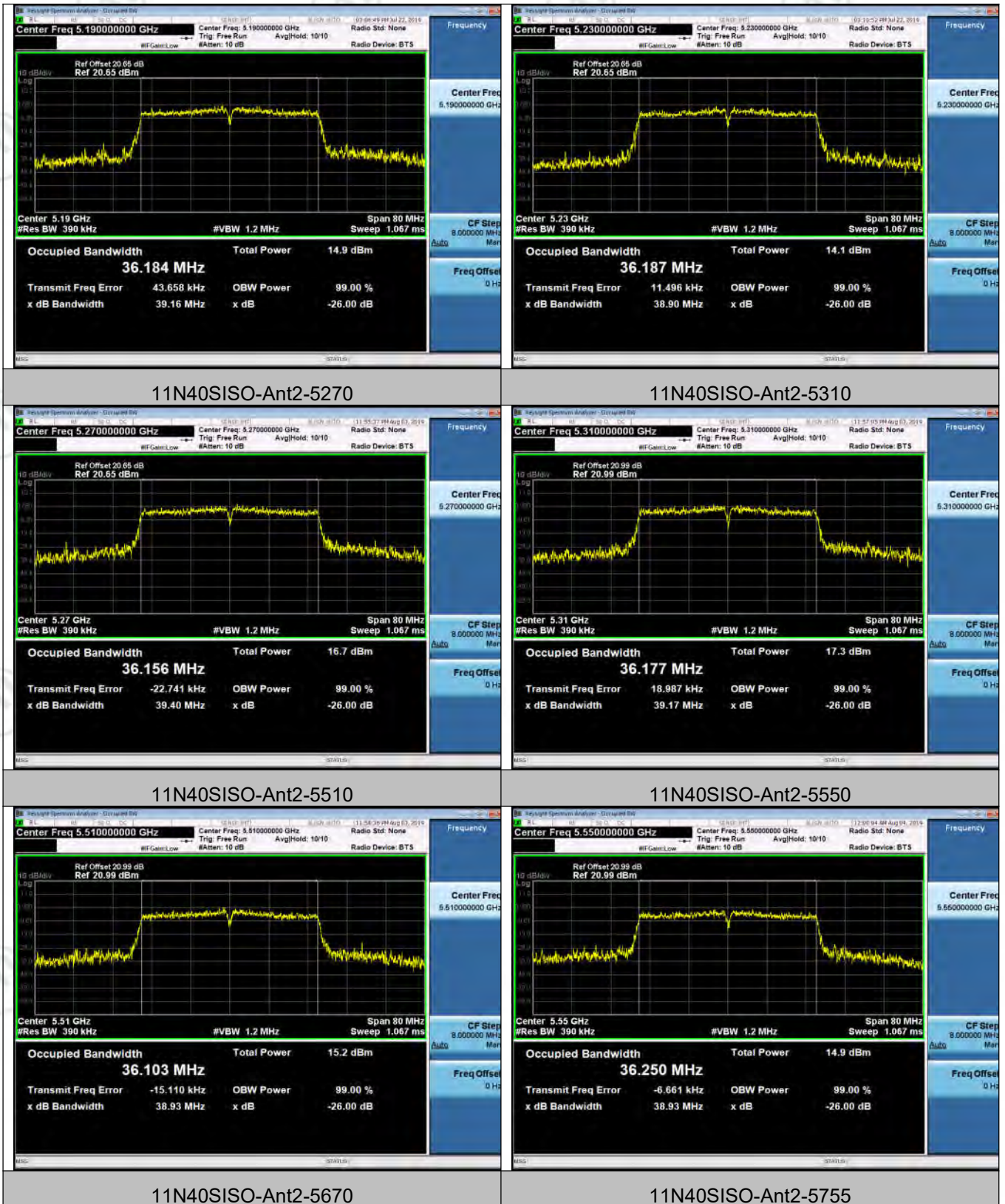
11AC20SISO-Ant2-5785

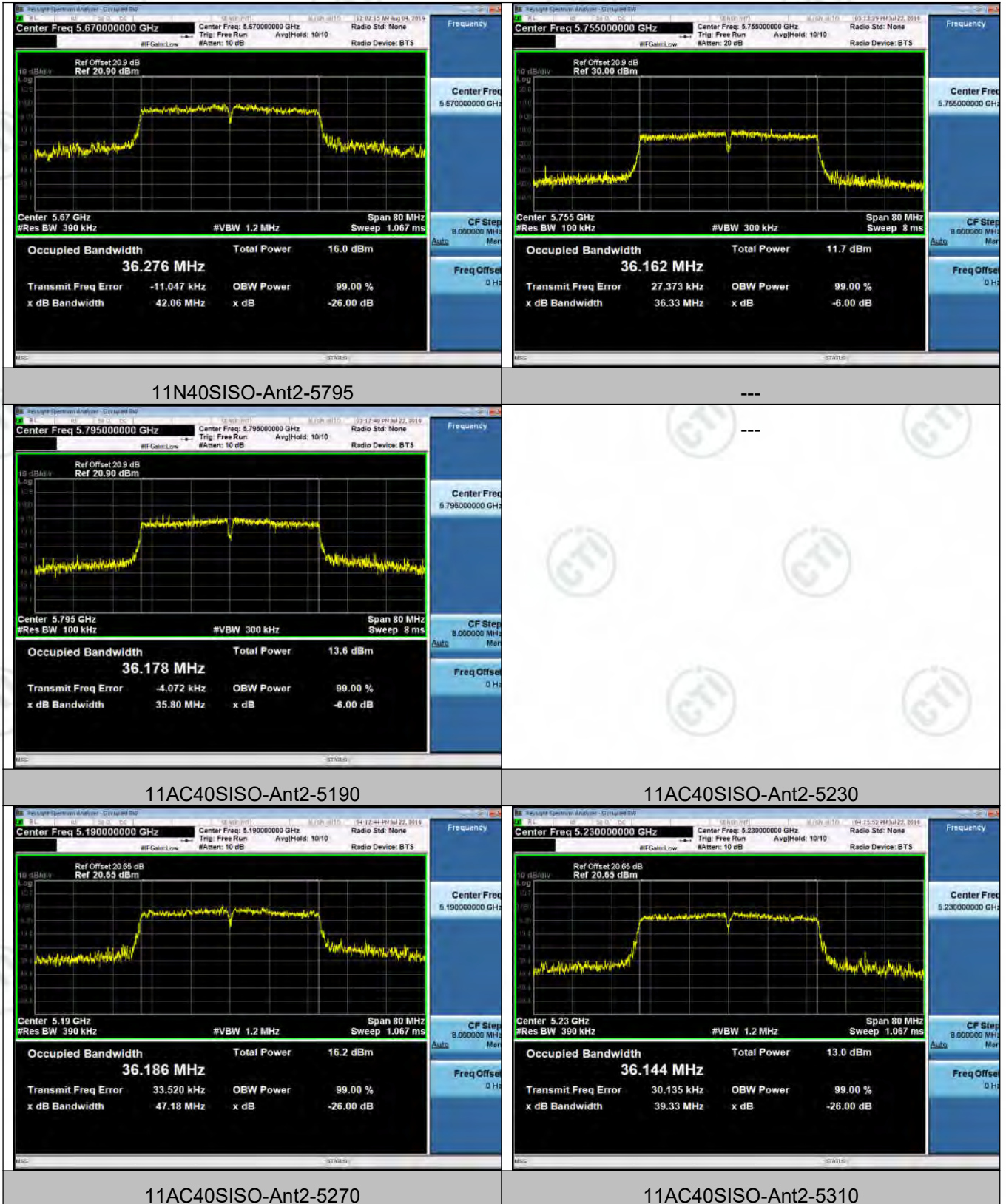
11AC20SISO-Ant2-5825

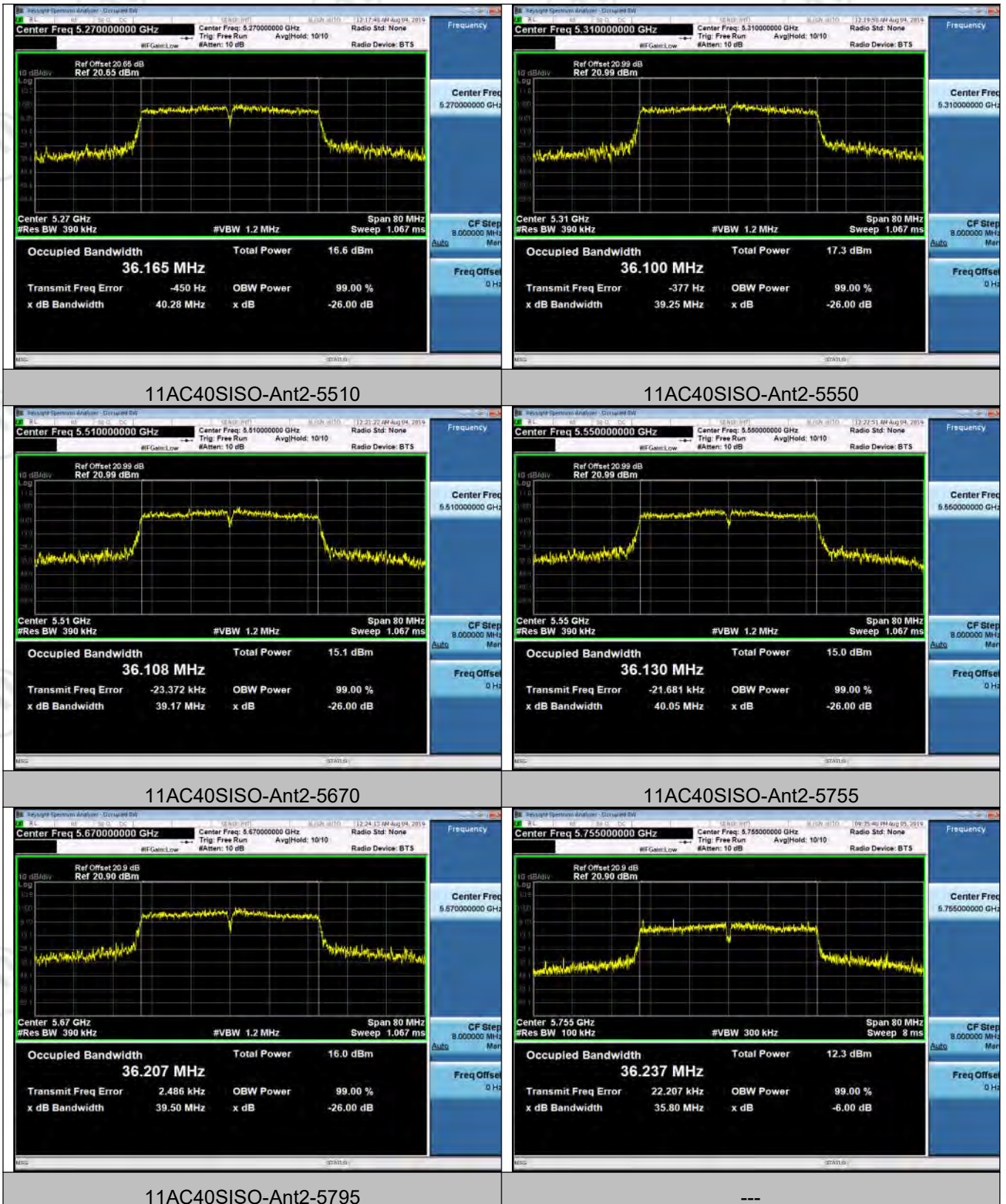


11N40SISO-Ant2-5190

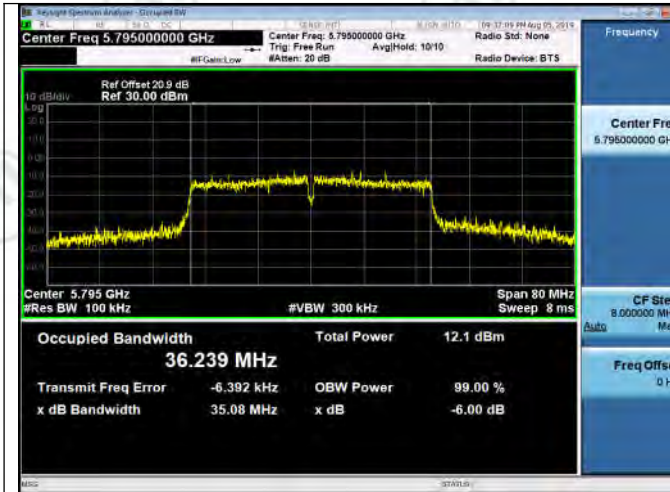
11N40SISO-Ant2-5230







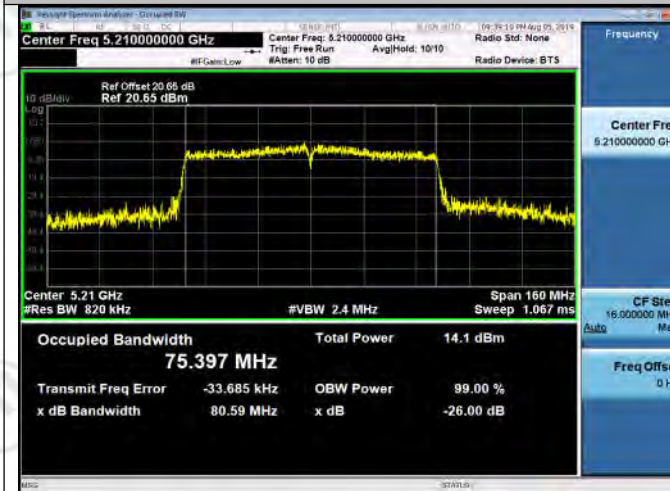




11AC80SISO-Ant2-5210



11AC80SISO-Ant2-5290



11AC80SISO-Ant2-5530



11AC80SISO-Ant2-5775

Ant 1:

## Appendix B): Maximum Conduct Output Power

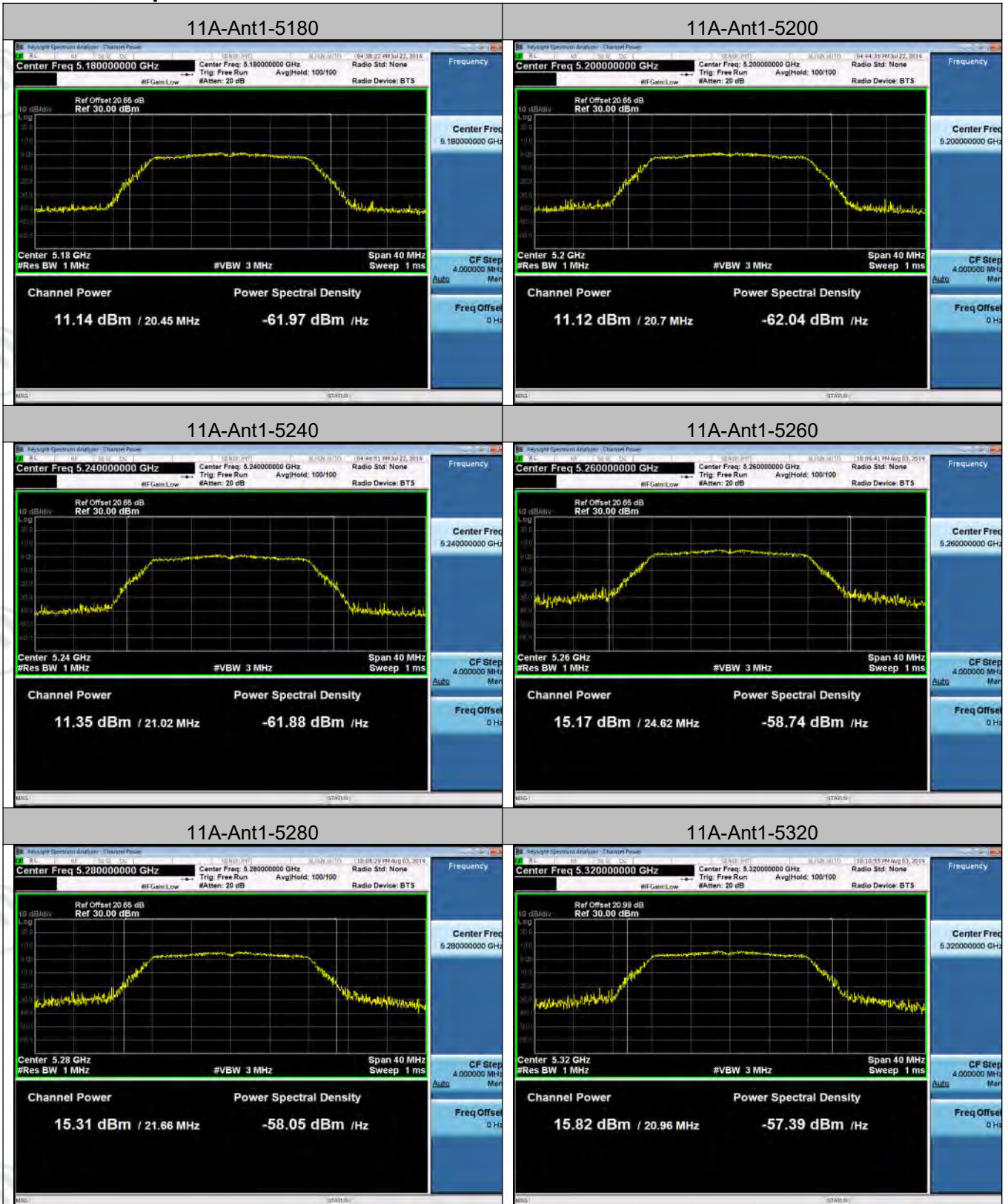
**Result Table**

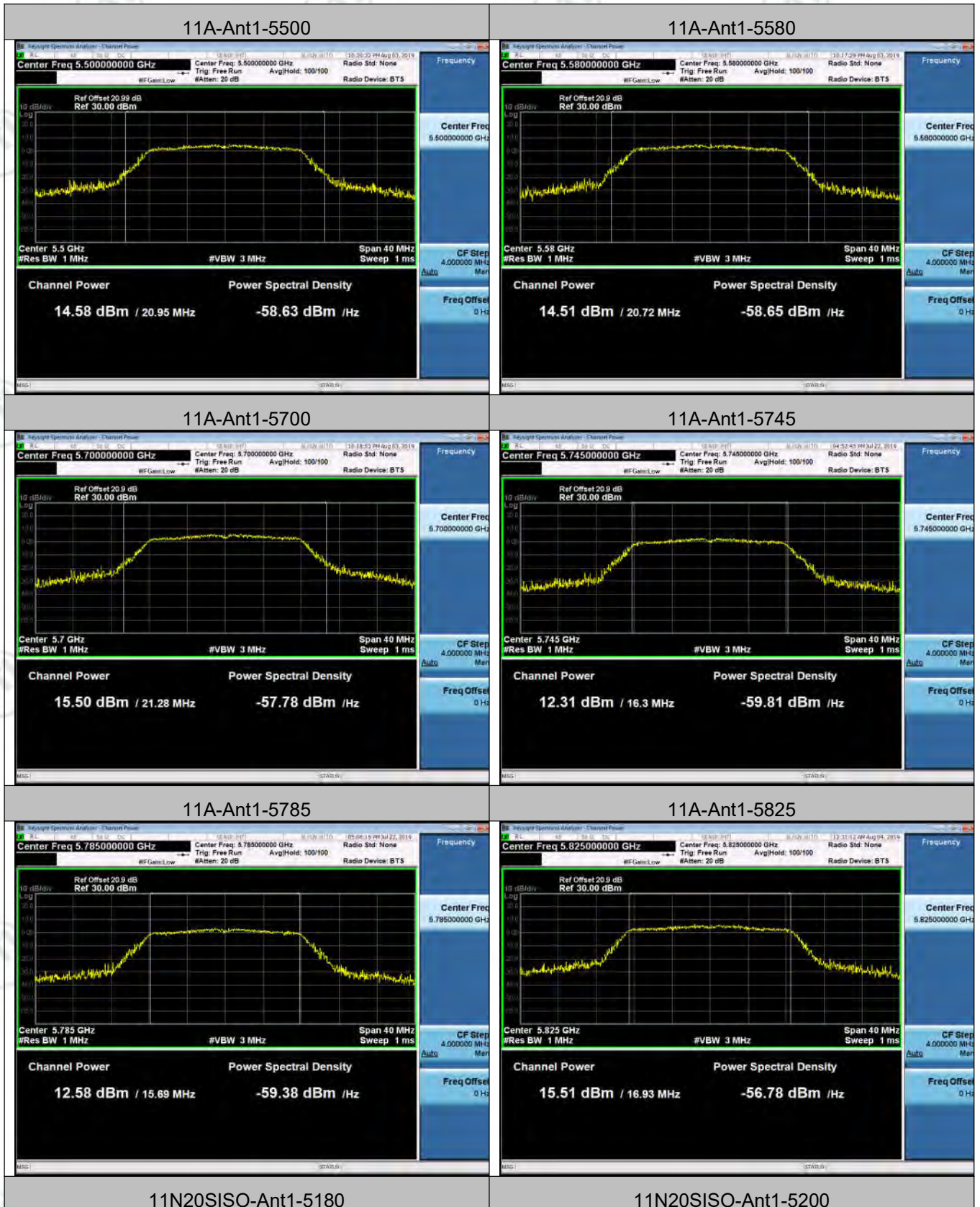
| Test Mode | Antenna | Channel | Meas.Level [dBm] | Av.Power [dBm] | Verdict |
|-----------|---------|---------|------------------|----------------|---------|
| 11A       | Ant1    | 5180    | 11.14            | 11.2           | PASS    |
| 11A       | Ant1    | 5200    | 11.12            | 11.18          | PASS    |
| 11A       | Ant1    | 5240    | 11.35            | 11.41          | PASS    |
| 11A       | Ant1    | 5260    | 15.17            | 15.22          | PASS    |
| 11A       | Ant1    | 5280    | 15.31            | 15.37          | PASS    |
| 11A       | Ant1    | 5320    | 15.82            | 15.88          | PASS    |
| 11A       | Ant1    | 5500    | 14.58            | 14.63          | PASS    |
| 11A       | Ant1    | 5580    | 14.51            | 14.57          | PASS    |
| 11A       | Ant1    | 5700    | 15.5             | 15.55          | PASS    |
| 11A       | Ant1    | 5745    | 12.31            | 12.37          | PASS    |
| 11A       | Ant1    | 5785    | 12.58            | 12.64          | PASS    |
| 11A       | Ant1    | 5825    | 15.51            | 15.57          | PASS    |
| 11N20SISO | Ant1    | 5180    | 10.77            | 10.83          | PASS    |
| 11N20SISO | Ant1    | 5200    | 11.8             | 11.86          | PASS    |
| 11N20SISO | Ant1    | 5240    | 11.76            | 11.82          | PASS    |
| 11N20SISO | Ant1    | 5260    | 14.93            | 14.99          | PASS    |
| 11N20SISO | Ant1    | 5280    | 15.11            | 15.17          | PASS    |
| 11N20SISO | Ant1    | 5320    | 15.55            | 15.61          | PASS    |
| 11N20SISO | Ant1    | 5500    | 14.23            | 14.29          | PASS    |
| 11N20SISO | Ant1    | 5580    | 14.24            | 14.3           | PASS    |
| 11N20SISO | Ant1    | 5700    | 15.12            | 15.18          | PASS    |
| 11N20SISO | Ant1    | 5745    | 15.18            | 15.24          | PASS    |
| 11N20SISO | Ant1    | 5785    | 15.62            | 15.68          | PASS    |
| 11N20SISO | Ant1    | 5825    | 14.67            | 14.73          | PASS    |

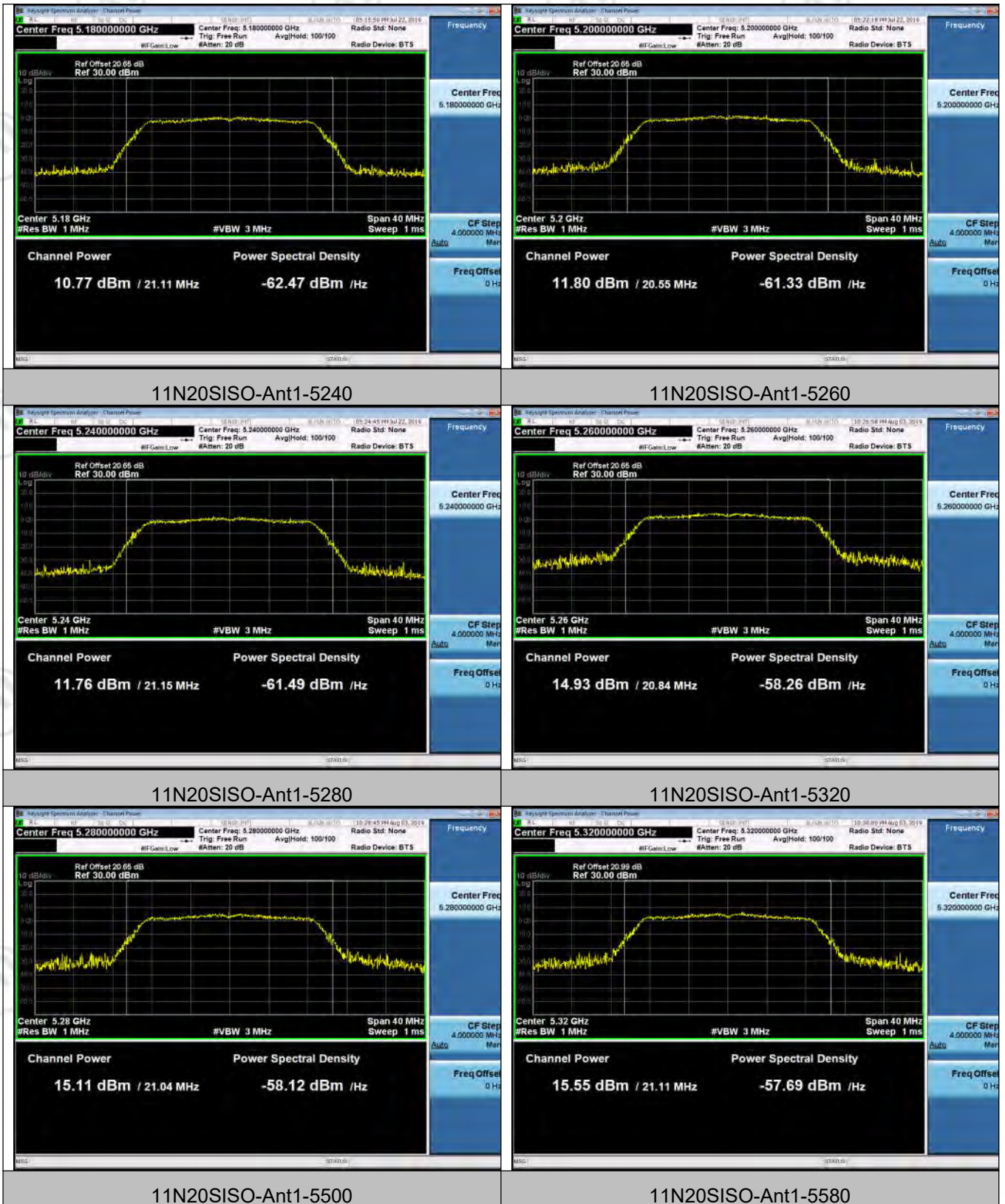
|            |      |      |       |       |      |
|------------|------|------|-------|-------|------|
| 11AC20SISO | Ant1 | 5180 | 11.84 | 11.9  | PASS |
| 11AC20SISO | Ant1 | 5200 | 11.4  | 11.46 | PASS |
| 11AC20SISO | Ant1 | 5240 | 12.18 | 12.24 | PASS |
| 11AC20SISO | Ant1 | 5260 | 14.81 | 14.87 | PASS |
| 11AC20SISO | Ant1 | 5280 | 15.12 | 15.18 | PASS |
| 11AC20SISO | Ant1 | 5320 | 15.45 | 15.51 | PASS |
| 11AC20SISO | Ant1 | 5500 | 14.31 | 14.37 | PASS |
| 11AC20SISO | Ant1 | 5580 | 13.92 | 13.98 | PASS |
| 11AC20SISO | Ant1 | 5700 | 15.03 | 15.09 | PASS |
| 11AC20SISO | Ant1 | 5745 | 15.11 | 15.17 | PASS |
| 11AC20SISO | Ant1 | 5785 | 15.28 | 15.34 | PASS |
| 11AC20SISO | Ant1 | 5825 | 15.23 | 15.29 | PASS |
| 11N40SISO  | Ant1 | 5190 | 13.94 | 14.07 | PASS |
| 11N40SISO  | Ant1 | 5230 | 13.9  | 14.02 | PASS |
| 11N40SISO  | Ant1 | 5270 | 15.12 | 15.24 | PASS |
| 11N40SISO  | Ant1 | 5310 | 15.75 | 15.88 | PASS |
| 11N40SISO  | Ant1 | 5510 | 13.55 | 13.67 | PASS |
| 11N40SISO  | Ant1 | 5550 | 13.4  | 13.52 | PASS |
| 11N40SISO  | Ant1 | 5670 | 14.47 | 14.59 | PASS |
| 11N40SISO  | Ant1 | 5755 | 13.24 | 13.36 | PASS |
| 11N40SISO  | Ant1 | 5795 | 13.16 | 13.29 | PASS |
| 11AC40SISO | Ant1 | 5190 | 13.89 | 14.02 | PASS |
| 11AC40SISO | Ant1 | 5230 | 14.16 | 14.27 | PASS |
| 11AC40SISO | Ant1 | 5270 | 14.98 | 15.09 | PASS |
| 11AC40SISO | Ant1 | 5310 | 15.76 | 15.89 | PASS |
| 11AC40SISO | Ant1 | 5510 | 13.49 | 13.6  | PASS |
| 11AC40SISO | Ant1 | 5550 | 14.52 | 14.65 | PASS |
| 11AC40SISO | Ant1 | 5670 | 14.5  | 14.63 | PASS |

|            |      |      |       |       |      |
|------------|------|------|-------|-------|------|
| 11AC40SISO | Ant1 | 5755 | 15.11 | 15.24 | PASS |
| 11AC40SISO | Ant1 | 5795 | 15.22 | 15.35 | PASS |
| 11AC80SISO | Ant1 | 5210 | 10.33 | 10.59 | PASS |
| 11AC80SISO | Ant1 | 5290 | 10.74 | 11    | PASS |
| 11AC80SISO | Ant1 | 5530 | 6.78  | 7.01  | PASS |
| 11AC80SISO | Ant1 | 5775 | 12.56 | 12.82 | PASS |

**Test Graph**

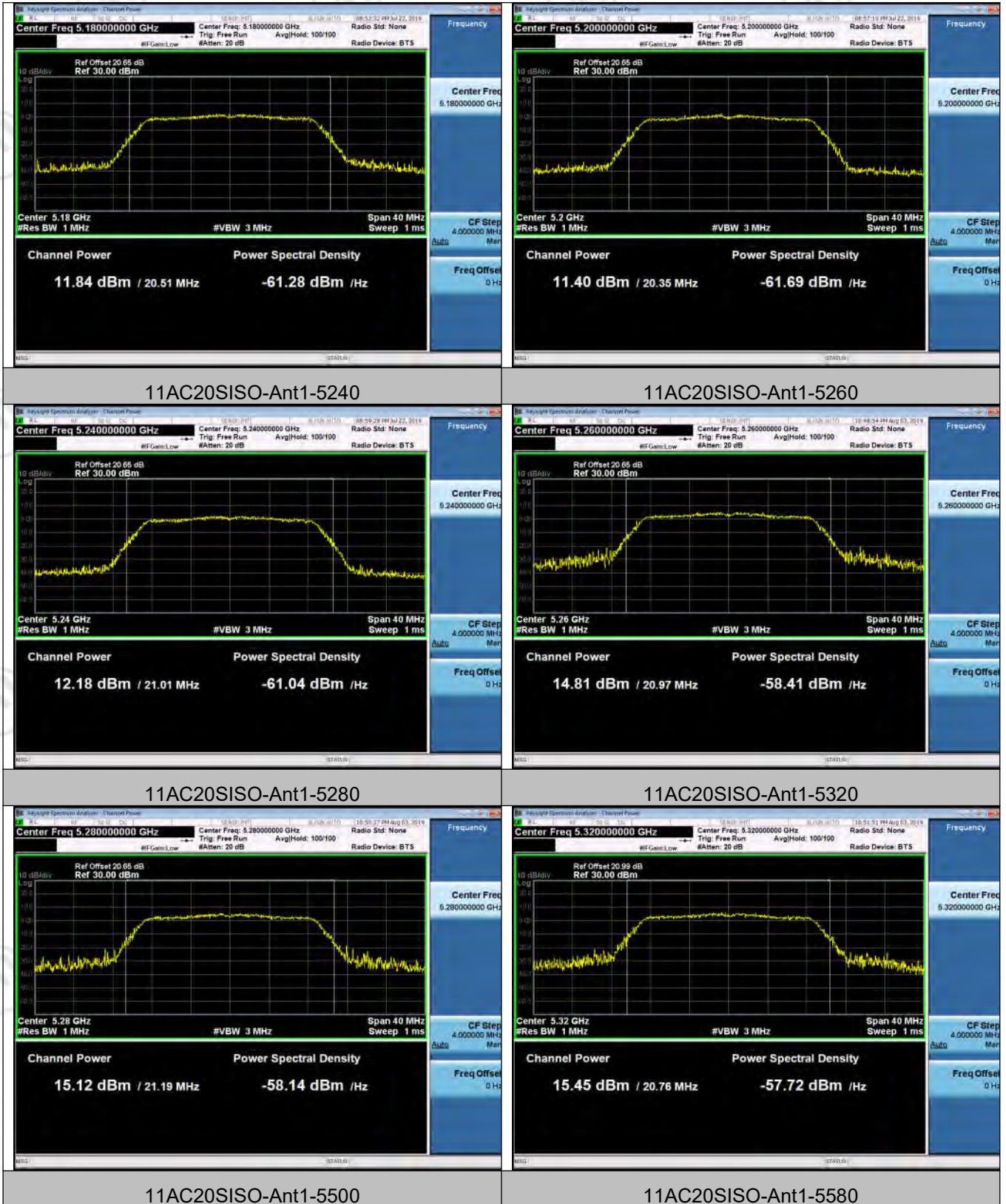








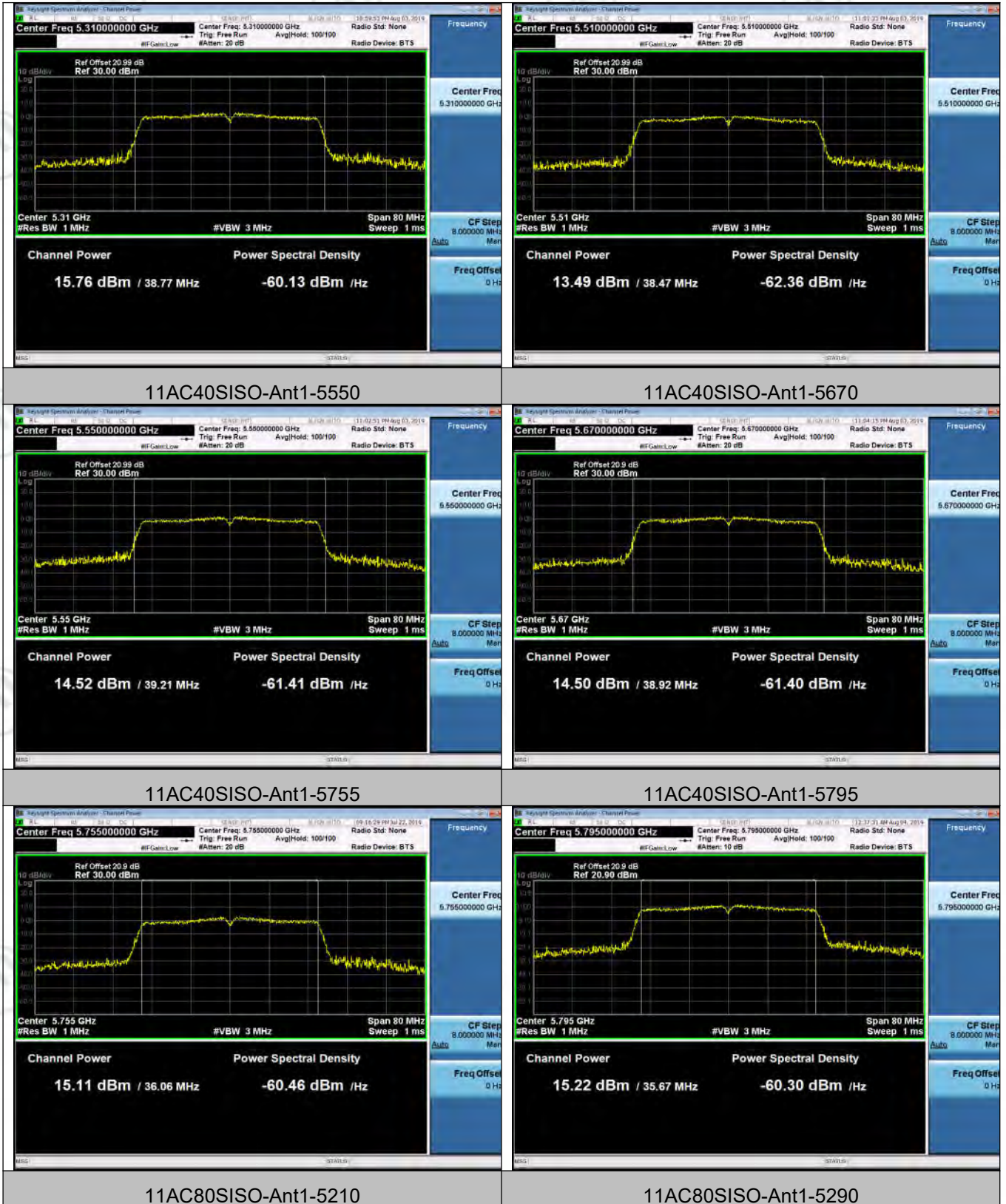


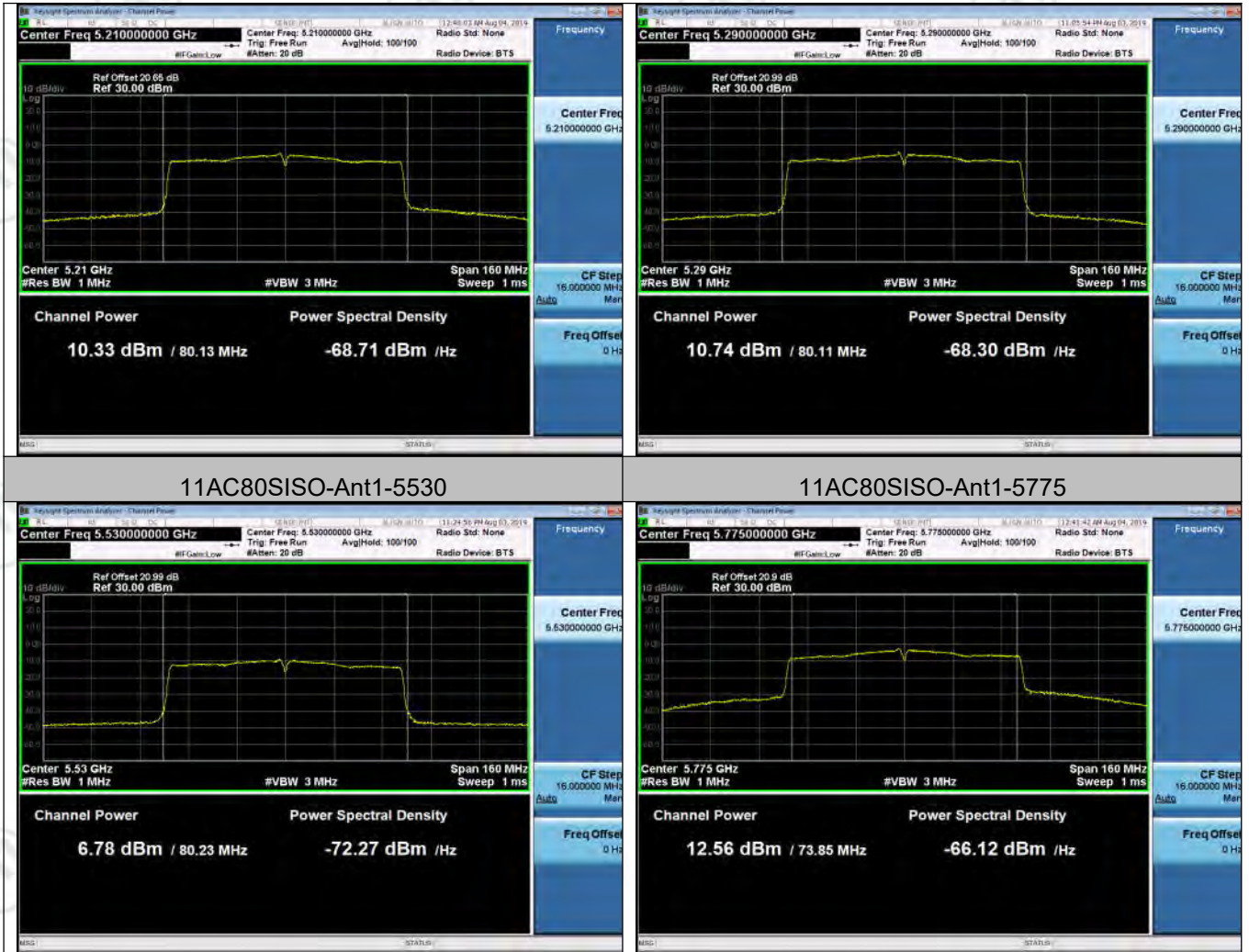












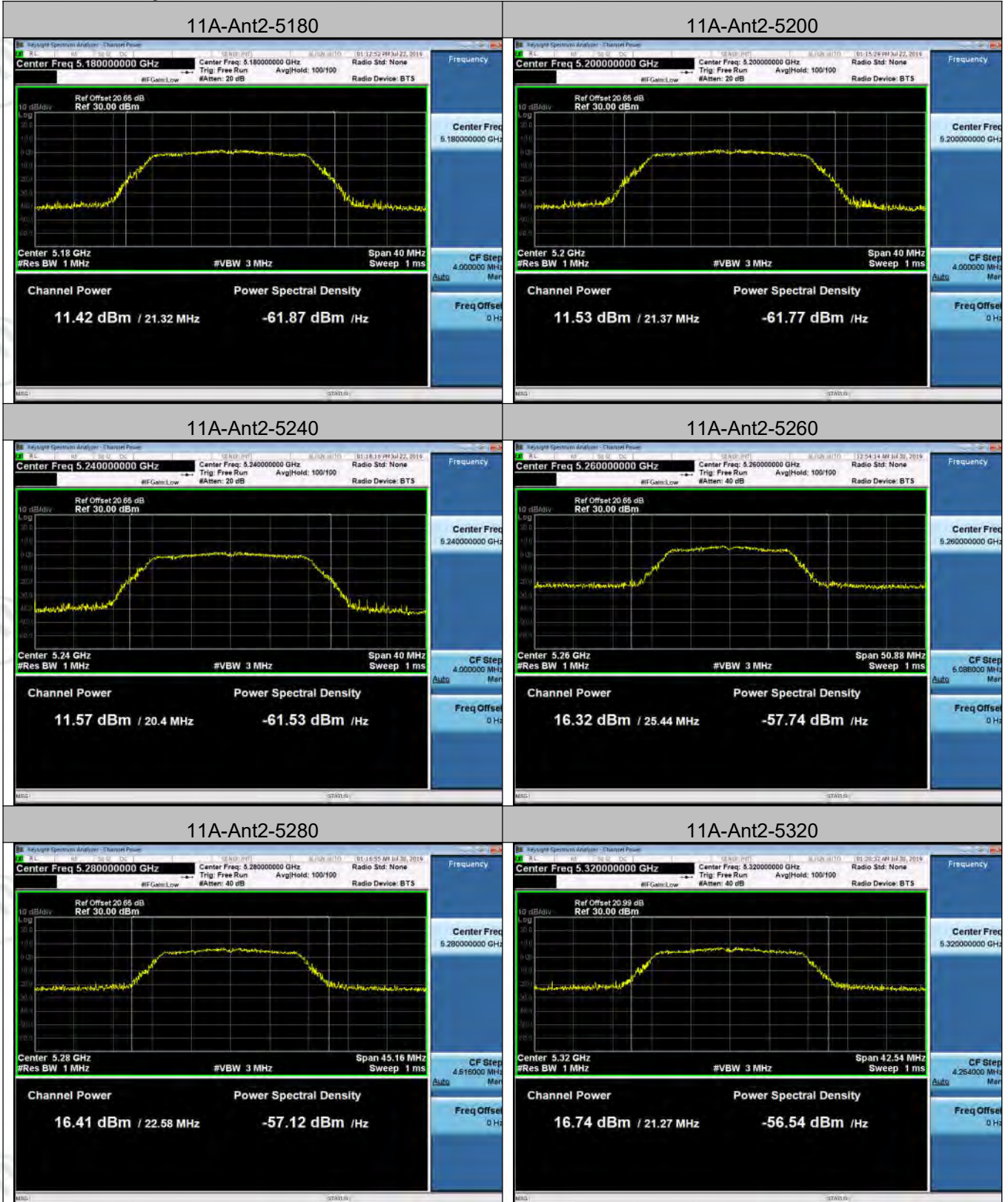
**Ant 2:**

| Test Mode  | Antenna | Channel | Meas.Level [dBm] | Av.Power [dBm] | Verdict |
|------------|---------|---------|------------------|----------------|---------|
| 11A        | Ant2    | 5180    | 11.42            | 11.48          | PASS    |
| 11A        | Ant2    | 5200    | 11.53            | 11.58          | PASS    |
| 11A        | Ant2    | 5240    | 11.57            | 11.62          | PASS    |
| 11A        | Ant2    | 5260    | 16.32            | 16.37          | PASS    |
| 11A        | Ant2    | 5280    | 16.41            | 16.46          | PASS    |
| 11A        | Ant2    | 5320    | 16.74            | 16.79          | PASS    |
| 11A        | Ant2    | 5500    | 15.59            | 15.64          | PASS    |
| 11A        | Ant2    | 5580    | 14.51            | 14.57          | PASS    |
| 11A        | Ant2    | 5700    | 17.36            | 17.42          | PASS    |
| 11A        | Ant2    | 5745    | 12.71            | 12.77          | PASS    |
| 11A        | Ant2    | 5785    | 12.75            | 12.81          | PASS    |
| 11A        | Ant2    | 5825    | 12.34            | 12.4           | PASS    |
| 11N20SISO  | Ant2    | 5180    | 11.73            | 11.79          | PASS    |
| 11N20SISO  | Ant2    | 5200    | 12               | 12.06          | PASS    |
| 11N20SISO  | Ant2    | 5240    | 11.89            | 11.95          | PASS    |
| 11N20SISO  | Ant2    | 5260    | 15.87            | 15.93          | PASS    |
| 11N20SISO  | Ant2    | 5280    | 15.89            | 15.95          | PASS    |
| 11N20SISO  | Ant2    | 5320    | 16.34            | 16.4           | PASS    |
| 11N20SISO  | Ant2    | 5500    | 15.9             | 15.96          | PASS    |
| 11N20SISO  | Ant2    | 5580    | 15.72            | 15.78          | PASS    |
| 11N20SISO  | Ant2    | 5700    | 16.64            | 16.7           | PASS    |
| 11N20SISO  | Ant2    | 5745    | 11.82            | 11.88          | PASS    |
| 11N20SISO  | Ant2    | 5785    | 11.96            | 12.02          | PASS    |
| 11N20SISO  | Ant2    | 5825    | 10.38            | 10.44          | PASS    |
| 11AC20SISO | Ant2    | 5180    | 11.76            | 11.82          | PASS    |
| 11AC20SISO | Ant2    | 5200    | 11.98            | 12.04          | PASS    |
| 11AC20SISO | Ant2    | 5240    | 10.73            | 10.79          | PASS    |
| 11AC20SISO | Ant2    | 5260    | 15.75            | 15.81          | PASS    |
| 11AC20SISO | Ant2    | 5280    | 15.76            | 15.82          | PASS    |
| 11AC20SISO | Ant2    | 5320    | 17.92            | 17.98          | PASS    |

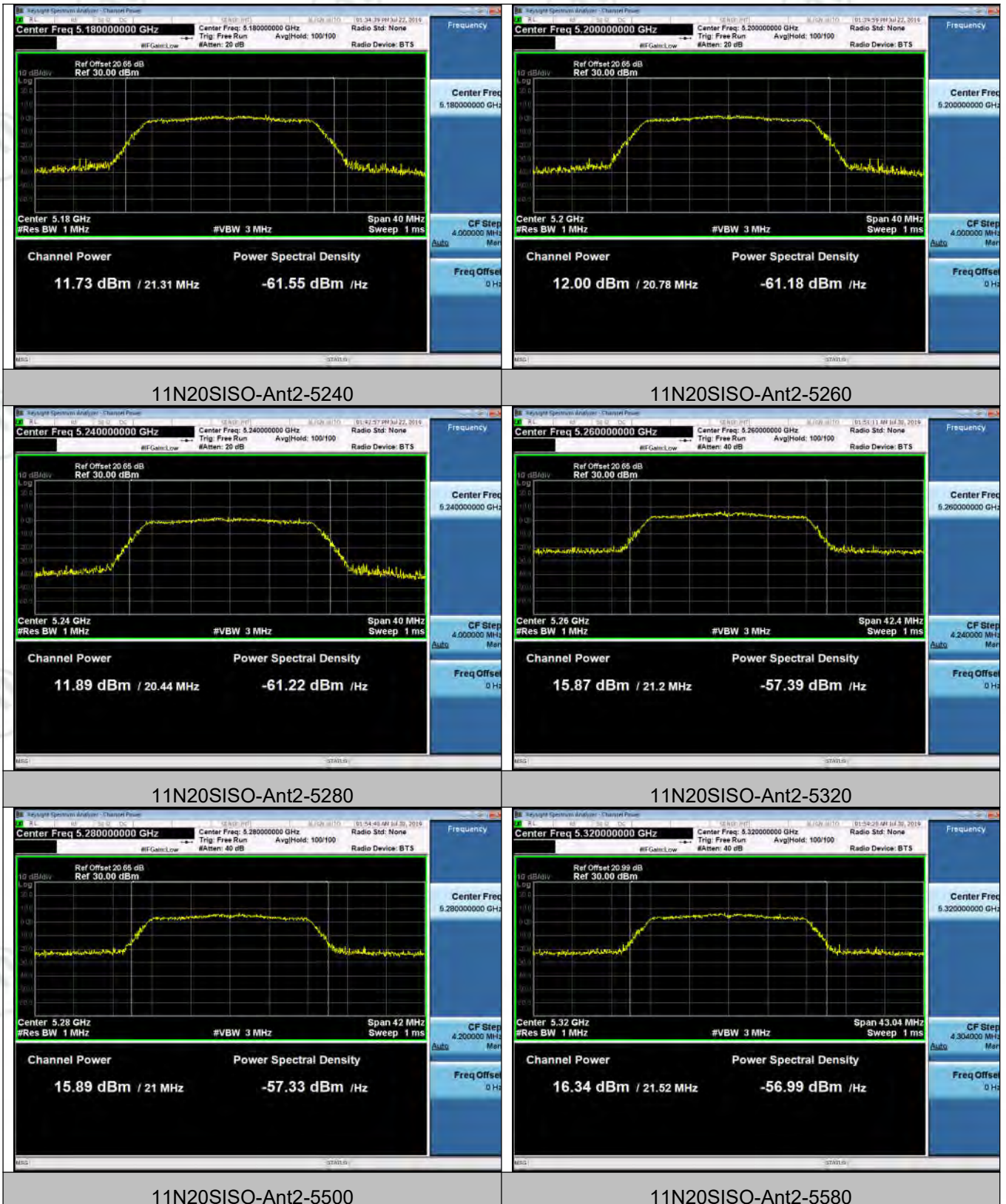
|            |      |      |       |       |      |
|------------|------|------|-------|-------|------|
| 11AC20SISO | Ant2 | 5500 | 16.18 | 16.24 | PASS |
| 11AC20SISO | Ant2 | 5580 | 15.83 | 15.89 | PASS |
| 11AC20SISO | Ant2 | 5700 | 16.5  | 16.56 | PASS |
| 11AC20SISO | Ant2 | 5745 | 11.82 | 11.88 | PASS |
| 11AC20SISO | Ant2 | 5785 | 11.79 | 11.85 | PASS |
| 11AC20SISO | Ant2 | 5825 | 11.64 | 11.7  | PASS |
| 11N40SISO  | Ant2 | 5190 | 14    | 14.13 | PASS |
| 11N40SISO  | Ant2 | 5230 | 14.07 | 14.19 | PASS |
| 11N40SISO  | Ant2 | 5270 | 16.61 | 16.74 | PASS |
| 11N40SISO  | Ant2 | 5310 | 17.4  | 17.51 | PASS |
| 11N40SISO  | Ant2 | 5510 | 15.19 | 15.31 | PASS |
| 11N40SISO  | Ant2 | 5550 | 15.07 | 15.19 | PASS |
| 11N40SISO  | Ant2 | 5670 | 16.13 | 16.26 | PASS |
| 11N40SISO  | Ant2 | 5755 | 13.49 | 13.62 | PASS |
| 11N40SISO  | Ant2 | 5795 | 13.56 | 13.69 | PASS |
| 11AC40SISO | Ant2 | 5190 | 13.14 | 13.25 | PASS |
| 11AC40SISO | Ant2 | 5230 | 13.13 | 13.24 | PASS |
| 11AC40SISO | Ant2 | 5270 | 16.7  | 16.81 | PASS |
| 11AC40SISO | Ant2 | 5310 | 17.35 | 17.46 | PASS |
| 11AC40SISO | Ant2 | 5510 | 15.2  | 15.31 | PASS |
| 11AC40SISO | Ant2 | 5550 | 15.2  | 15.33 | PASS |
| 11AC40SISO | Ant2 | 5670 | 16.1  | 16.21 | PASS |
| 11AC40SISO | Ant2 | 5755 | 12.1  | 12.21 | PASS |
| 11AC40SISO | Ant2 | 5795 | 12.4  | 12.51 | PASS |
| 11AC80SISO | Ant2 | 5210 | 9.19  | 9.42  | PASS |
| 11AC80SISO | Ant2 | 5290 | 12.43 | 12.66 | PASS |
| 11AC80SISO | Ant2 | 5530 | 10.13 | 10.36 | PASS |
| 11AC80SISO | Ant2 | 5775 | 8.9   | 9.13  | PASS |

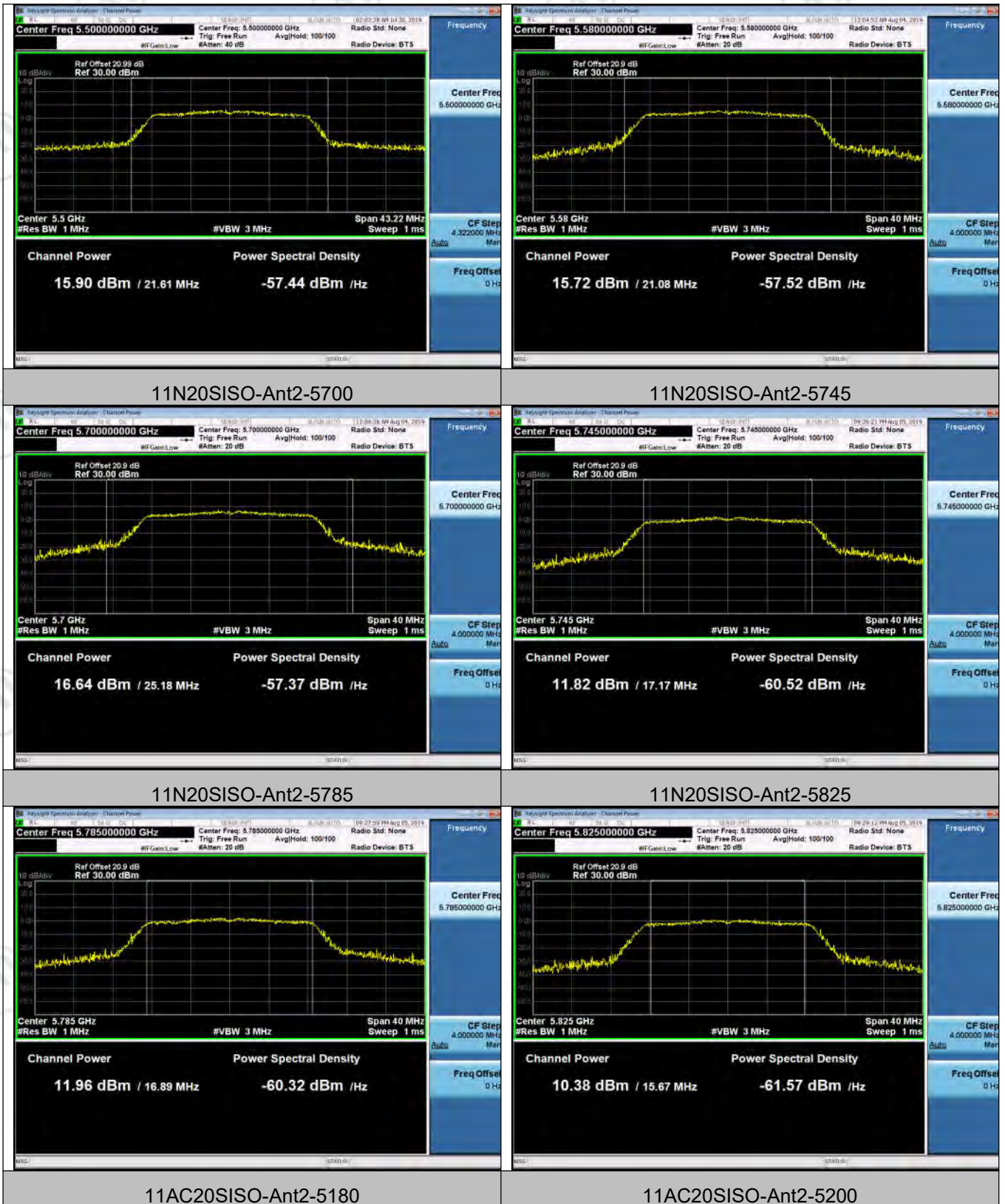


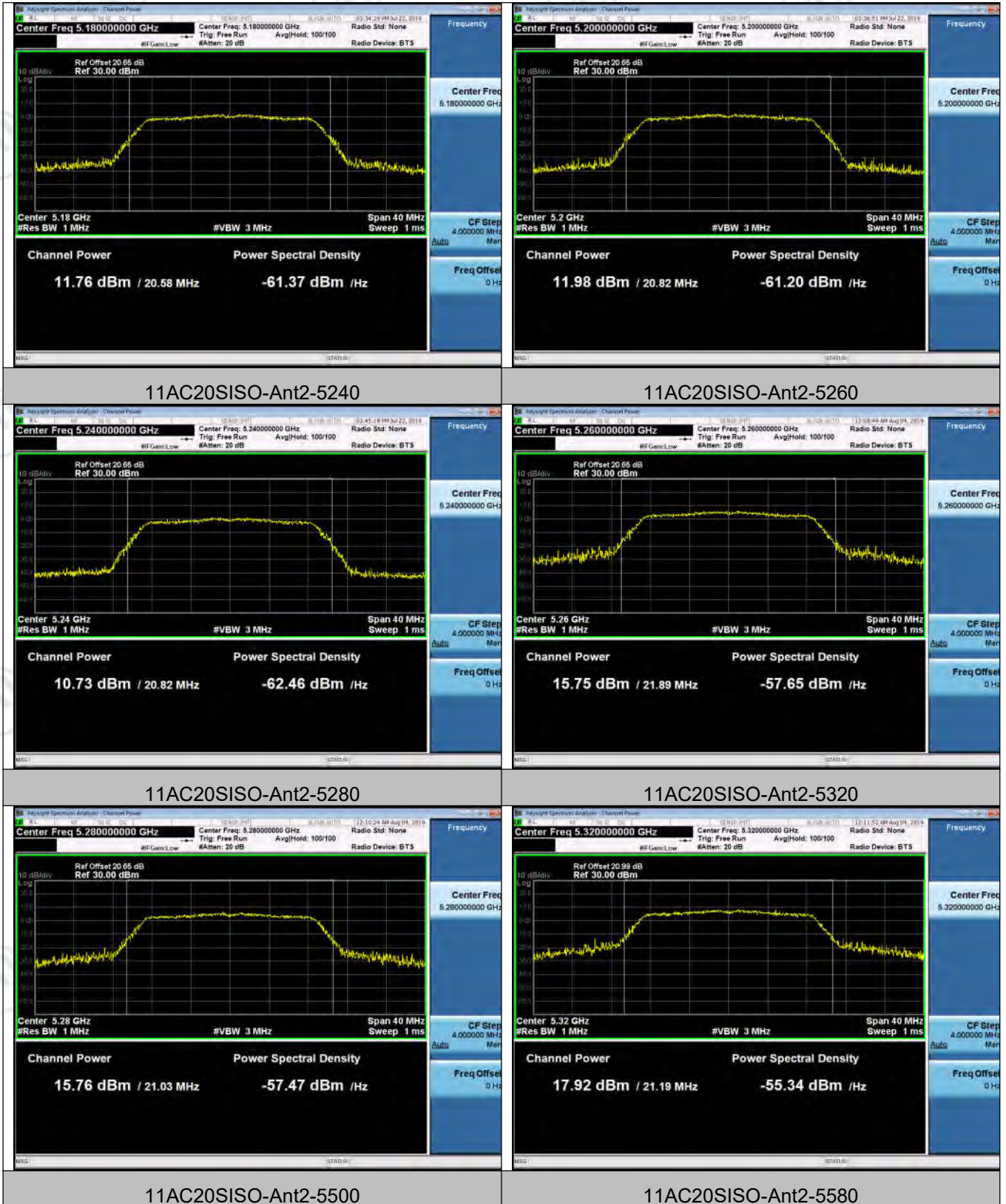
**Test Graph**

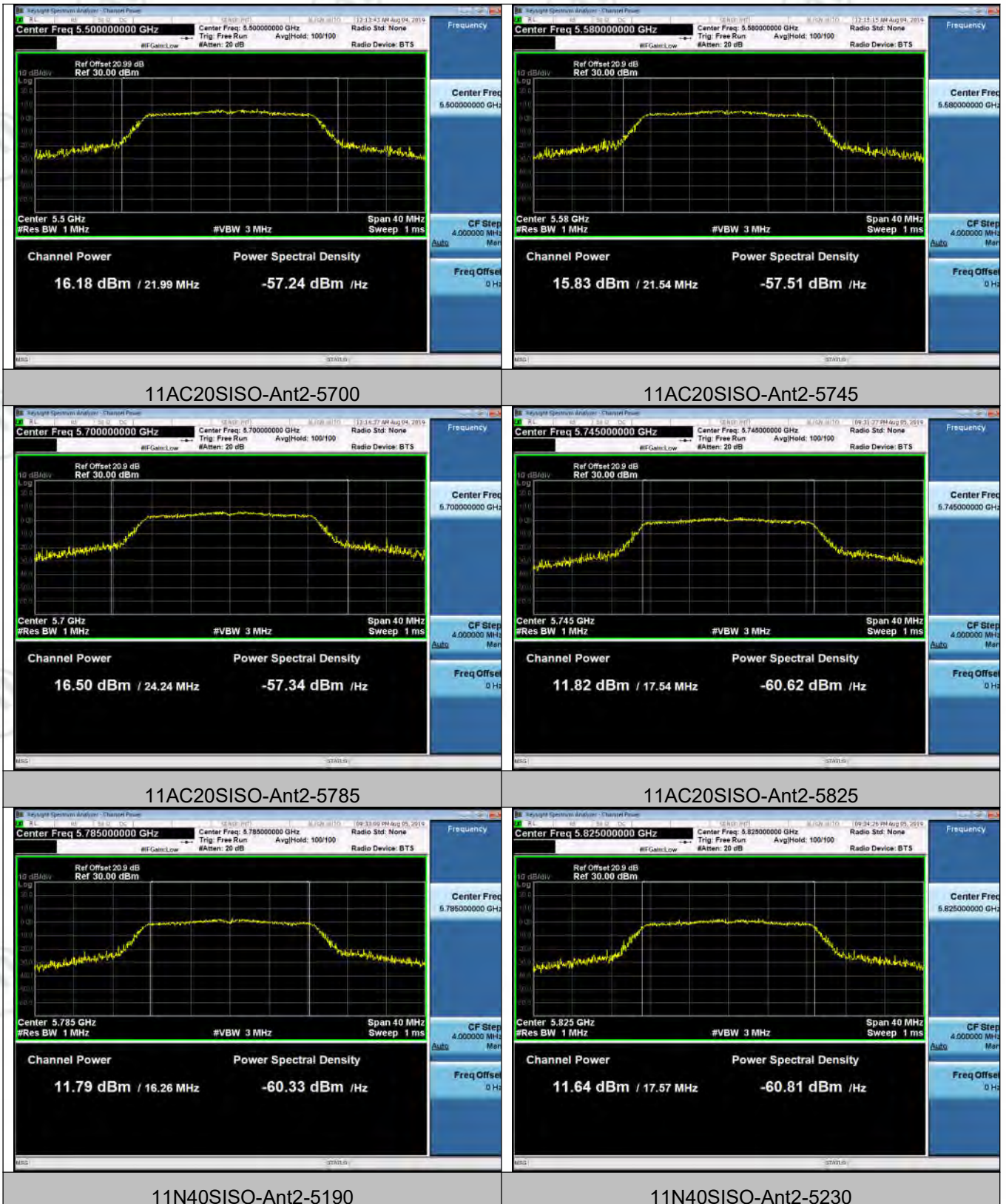


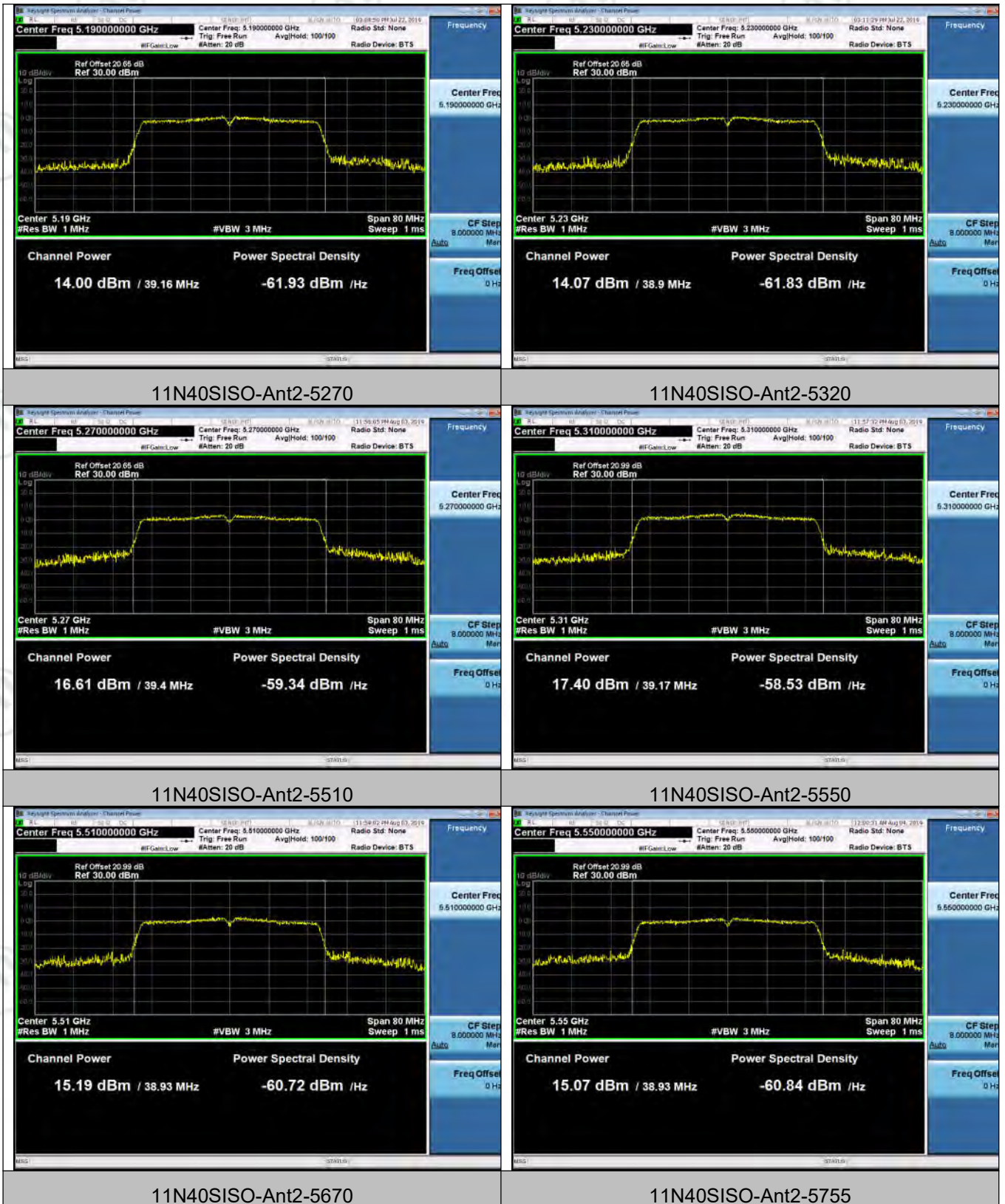


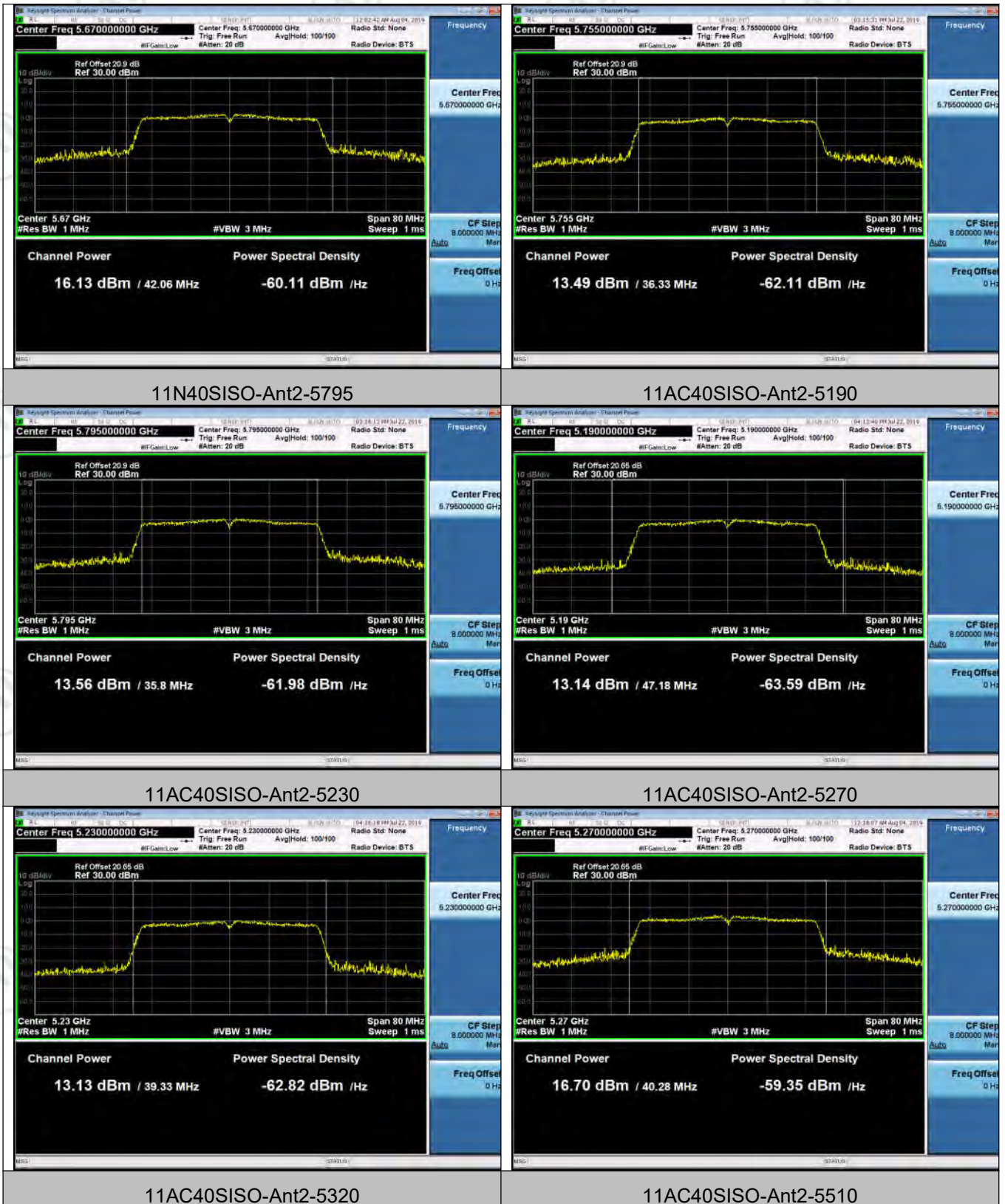




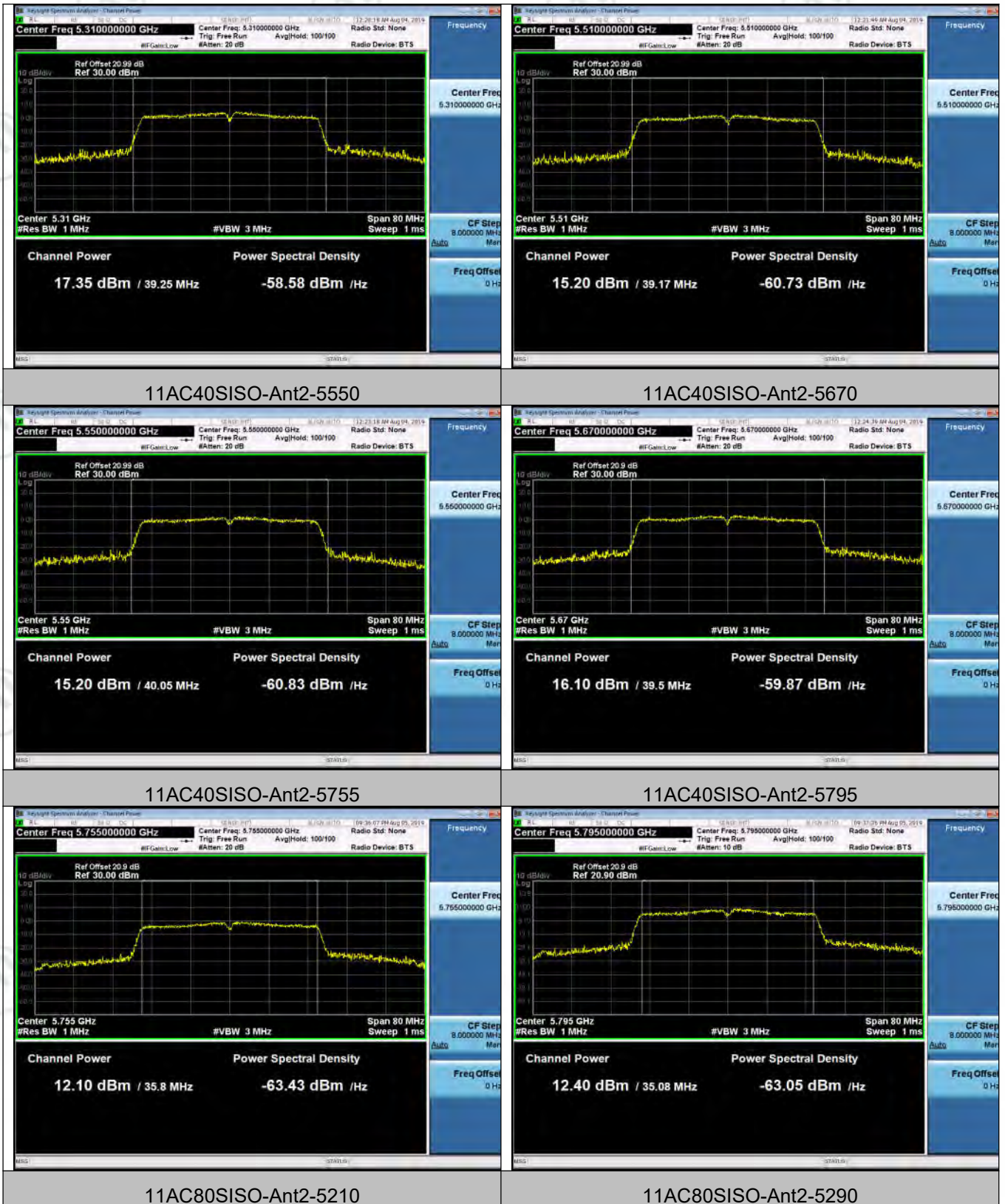


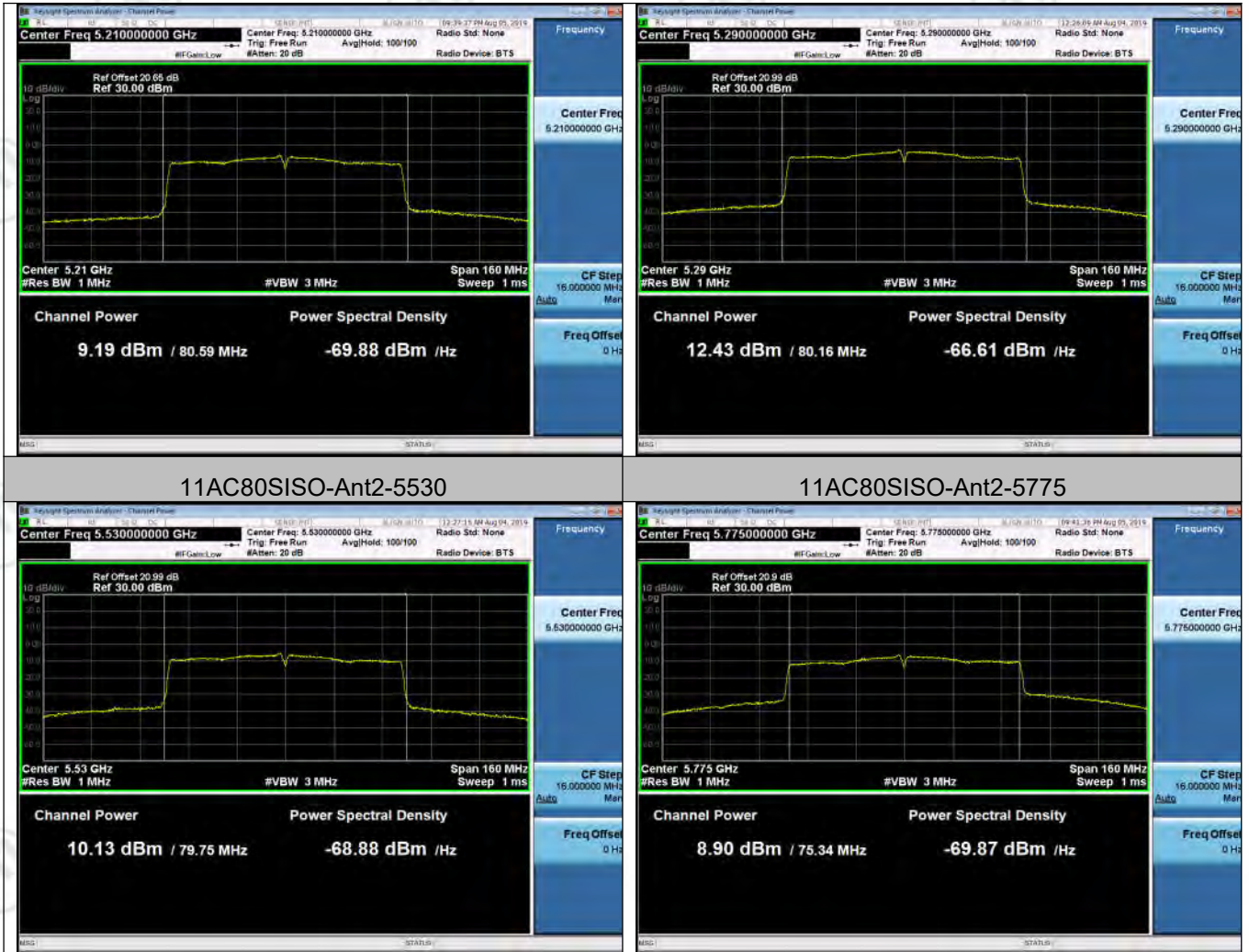












**Ant1:**
**Appendix C): Power Spectral Density**
**Result Table**

| Test Mode | Antenna | Channel | Meas.Level [dBm] | PSD [dBm/MHz]    | Verdict |
|-----------|---------|---------|------------------|------------------|---------|
| 11A       | Ant1    | 5180    | 4.42             | 4.48             | PASS    |
| 11A       | Ant1    | 5200    | 4.18             | 4.24             | PASS    |
| 11A       | Ant1    | 5240    | 4.41             | 4.47             | PASS    |
| 11A       | Ant1    | 5260    | 8.47             | 8.53             | PASS    |
| 11A       | Ant1    | 5280    | 8.34             | 8.40             | PASS    |
| 11A       | Ant1    | 5320    | 8.88             | 8.94             | PASS    |
| 11A       | Ant1    | 5500    | 7.91             | 7.97             | PASS    |
| 11A       | Ant1    | 5580    | 7.51             | 7.57             | PASS    |
| 11A       | Ant1    | 5700    | 8.57             | 8.62             | PASS    |
| Test Mode | Antenna | Channel | Meas.Level [dBm] | PSD [dBm/500kHz] | Verdict |
| 11A       | Ant1    | 5745    | 2.02             | 2.08             | PASS    |
| 11A       | Ant1    | 5785    | 2.24             | 2.30             | PASS    |
| 11A       | Ant1    | 5825    | 4.92             | 4.98             | PASS    |
| Test Mode | Antenna | Channel | Meas.Level [dBm] | PSD [dBm/MHz]    | Verdict |
| 11N20SISO | Ant1    | 5180    | 4.13             | 4.19             | PASS    |
| 11N20SISO | Ant1    | 5200    | 4.67             | 4.74             | PASS    |
| 11N20SISO | Ant1    | 5240    | 5.01             | 5.06             | PASS    |
| 11N20SISO | Ant1    | 5260    | 7.73             | 7.79             | PASS    |
| 11N20SISO | Ant1    | 5280    | 8.01             | 8.06             | PASS    |
| 11N20SISO | Ant1    | 5320    | 8.39             | 8.45             | PASS    |
| 11N20SISO | Ant1    | 5500    | 7.13             | 7.19             | PASS    |
| 11N20SISO | Ant1    | 5580    | 6.81             | 6.87             | PASS    |
| 11N20SISO | Ant1    | 5700    | 8.41             | 8.47             | PASS    |
| Test Mode | Antenna | Channel | Meas.Level [dBm] | PSD [dBm/500kHz] | Verdict |
| 11N20SISO | Ant1    | 5745    | 4.83             | 4.89             | PASS    |
| 11N20SISO | Ant1    | 5785    | 5.56             | 5.62             | PASS    |
| 11N20SISO | Ant1    | 5825    | 4.46             | 4.51             | PASS    |

| Test Mode  | Antenna | Channel | Meas.Level [dBm] | PSD [dBm/MHz]    | Verdict |
|------------|---------|---------|------------------|------------------|---------|
| 11N40SISO  | Ant1    | 5190    | 4.16             | 4.29             | PASS    |
| 11N40SISO  | Ant1    | 5230    | 4.23             | 4.35             | PASS    |
| 11N40SISO  | Ant1    | 5270    | 5.32             | 5.44             | PASS    |
| 11N40SISO  | Ant1    | 5310    | 5.66             | 5.79             | PASS    |
| 11N40SISO  | Ant1    | 5510    | 3.78             | 3.89             | PASS    |
| 11N40SISO  | Ant1    | 5550    | 3.20             | 3.32             | PASS    |
| 11N40SISO  | Ant1    | 5670    | 4.62             | 4.73             | PASS    |
| Test Mode  | Antenna | Channel | Meas.Level [dBm] | PSD [dBm/500kHz] | Verdict |
| 11N40SISO  | Ant1    | 5755    | -0.19            | -0.08            | PASS    |
| 11N40SISO  | Ant1    | 5795    | 0.04             | 0.17             | PASS    |
| Test Mode  | Antenna | Channel | Meas.Level [dBm] | PSD [dBm/MHz]    | Verdict |
| 11AC20SISO | Ant1    | 5180    | 4.92             | 4.99             | PASS    |
| 11AC20SISO | Ant1    | 5200    | 4.52             | 4.58             | PASS    |
| 11AC20SISO | Ant1    | 5240    | 4.99             | 5.05             | PASS    |
| 11AC20SISO | Ant1    | 5260    | 7.82             | 7.88             | PASS    |
| 11AC20SISO | Ant1    | 5280    | 8.16             | 8.22             | PASS    |
| 11AC20SISO | Ant1    | 5320    | 8.30             | 8.35             | PASS    |
| 11AC20SISO | Ant1    | 5500    | 7.25             | 7.31             | PASS    |
| 11AC20SISO | Ant1    | 5580    | 6.88             | 6.95             | PASS    |
| 11AC20SISO | Ant1    | 5700    | 8.40             | 8.46             | PASS    |
| Test Mode  | Antenna | Channel | Meas.Level [dBm] | PSD [dBm/500kHz] | Verdict |
| 11AC20SISO | Ant1    | 5745    | 5.12             | 5.17             | PASS    |
| 11AC20SISO | Ant1    | 5785    | 4.75             | 4.81             | PASS    |
| 11AC20SISO | Ant1    | 5825    | 4.62             | 4.67             | PASS    |
| Test Mode  | Antenna | Channel | Meas.Level [dBm] | PSD [dBm/MHz]    | Verdict |
| 11AC40SISO | Ant1    | 5190    | 3.94             | 4.07             | PASS    |
| 11AC40SISO | Ant1    | 5230    | 4.32             | 4.44             | PASS    |
| 11AC40SISO | Ant1    | 5270    | 4.97             | 5.09             | PASS    |
| 11AC40SISO | Ant1    | 5310    | 5.85             | 5.98             | PASS    |

| 11AC40SISO | Ant1    | 5510    | 3.91             | 4.03             | PASS    |
|------------|---------|---------|------------------|------------------|---------|
| 11AC40SISO | Ant1    | 5550    | 5.47             | 5.59             | PASS    |
| 11AC40SISO | Ant1    | 5670    | 4.84             | 4.97             | PASS    |
| Test Mode  | Antenna | Channel | Meas.Level [dBm] | PSD [dBm/500kHz] | Verdict |
| 11AC40SISO | Ant1    | 5755    | 1.89             | 2.02             | PASS    |
| 11AC40SISO | Ant1    | 5795    | 1.71             | 1.84             | PASS    |
| Test Mode  | Antenna | Channel | Meas.Level [dBm] | PSD [dBm/MHz]    | Verdict |
| 11AC80SISO | Ant1    | 5210    | 2.08             | 2.33             | PASS    |
| 11AC80SISO | Ant1    | 5290    | 2.78             | 3.04             | PASS    |
| 11AC80SISO | Ant1    | 5530    | -1.23            | -1.00            | PASS    |
| Test Mode  | Antenna | Channel | Meas.Level [dBm] | PSD [dBm/500kHz] | Verdict |
| 11AC80SISO | Ant1    | 5775    | 2.06             | 2.32             | PASS    |