



# RADIO TEST REPORT

**FCC ID** : Z8H89FT0083  
**Equipment** : 6092HH  
**Brand Name** : Cambium Networks  
**Model Name** : 6092HH  
**Applicant** : Cambium Networks Inc.  
3800 Golf Road, Suite 360 Rolling Meadows, IL  
60008, USA  
**Manufacturer** : Cambium Networks, Ltd.  
Ashburton, TQ13 7UP, UK  
**Standard** : 47 CFR FCC Part 15.407

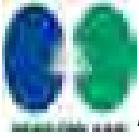
The product was received on Jul. 09, 2024, and testing was started from Jul. 29, 2024 and completed on Aug. 21, 2024. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

**Sporton International Inc. Hsinchu Laboratory**

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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## Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items                        | Result (PASS/FAIL) | Remark |
|---------------|-----------------|-----------------------------------|--------------------|--------|
| 1.1.3         | 15.203          | Antenna Requirement               | PASS               | -      |
| 3.1           | 15.207          | AC Power-line Conducted Emissions | PASS               | -      |
| 3.2           | 15.407(a)       | Emission Bandwidth                | PASS               | -      |
| 3.3           | 15.407(a)       | Maximum Output Power              | PASS               | -      |
| 3.4           | 15.407(a)       | Power Spectral Density            | PASS               | -      |
| 3.5           | 15.407(b)       | Unwanted Emissions                | PASS               | -      |

### Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturee who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".

### Disclaimer:

1. The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.
2. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.

Reviewed by: Sam Chen

Report Producer: Sandy Chuang



# 1 General Description

## 1.1 Information

### 1.1.1 RF General Information

| Frequency Range (MHz) | Ch. Bandwidth (MHz) | Ch. Frequency (MHz) | Ch. Space (MHz) |
|-----------------------|---------------------|---------------------|-----------------|
| 5725-5850             | 5                   | 5727.5-5847.5       | 1               |
| 5725-5850             | 10                  | 5730-5845           | 1               |
| 5725-5850             | 15                  | 5732.5-5842.5       | 1               |
| 5725-5850             | 20                  | 5735-5840           | 1               |
| 5725-5850             | 30                  | 5740-5835           | 1               |
| 5725-5850             | 40                  | 5745-5830           | 1               |

| Band          | Mode   | BWch (MHz) | Nant |
|---------------|--------|------------|------|
| 5.725-5.85GHz | QPSK5  | 5          | 2TX  |
| 5.725-5.85GHz | QPSK10 | 10         | 2TX  |
| 5.725-5.85GHz | QPSK15 | 15         | 2TX  |
| 5.725-5.85GHz | QPSK20 | 20         | 2TX  |
| 5.725-5.85GHz | QPSK30 | 30         | 2TX  |
| 5.725-5.85GHz | QPSK40 | 40         | 2TX  |

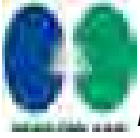
**Note:**

- ♦ The 5GHz function uses QPSK modulation.
- ♦ BWch is the nominal channel bandwidth.

### 1.1.2 Table for Frequency Combination Mode

| Type | Mode            | Frequency (MHz) |
|------|-----------------|-----------------|
| 1    | QPSK40+40_80MHz | 5755+5795       |
| 2    | QPSK40+40_40MHz | 5744.5+5829.5   |

Note: The above information was declared by manufacturer.



**1.1.3 Antenna Information**

| Ant. | Port | Brand   | Model Name                  | Antenna Type | Connector | Gain (dBi) |
|------|------|---------|-----------------------------|--------------|-----------|------------|
| 1    | 1    | Cambium | Canopy 2x2 SM Extender Dish | Dish         | N/A       | 26         |
|      | 2    |         |                             |              |           |            |

Note 1: The above information was declared by manufacturer.

Note 2: Directional gain information

| Type   | Maximum Output Power   | Power Spectral Density |
|--------|--|------------------------|
| Non-SD | Directional gain = Max gain + array gain.<br>For power measurements on IEEE 802.11 devices<br>Array Gain = 0-dB (i.e., no array gain) for N-ANT. All |                        |
| SD     |  |                        |

Ex.

Directional Gain (dBi) formula:

$$G_{dBi} = 10 \log \left( \frac{4\pi A_e}{\lambda^2} \right)$$

$$MSD(g1,1) = 10^{(G1/10)}, MSD(g1,2) = 10^{(G2/10)}, MSD(g1,3) = 10^{(G3/10)}, MSD(g1,4) = 10^{(G4/10)}$$

$$GA = MSD(g1,1) + MSD(g1,2) + MSD(g1,3) + MSD(g1,4)$$

$$DG = 10 \log \left( \frac{MSD(g1,1) + MSD(g1,2) + MSD(g1,3) + MSD(g1,4)}{N_{ant} \cdot 10^{(G_{ref}/10)}} \right) = 10 \log \left( \frac{GA}{N_{ant} \cdot 10^{(G_{ref}/10)}} \right) = 10 \log \left( \frac{GA}{N_{ant}} \right) - 10 \log \left( 10^{(G_{ref}/10)} \right) = 10 \log \left( \frac{GA}{N_{ant}} \right) - G_{ref}$$

Where :

Cross-Polarized Antenna

$$1G \text{ unit} - G1 = 26.00 \text{ dB}, G2 = 26.00 \text{ dB}$$

$$5G \text{ unit} - G3 = 26.00 \text{ dB}$$

Note 3:

**For 5GHz function (2TX / 2RX):**

Port 1~2 can be used as transmitting/receiving antenna.

Port 1~2 could transmit/receive simultaneously.



### 1.1.4 Mode Test Duty Cycle

For other modes:

| Mode         | DC    | DCF(dB) | T(s)   | VBW(Hz) $\geq 1/T$ |
|--------------|-------|---------|--------|--------------------|
| QPSK5_Nss 1  | 0.898 | 0.47    | 4.5m   | 300                |
| QPSK10_Nss 1 | 0.875 | 0.58    | 4.387m | 300                |
| QPSK15_Nss 1 | 0.869 | 0.61    | 4.369m | 300                |
| QPSK20_Nss 1 | 0.861 | 0.65    | 4.331m | 300                |
| QPSK30_Nss 1 | 0.863 | 0.64    | 4.319m | 300                |
| QPSK40_Nss 1 | 0.858 | 0.67    | 4.3m   | 300                |

For frequency combination modes:

| Mode            | DC    | DCF(dB) | T(s)   | VBW(Hz) $\geq 1/T$ |
|-----------------|-------|---------|--------|--------------------|
| QPSK40+40_Nss 1 | 0.474 | 3.24    | 2.369m | 1k                 |

Note:

- ◆ DC is Duty Cycle.
- ◆ DCF is Duty Cycle Factor.

### 1.1.5 EUT Operational Condition

| EUT Power Type        | From PoE                            |                     |                                     |                     |
|-----------------------|-------------------------------------|---------------------|-------------------------------------|---------------------|
| Beamforming Function  | <input type="checkbox"/>            | With beamforming    | <input checked="" type="checkbox"/> | Without beamforming |
| Function              | <input type="checkbox"/>            | Outdoor P2M         | <input type="checkbox"/>            | Indoor P2M          |
|                       | <input checked="" type="checkbox"/> | Fixed P2P           | <input type="checkbox"/>            | Client              |
|                       | <input type="checkbox"/>            | Point-to-multipoint | <input checked="" type="checkbox"/> | Point-to-point      |
| Test Software Version | DOS [ver 6.1.7601]                  |                     |                                     |                     |

Note: The above information was declared by manufacturer.



### 1.2 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2013
- ◆ FCC KDB 789033 D02 v02r01

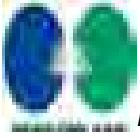
The following reference test guidance is not within the scope of accreditation of TAF.

- ◆ FCC KDB 662911 D01 v02r01
- ◆ FCC KDB 412172 D01 v01r01
- ◆ FCC KDB 414788 D01 v01r01

### 1.3 Testing Location Information

| Testing Location Information                              |  |
|---|--|
| Test Lab. : Sporton International Inc. Hsinchu Laboratory |  |
| Hsinchu<br>(TAF: 3787)                                    | ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)<br>TEL: 886-3-656-9065 FAX: 886-3-656-9085<br>Test site Designation No. TW3787 with FCC.<br>Conformity Assessment Body Identifier (CABID) TW3787 with ISED. |

| Test Condition           | Test Site No. | Test Engineer | Test Environment (°C / %) | Test Date                       |
|--------------------------|---------------|---------------|---------------------------|---------------------------------|
| RF Conducted             | TH01-CB       | KJ Chang      | 24.1~25.3 / 61~65         | Jul. 30, 2024~<br>Aug. 19, 2024 |
| Radiated<br>(Below 1GHz) | 03CH05-CB     | Stim Sung     | 21.6-22.7 / 56-59         | Jul. 29, 2024~<br>Aug. 21, 2024 |
| Radiated<br>(Above 1GHz) | 03CH03-CB     | Stim Sung     | 21.8-22.9 / 55-58         | Jul. 29, 2024~<br>Aug. 21, 2024 |
| AC Conduction            | CO01-CB       | Ryan Huang    | 22~23 / 67~69             | Aug. 06, 2024                   |

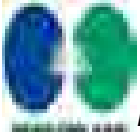


### 1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

| Parameter                            | Uncertainty | Remark                   |
|--------------------------------------|-------------|--------------------------|
| Conducted Emission (150kHz ~ 30MHz)  | 3.8 dB      | Confidence levels of 95% |
| Radiated Emission (9kHz ~ 30MHz)     | 4.1 dB      | Confidence levels of 95% |
| Radiated Emission (30MHz ~ 1,000MHz) | 4.2 dB      | Confidence levels of 95% |
| Radiated Emission (1GHz ~ 18GHz)     | 4.2 dB      | Confidence levels of 95% |
| Radiated Emission (18GHz ~ 40GHz)    | 4.0 dB      | Confidence levels of 95% |
| Conducted Emission                   | 3.1 dB      | Confidence levels of 95% |
| Output Power Measurement             | 0.8 dB      | Confidence levels of 95% |
| Power Density Measurement            | 3.1 dB      | Confidence levels of 95% |
| Bandwidth Measurement                | 2.1 %       | Confidence levels of 95% |

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Official Information



## 2 Test Configuration of EUT

### 2.1 Test Channel Mode

For other modes:

| Mode                  |
|-----------------------|
| QPSK5_5MHz_Nss1_2TX   |
| 5727.5MHz             |
| 5787.5MHz             |
| 5847.5MHz             |
| QPSK10_10MHz_Nss1_2TX |
| 5730MHz               |
| 5787MHz               |
| 5845MHz               |
| QPSK15_15MHz_Nss1_2TX |
| 5732.5MHz             |
| 5787.5MHz             |
| 5842.5MHz             |
| QPSK20_20MHz_Nss1_2TX |
| 5735MHz               |
| 5785MHz               |
| 5840MHz               |
| QPSK30_30MHz_Nss1_2TX |
| 5740MHz               |
| 5787MHz               |
| 5835MHz               |
| QPSK40_40MHz_Nss1_2TX |
| 5745MHz               |
| 5775MHz               |
| 5830MHz               |

For frequency combination modes:

| Mode                     |
|--------------------------|
| QPSK40+40_80MHz_Nss1_2TX |
| 5755MHz,5795MHz          |
| 5744.5MHz,5829.5MHz      |



### 2.2 The Worst Case Measurement Configuration

| The Worst Case Mode for Following Conformance Tests |   |
|---|---|
| Tests Item  | AC power-line conducted emissions   |
| Condition   | AC power-line conducted measurement for line and neutral<br>Test Voltage: 120Vac / 60Hz |
| Operating Mode                                      | CTX   |
| 1   | EUT   |

| The Worst Case Mode for Following Conformance Tests |  |
|---|--|
| Tests Item  | Emission Bandwidth<br>Maximum Output Power<br>Power Spectral Density |
| Test Condition                                      | Conducted measurement at transmit chains                             |

| The Worst Case Mode for Following Conformance Tests |   |
|---|---|
| Tests Item  | Unwanted Emissions  |
| Test Condition                                      | Radiated measurement<br>If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type. |
| Operating Mode < 1GHz                               | CTX<br>After evaluating, EUT in Y axis was the worst case, so the measurement will follow this same test configuration.   |
| 1   | EUT in Y axis   |
| Operating Mode > 1GHz                               | CTX<br>After evaluating, EUT in Y axis was the worst case, so the measurement will follow this same test configuration.   |
| 1   | EUT in Y axis   |

Note: The PoE was for measurement only and would not be marketed. Its information is shown as below:

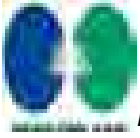
| Equipment | Brand Name | Model Name   |
|-----------|------------|--------------|
| PoE       | Cambium    | NET-P30-56IN |

### 2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

### 2.4 Accessories

N/A



## 2.5 Support Equipment

For AC Conduction:

| Support Equipment |           |                  |               |        |
|-------------------|-----------|------------------|---------------|--------|
| No.               | Equipment | Brand Name       | Model Name    | FCC ID |
| A                 | LAN NB    | DELL             | E6430         | N/A    |
| B                 | PoE       | Cambium Networks | NET-P30-56-IN | N/A    |

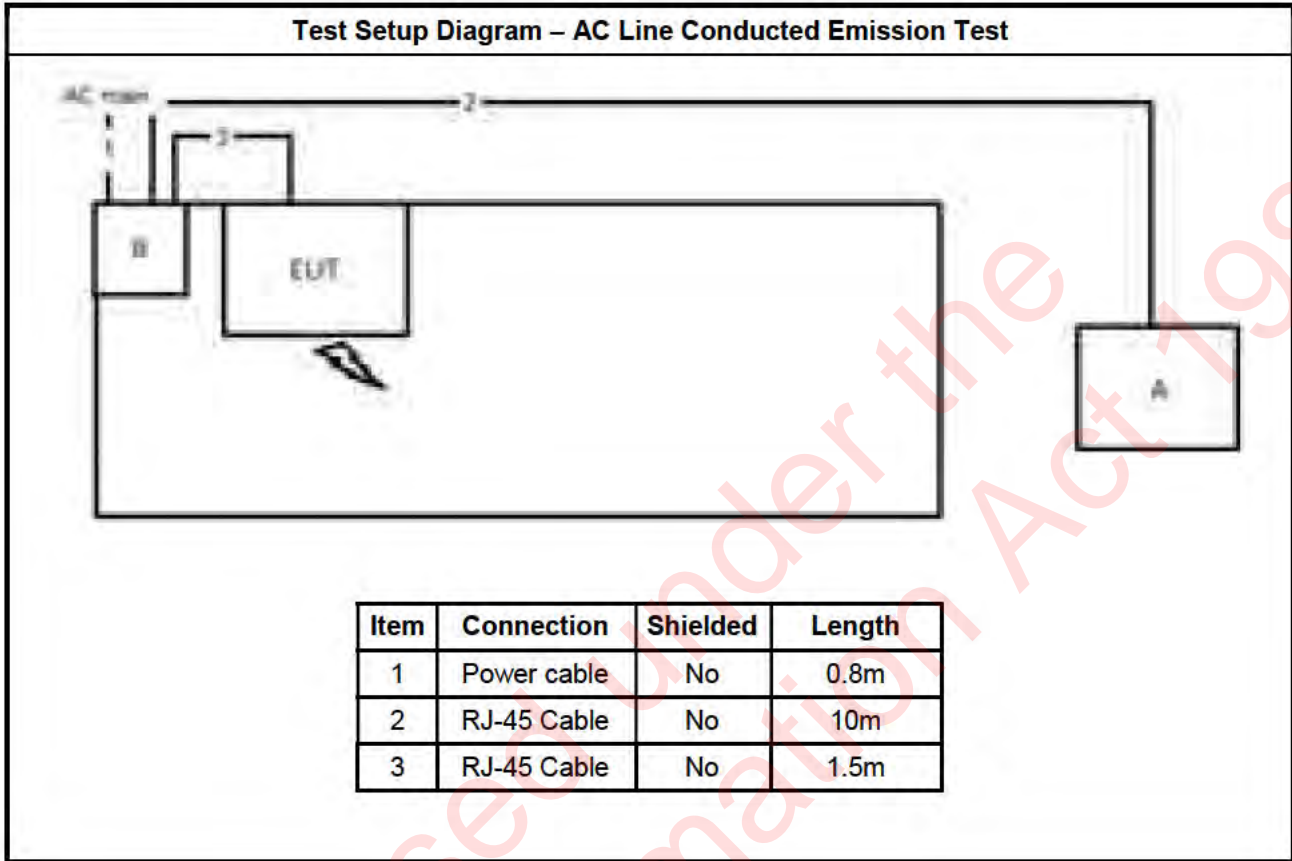
For Radiated and RF Conducted:

| Support Equipment |           |                  |              |        |
|-------------------|-----------|------------------|--------------|--------|
| No.               | Equipment | Brand Name       | Model Name   | FCC ID |
| A                 | PoE       | Cambium Networks | NET-P30-56IN | N/A    |
| B                 | NB        | DELL             | E4300        | N/A    |

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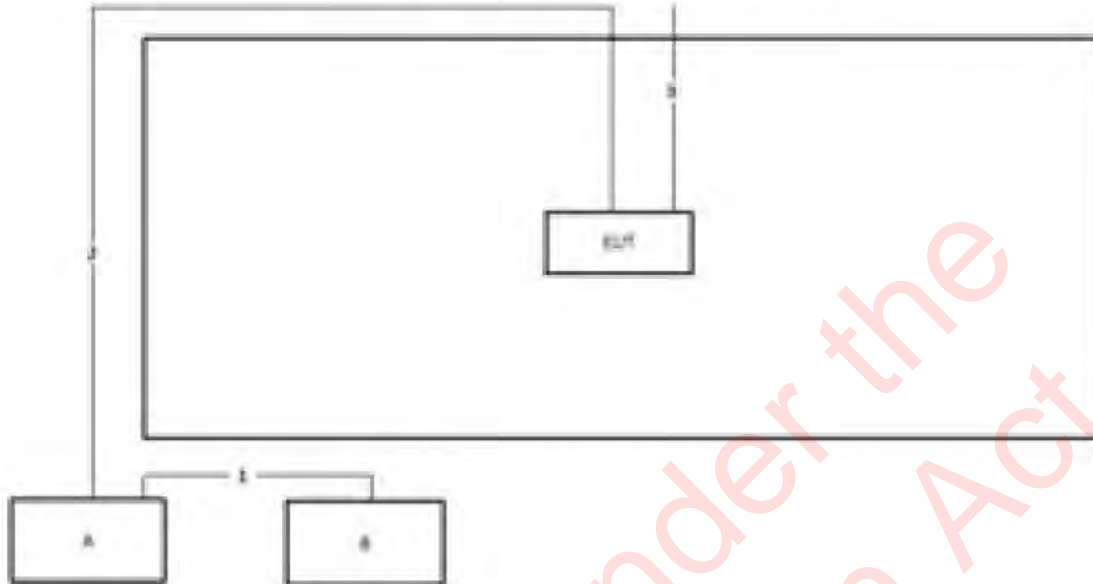


## 2.6 Test Setup Diagram





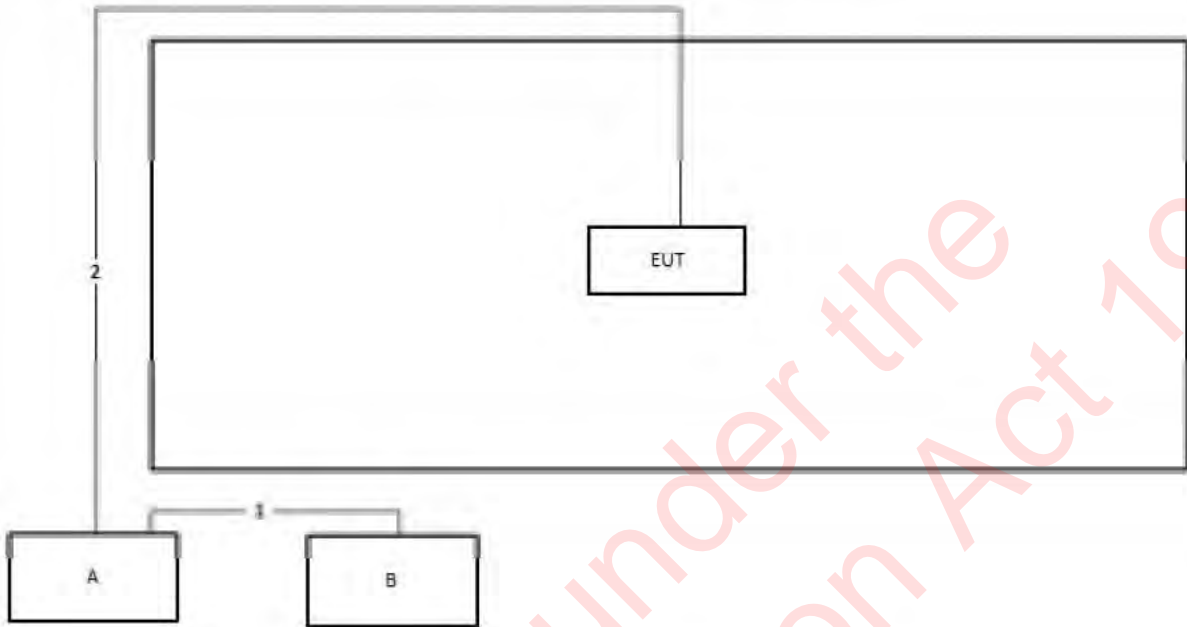
**Test Setup Diagram - Radiated Test (Below 1Hz)**



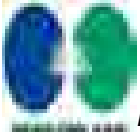
| Item | Connection   | Shielded | Length |
|------|--------------|----------|--------|
| 1    | RJ-45 cable  | No       | 1.5m   |
| 2    | RJ-45 cable  | No       | 10m    |
| 3    | Ground cable | No       | 1.5m   |



**Test Setup Diagram - Radiated Test (Above 1Hz)**



| Item | Connection  | Shielded | Length |
|------|-------------|----------|--------|
| 1    | RJ-45 cable | No       | 1.5m   |
| 2    | RJ-45 cable | No       | 10m    |



### 3 Transmitter Test Result

#### 3.1 AC Power-line Conducted Emissions

##### 3.1.1 AC Power-line Conducted Emissions Limit

| AC Power-line Conducted Emissions Limit |            |           |
|---|------------|-----------|
| Frequency Emission (MHz)                | Quasi-Peak | Average   |
| 0.15-0.5                                | 66 - 56 *  | 56 - 46 * |
| 0.5-5                                   | 56         | 46        |
| 5-30                                    | 60         | 50        |

Note 1: \* Decreases with the logarithm of the frequency.

##### 3.1.2 Measuring Instruments

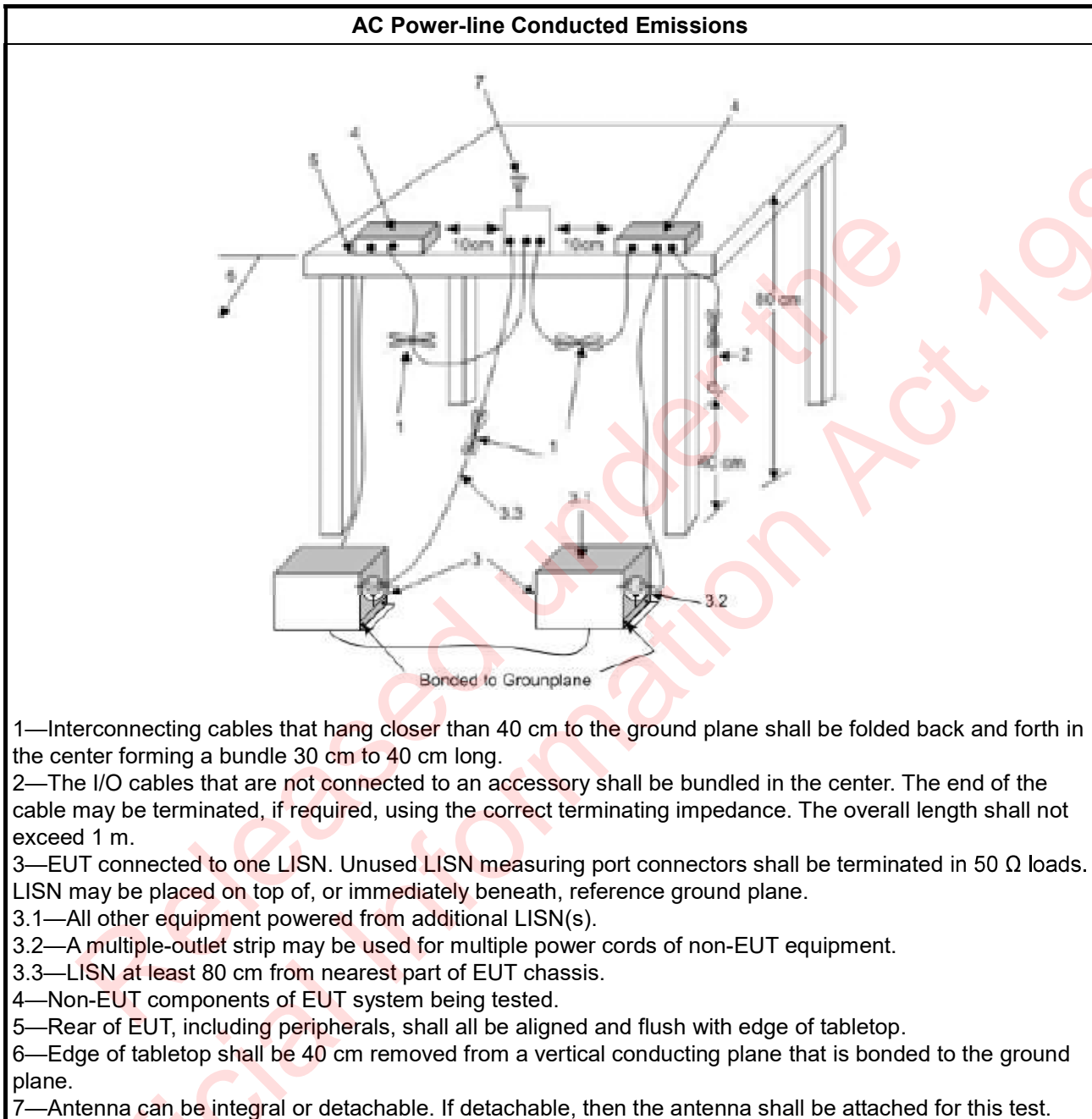
Refer a test equipment and calibration data table in this test report.

##### 3.1.3 Test Procedures

| Test Method  |
|--|
| <input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions. |



### 3.1.4 Test Setup



### 3.1.5 Measurement Results Calculation

The measured Level is calculated using:

- Corrected Reading: LISN Factor (LISN) + Attenuator (AT/AUX) + Cable Loss (CL) + Read Level (Raw) = Level
- Margin = -Limit + Level

### 3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A



### 3.2 Emission Bandwidth

#### 3.2.1 Emission Bandwidth Limit

| Emission Bandwidth Limit            |   |
|-------------------------------------|---|
| <b>UNII Devices</b>                 |   |
| <input type="checkbox"/>            | For the 5.15-5.25 GHz band, N/A   |
| <input type="checkbox"/>            | For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.            |
| <input type="checkbox"/>            | For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.           |
| <input checked="" type="checkbox"/> | For the 5.725-5.85 GHz band, 26 dB emission bandwidth ,N/A.<br>6 dB emission bandwidth ≥ 500kHz.  |
| <b>LE-LAN Devices</b>               |   |
| <input type="checkbox"/>            | For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.                      |
| <input type="checkbox"/>            | For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz                        |
| <input type="checkbox"/>            | For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz |
| <input type="checkbox"/>            | For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.  |

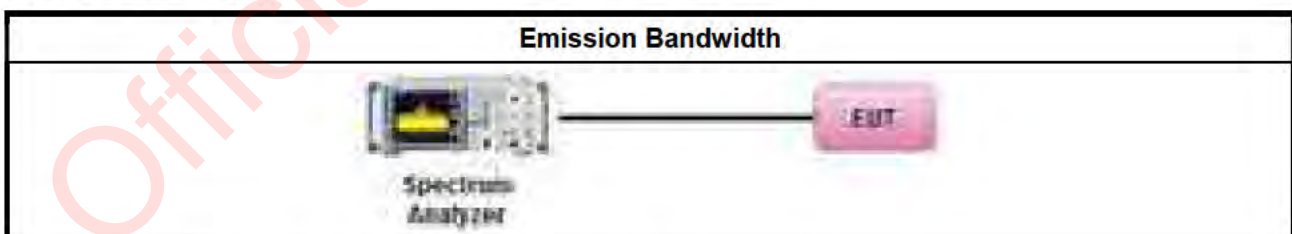
#### 3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

#### 3.2.3 Test Procedures

| Test Method  |   |
|--|---|
| ▪ For the emission bandwidth shall be measured using one of the options below: |   |
| <input checked="" type="checkbox"/>  | Refer as FCC KDB 789033 D02, clause C for EBW and clause D for OBW measurement. |
| <input type="checkbox"/>   | Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.              |
| <input type="checkbox"/>   | Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.                          |

#### 3.2.4 Test Setup



#### 3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



### 3.3 Maximum Output Power

#### 3.3.1 Limit

| Maximum Output Power Limit   |   |
|--|---|
| <b>UNII Devices</b>  |   |
| <input type="checkbox"/> For the 5.15-5.25 GHz band:   |   |
| <input type="checkbox"/>   | <ul style="list-style-type: none"><li>Outdoor AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>. e.i.r.p. at any elevation angle above 30 degrees <math>\leq 125</math>mW [21dBm]</li><li>Indoor AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math></li><li>Point-to-point AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 23</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 23)</math>.</li><li>Mobile or Portable Client: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 250 mW. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 24 - (G_{TX} - 6)</math>.</li></ul> |
| <input type="checkbox"/> For the 5.25-5.35 GHz band, the maximum conducted output power ( $P_{Out}$ ) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$ .                          |   |
| <input type="checkbox"/> For the 5.47-5.725 GHz band, the maximum conducted output power ( $P_{Out}$ ) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$ .                         |   |
| <input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:   |   |
| <input checked="" type="checkbox"/>  | <ul style="list-style-type: none"><li>Point-to-multipoint systems (P2M): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>.</li><li>Point-to-point systems (P2P): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W.</li></ul>  |
| <b>LE-LAN Devices</b>  |   |
| <input type="checkbox"/> For the 5.15-5.25 GHz band:   |   |
| <input type="checkbox"/>   | <ul style="list-style-type: none"><li>For other devices: The maximum e.i.r.p. shall not exceed 200 mW or <math>10 + 10 \log B</math>, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.</li><li>Vehicles devices: The maximum e.i.r.p. shall not exceed 30 mW or <math>1.76 + 10 \log B</math>, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.</li></ul>   |
| <input type="checkbox"/> For the 5.25-5.35 GHz band:   |   |
| <input type="checkbox"/>   | <ul style="list-style-type: none"><li>For other devices: The maximum conducted output power shall not exceed 250 mW or <math>11 + 10 \log 10 B</math>, dBm, and the maximum e.i.r.p. shall not exceed 1.0 W or <math>17 + 10 \log B</math>, dBm, whichever power is less. B is the 99% emission bandwidth in MHz</li><li>Vehicles devices: The maximum e.i.r.p. shall not exceed 30 mW or <math>1.76 + 10 \log B</math>, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.</li></ul>  |
| <input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum conducted output power shall not exceed 250 mW or $11 + 10 \log 10 B$ , dBm, and the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$ , dBm, whichever power is less. B is the 99% emission bandwidth in MHz. |   |
| <input type="checkbox"/> For the 5.725-5.85 GHz band:  |   |



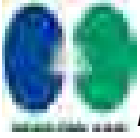
|  |
|--|
| <ul style="list-style-type: none"> <li>Point-to-multipoint systems (P2M): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>.</li> </ul> |
| <ul style="list-style-type: none"> <li>Point-to-point systems (P2P): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W.</li> </ul>  |
| $P_{Out}$ = maximum conducted output power in dBm,<br>$G_{TX}$ = the maximum transmitting antenna directional gain in dBi.   |

### 3.3.2 Measuring Instruments

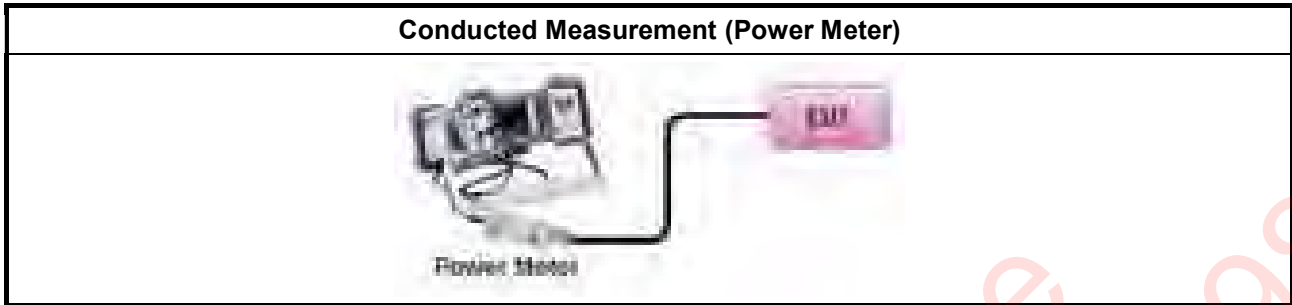
Refer a test equipment and calibration data table in this test report.

### 3.3.3 Test Procedures

| Test Method  |  |
|--|--|
| Average over on/off periods with duty factor   |  |
| <input type="checkbox"/>   | Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).                |
| <input type="checkbox"/>   | Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed) |
| Wideband RF power meter and average over on/off periods with duty factor   |  |
| <input checked="" type="checkbox"/>  | Refer as FCC KDB 789033 D02, clause E Method PM-G (using an RF average power meter).         |
| <input checked="" type="checkbox"/>  | For conducted measurement.   |
| <ul style="list-style-type: none"> <li>If the EUT supports multiple transmit chains using options given below:<br/>Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.</li> </ul> |  |
| <ul style="list-style-type: none"> <li>If multiple transmit chains, EIRP calculation could be following as methods:<br/> <math>P_{total} = P_1 + P_2 + \dots + P_n</math><br/> (calculated in linear unit [mW] and transfer to log unit [dBm])<br/> <math>EIRP_{total} = P_{total} + DG</math> </li> </ul>   |  |
| <input type="checkbox"/>   | For radiated measurement.  |
| <ul style="list-style-type: none"> <li>Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"</li> </ul>   |  |
| <ul style="list-style-type: none"> <li>Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li> </ul>  |  |
| <ul style="list-style-type: none"> <li>Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.</li> </ul>   |  |



**3.3.4 Test Setup**



**3.3.5 Test Result of Maximum Output Power**

Refer as Appendix C

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### 3.4 Power Spectral Density

#### 3.4.1 Limit

| Peak Power Spectral Density Limit  |  |
|--|--|
| <b>UNII Devices</b>  |  |
| <input type="checkbox"/> For the 5.15-5.25 GHz band:   |  |
| <input type="checkbox"/>   | <ul style="list-style-type: none"> <li>Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 17 - (G_{TX} - 6)</math>.</li> <li>Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 17 - (G_{TX} - 6)</math>.</li> <li>Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If <math>G_{TX} &gt; 23</math> dBi, then <math>P_{Out} = 17 - (G_{TX} - 23)</math>.</li> <li>Mobile or Portable Client: the peak power spectral density (PPSD) <math>\leq 11</math> dBm/MHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>PPSD = 11 - (G_{TX} - 6)</math>.</li> </ul> |
| <input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$ .  |  |
| <input type="checkbox"/> For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$ .   |  |
| <input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:   |  |
| <input type="checkbox"/>   | <ul style="list-style-type: none"> <li>Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>PPSD = 30 - (G_{TX} - 6)</math>.</li> <li>Point-to-point systems (P2P): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz.</li> </ul>   |
| <b>LE-LAN Devices</b>  |  |
| <input type="checkbox"/> For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) $\leq 10$ dBm/MHz.  |  |
| <input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz.   |  |
| <input type="checkbox"/>   | <ul style="list-style-type: none"> <li>e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where <math>\theta</math> is the angle above the local horizontal plane (of the Earth) as shown below:<br/> -13 dBW/MHz for <math>0^\circ \leq \theta &lt; 8^\circ</math> ; -13 - 0.716 (<math>\theta-8</math>) dBW/MHz for <math>8^\circ \leq \theta &lt; 40^\circ</math><br/> -35.9 - 1.22 (<math>\theta-40</math>) dBW/MHz for <math>40^\circ \leq \theta \leq 45^\circ</math> ; -42 dBW/MHz for <math>\theta &gt; 45^\circ</math></li> </ul>   |
| <input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz.  |  |
| <input type="checkbox"/> For the 5.725-5.85 GHz band:  |  |
| <input type="checkbox"/>   | <ul style="list-style-type: none"> <li>Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>PPSD = 30 - (G_{TX} - 6)</math>.</li> <li>Point-to-point systems (P2P): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz.</li> </ul>   |
| <b>PPSD</b> = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz<br><b><math>G_{TX}</math></b> = the maximum transmitting antenna directional gain in dBi. |  |

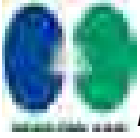
#### 3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.



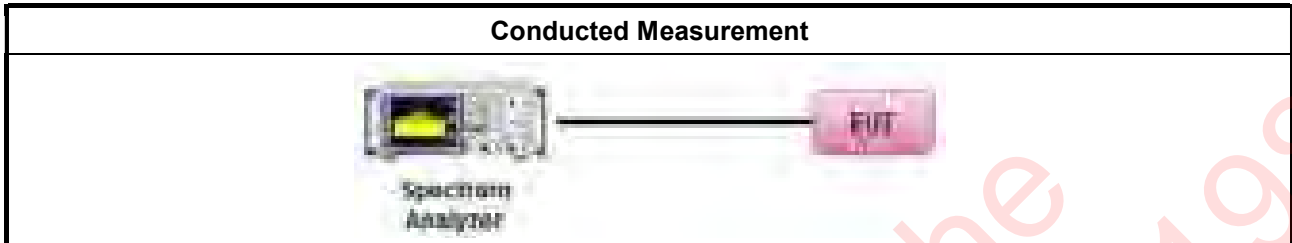
3.4.3 Test Procedures

| Test Method   |  |
|---|--|
| <ul style="list-style-type: none"> <li>Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:</li> </ul> |  |
| <input type="checkbox"/>  | Refer as FCC KDB 789033 D02, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth   |
| [duty cycle ≥ 98% or external video / power trigger]  |  |
| <input checked="" type="checkbox"/>   | Refer as FCC KDB 789033 D02, clause E Method SA-1 (spectral trace averaging).  |
| <input type="checkbox"/>  | Refer as FCC KDB 789033 D02, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)   |
| duty cycle < 98% and average over on/off periods with duty factor   |  |
| <input checked="" type="checkbox"/>   | Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).  |
| <input type="checkbox"/>  | Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)   |
| <input checked="" type="checkbox"/> For conducted measurement.  |  |
| <ul style="list-style-type: none"> <li>If the EUT supports multiple transmit chains using options given below:</li> </ul>   |  |
| <input checked="" type="checkbox"/>   | Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace. |
| <input type="checkbox"/>  | Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,   |
| <input type="checkbox"/>  | Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.  |
| <ul style="list-style-type: none"> <li>If multiple transmit chains, EIRP PPSD calculation could be following as methods:<br/> <math>PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n</math><br/> (calculated in linear unit [mW] and transfer to log unit [dBm])<br/> <math>EIRP_{total} = PPSD_{total} + DG</math></li> </ul>   |  |
| <input type="checkbox"/> For radiated measurement.  |  |
| <ul style="list-style-type: none"> <li>Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"</li> <li>Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li> </ul>   |  |



| <b>Test Method</b> |  |
|--------------------|--|
|                    | Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation. |

### 3.4.4 Test Setup



### 3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

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### 3.5 Unwanted Emissions

#### 3.5.1 Transmitter Unwanted Emissions Limit

| Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit |                       |                         |                      |
|---|-----------------------|-------------------------|----------------------|
| Frequency Range (MHz)   | Field Strength (uV/m) | Field Strength (dBuV/m) | Measure Distance (m) |
| 0.009~0.490   | 2400/F(kHz)           | 48.5 - 13.8             | 300                  |
| 0.490~1.705   | 24000/F(kHz)          | 33.8 - 23               | 30                   |
| 1.705~30.0  | 30                    | 29                      | 30                   |
| 30~88   | 100                   | 40                      | 3                    |
| 88~216  | 150                   | 43.5                    | 3                    |
| 216~960   | 200                   | 46                      | 3                    |
| Above 960   | 500                   | 54                      | 3                    |

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

| Un-restricted band emissions above 1GHz Limit        |   |
|--|---|
| Operating Band                                       | Limit   |
| <input type="checkbox"/> 5.15 - 5.25 GHz             | e.i.r.p. -27 dBm [68.2 dBuV/m@3m]   |
| <input type="checkbox"/> 5.25 - 5.35 GHz             | e.i.r.p. -27 dBm [68.2 dBuV/m@3m]   |
| <input type="checkbox"/> 5.47 - 5.725 GHz            | e.i.r.p. -27 dBm [68.2 dBuV/m@3m]   |
| <input checked="" type="checkbox"/> 5.725 - 5.85 GHz | all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. |

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of



linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

**3.5.2 Measuring Instruments**

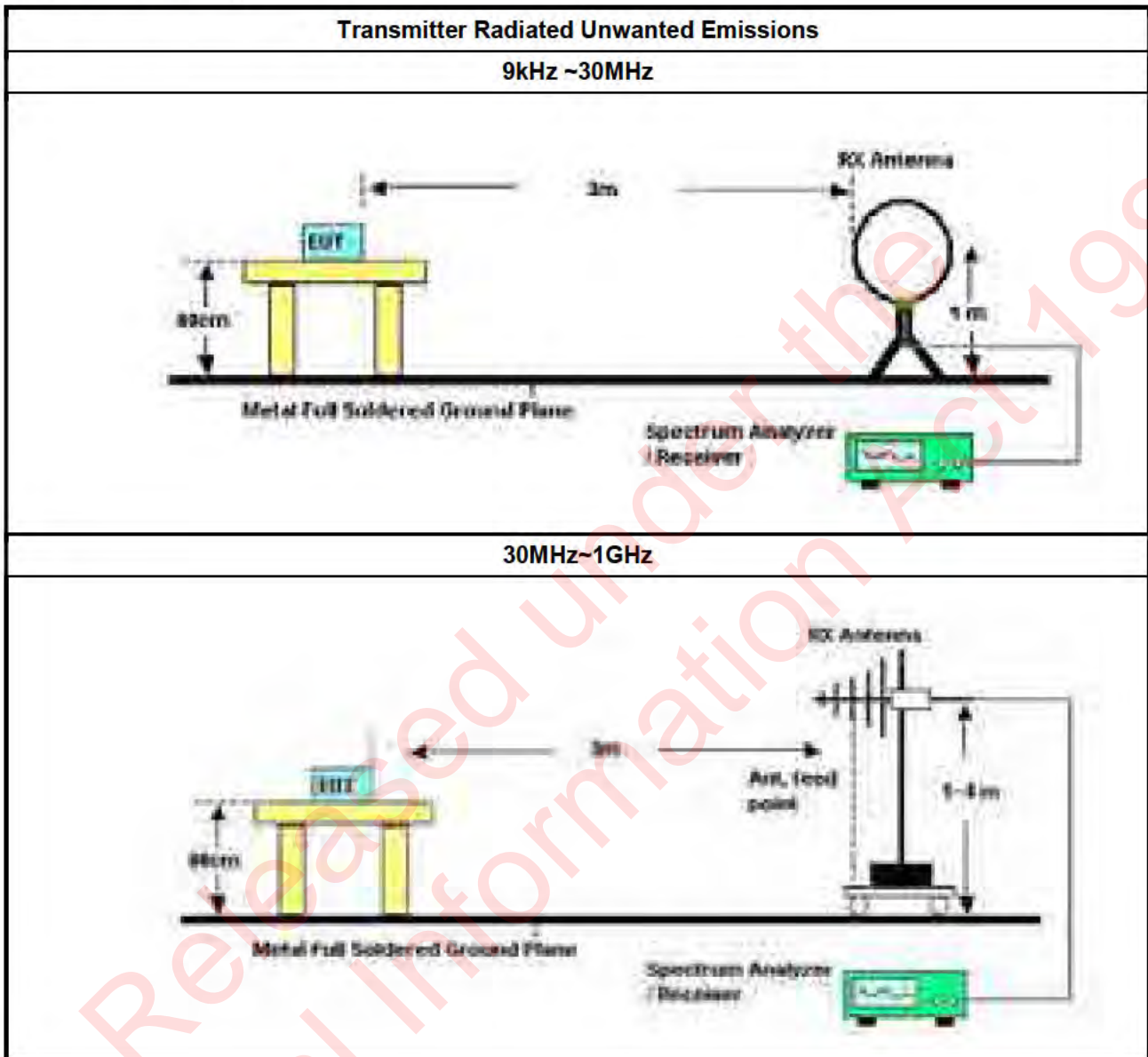
Refer a test equipment and calibration data table in this test report.

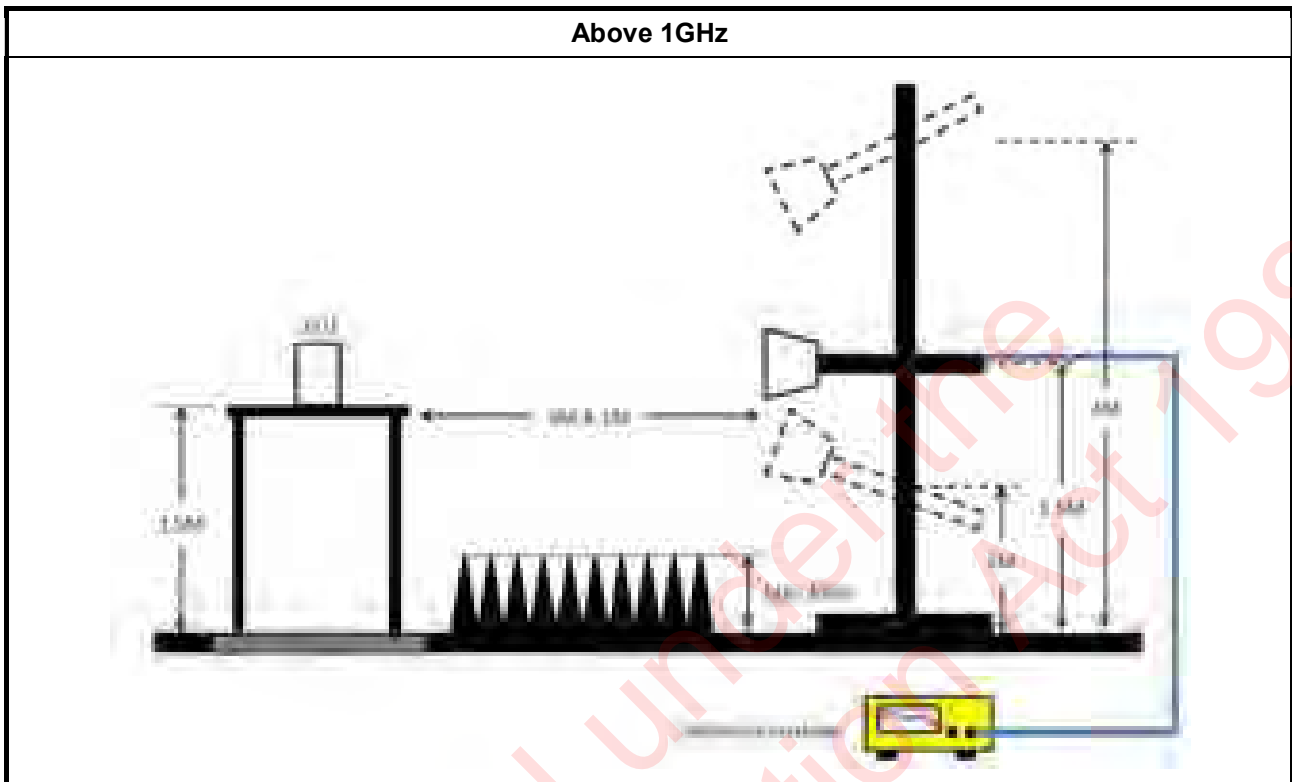
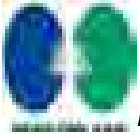
**3.5.3 Test Procedures**

| Test Method |   |
|-------------|---|
|             | <ul style="list-style-type: none"> <li>▪ Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).</li> </ul>  |
|             | <ul style="list-style-type: none"> <li>▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].</li> </ul>  |
|             | <ul style="list-style-type: none"> <li>▪ For the transmitter unwanted emissions shall be measured using following options below:               <ul style="list-style-type: none"> <li>▪ Refer as FCC KDB 789033 D02, clause G)2) for unwanted emissions into non-restricted bands.</li> <li>▪ Refer as FCC KDB 789033 D02, clause G)1) for unwanted emissions into restricted bands.                   <ul style="list-style-type: none"> <li><input type="checkbox"/> Refer as FCC KDB 789033 D02, G)6) Method AD (Trace Averaging).</li> <li><input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02, G)6) Method VB (Reduced VBW).</li> <li><input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.</li> <li><input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.</li> <li><input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02, clause G)5) measurement procedure peak limit.</li> <li><input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.</li> </ul> </li> </ul> </li> </ul> |
|             | <ul style="list-style-type: none"> <li>▪ For radiated measurement.               <ul style="list-style-type: none"> <li>▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.</li> <li>▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.</li> <li>▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li> </ul> </li> </ul>   |
|             | <ul style="list-style-type: none"> <li>▪ The any unwanted emissions level shall not exceed the fundamental emission level.</li> </ul>   |
|             | <ul style="list-style-type: none"> <li>▪ All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.</li> </ul>  |



### 3.5.4 Test Setup





### **3.5.5 Measurement Results Calculation**

The measured Level is calculated using:

Corrected Reading:  $\text{Antenna factor (AF)} + \text{Cable loss (CL)} + \text{Read level (Raw)} - \text{Preamp factor (PA)}$  (if applicable) = Level.

### **3.5.6 Transmitter Unwanted Emissions (Below 30MHz)**

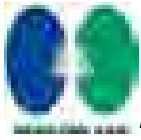
There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10th harmonic or 40 GHz, whichever is appropriate.

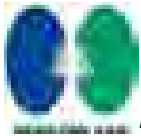
### **3.5.7 Test Result of Transmitter Unwanted Emissions**

Refer as Appendix E



## 4 Test Equipment and Calibration Data

| Instrument                        | Brand          | Model No.          | Serial No.       | Characteristics  | Calibration Date | Calibration Due Date | Remark                |
|-----------------------------------|----------------|--------------------|------------------|------------------|------------------|----------------------|-----------------------|
| EMI Receiver                      | Agilent        | N9038A             | My52260123       | 9kHz ~ 8.4GHz    | Mar. 01, 2024    | Feb. 28, 2025        | Conduction (CO01-CB)  |
| LISN                              | F.C.C.         | FCC-LISN-50-16-2   | 04083            | 150kHz ~ 100MHz  | Feb. 19, 2024    | Feb. 18, 2025        | Conduction (CO01-CB)  |
| LISN                              | Schwarzbeck    | NSLK 8127          | 8127647          | 9kHz ~ 30MHz     | Apr. 24, 2024    | Apr. 23, 2025        | Conduction (CO01-CB)  |
| Pulse Limiter                     | Rohde&Schwarz  | ESH3-Z2            | 100430           | 9kHz ~ 30MHz     | Feb. 08, 2024    | Feb. 07, 2025        | Conduction (CO01-CB)  |
| COND Cable                        | Woken          | Cable              | Low cable-CO01   | 9kHz ~ 30MHz     | Oct. 17, 2023    | Oct. 16, 2024        | Conduction (CO01-CB)  |
| Test Software                     | SPORTON        | SENSE-EMI          | V5.11            | 150kHz-30MHz     | N.C.R.           | N.C.R.               | Conduction (CO01-CB)  |
| Loop Antenna                      | Teseq          | HLA 6121           | 65417            | 9kHz - 30 MHz    | Oct. 13, 2023    | Oct. 12, 2024        | Radiation (03CH05-CB) |
| 3m Semi Anechoic Chamber NSA      | TDK            | SAC-3M             | 03CH05-CB        | 30 MHz ~ 1 GHz   | Aug. 02, 2023    | Aug. 01, 2024        | Radiation (03CH05-CB) |
| 3m Semi Anechoic Chamber NSA      | TDK            | SAC-3M             | 03CH05-CB        | 30 MHz ~ 1 GHz   | Aug. 01, 2024    | Jul. 31, 2025        | Radiation (03CH05-CB) |
| Bilog Antenna with 6dB Attenuator | TESEQ & EMCI   | CBL 6112D & N-6-06 | 35236 & AT-N0610 | 30MHz ~ 2GHz     | Mar. 23, 2024    | Mar. 22, 2025        | Radiation (03CH05-CB) |
| Amplifier                         | EMCI           | EMC330N            | 980331           | 20MHz ~ 3GHz     | May 02, 2024     | May 01, 2025         | Radiation (03CH05-CB) |
| Spectrum Analyzer                 | R&S            | FSP40              | 100304           | 9kHz ~ 40GHz     | Apr. 17, 2024    | Apr. 16, 2025        | Radiation (03CH05-CB) |
| EMI Test Receiver                 | R&S            | ESR7               | 102172           | 9kHz ~ 7GHz      | Oct. 20, 2023    | Oct. 19, 2024        | Radiation (03CH05-CB) |
| RF Cable-low                      | Woken          | RG402              | Low Cable-04+23  | 30MHz~1GHz       | Dec. 06, 2023    | Dec. 05, 2024        | Radiation (03CH05-CB) |
| Test Software                     | SPORTON        | SENSE-15407_NII    | V5.11.19         | 5.15GHz-7.115GHz | N.C.R.           | N.C.R.               | Radiation (03CH05-CB) |
| 3m Semi Anechoic Chamber VSWR     | TDK            | SAC-3M             | 03CH03-CB        | 1GHz ~18GHz 3m   | May 03, 2024     | May 02, 2025         | Radiation (03CH03-CB) |
| Horn Antenna                      | ETS · Lindgren | 3115               | 6821             | 750MHz~18GHz     | Jan. 24, 2024    | Jan. 23, 2025        | Radiation (03CH03-CB) |
| Horn Antenna                      | Schwarzbeck    | BBHA 9170          | BBHA9170252      | 15GHz ~ 40GHz    | Sep. 04, 2023    | Sep. 03, 2024        | Radiation (03CH03-CB) |
| Pre-Amplifier                     | Agilent        | 8449B              | 3008A02097       | 1GHz ~ 26.5GHz   | Jun. 30, 2023    | Jun. 29, 2024        | Radiation (03CH03-CB) |
| Pre-Amplifier                     | Agilent        | 8449B              | 3008A02097       | 1GHz ~ 26.5GHz   | Jun. 29, 2024    | Jun. 28, 2025        | Radiation (03CH03-CB) |
| Pre-Amplifier                     | SGH            | SGH184             | 20221107-3       | 18GHz ~ 40GHz    | Nov. 24, 2023    | Nov. 23, 2024        | Radiation (03CH03-CB) |



| Instrument        | Brand   | Model No.       | Serial No.       | Characteristics  | Calibration Date | Calibration Due Date | Remark                |
|-------------------|---------|-----------------|------------------|------------------|------------------|----------------------|-----------------------|
| Spectrum Analyzer | R&S     | FSP40           | 100019           | 9kHz ~ 40GHz     | Jun. 11, 2024    | Jun. 10, 2025        | Radiation (03CH03-CB) |
| RF Cable-high     | Woken   | RG402           | High Cable-20+29 | 1GHz ~ 18GHz     | Feb. 29, 2024    | Feb. 28, 2025        | Radiation (03CH03-CB) |
| RF Cable-high     | Woken   | RG402           | High Cable-29    | 1GHz ~ 18GHz     | Feb. 29, 2024    | Feb. 28, 2025        | Radiation (03CH03-CB) |
| High Cable        | Woken   | WCA0929M        | 40G#5+6          | 1GHz ~ 40 GHz    | Jan. 11, 2024    | Jan. 10, 2025        | Radiation (03CH03-CB) |
| Test Software     | SPORTON | SENSE-15407_NII | V5.11.19         | 5.15GHz-7.115GHz | N.C.R.           | N.C.R.               | Radiation (03CH03-CB) |
| Spectrum analyzer | R&S     | FSV40           | 100979           | 9kHz~40GHz       | May 27, 2024     | May 26, 2025         | Conducted (TH01-CB)   |
| Switch            | SPTCB   | SP-SWI          | SWI-01           | 1~26.5 GHz       | Oct. 03, 2023    | Oct. 02, 2024        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402           | High Cable-06    | 1 GHz – 18 GHz   | Oct. 02, 2023    | Oct. 01, 2024        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402           | High Cable-07    | 1 GHz – 18 GHz   | Oct. 02, 2023    | Oct. 01, 2024        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402           | High Cable-08    | 1 GHz – 18 GHz   | Oct. 02, 2023    | Oct. 01, 2024        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402           | High Cable-09    | 1 GHz – 18 GHz   | Oct. 02, 2023    | Oct. 01, 2024        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402           | High Cable-10    | 1 GHz – 18 GHz   | Oct. 02, 2023    | Oct. 01, 2024        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402           | High Cable-30    | 1 GHz – 18 GHz   | Oct. 02, 2023    | Oct. 01, 2024        | Conducted (TH01-CB)   |
| Power Sensor      | Agilent | E9327A          | US40442088       | 50MHz~18GHz      | Mar. 01, 2024    | Feb. 28, 2025        | Conducted (TH01-CB)   |
| Power Meter       | Agilent | E4416A          | MY45100745       | 50MHz~18GHz      | Jul. 12, 2024    | Jul. 11, 2025        | Conducted (TH01-CB)   |
| Test Software     | SPORTON | SENSE-15407_NII | V5.11.19         | 5.15GHz-7.115GHz | N.C.R.           | N.C.R.               | Conducted (TH01-CB)   |

Note: Calibration Interval of instruments listed above is one year.

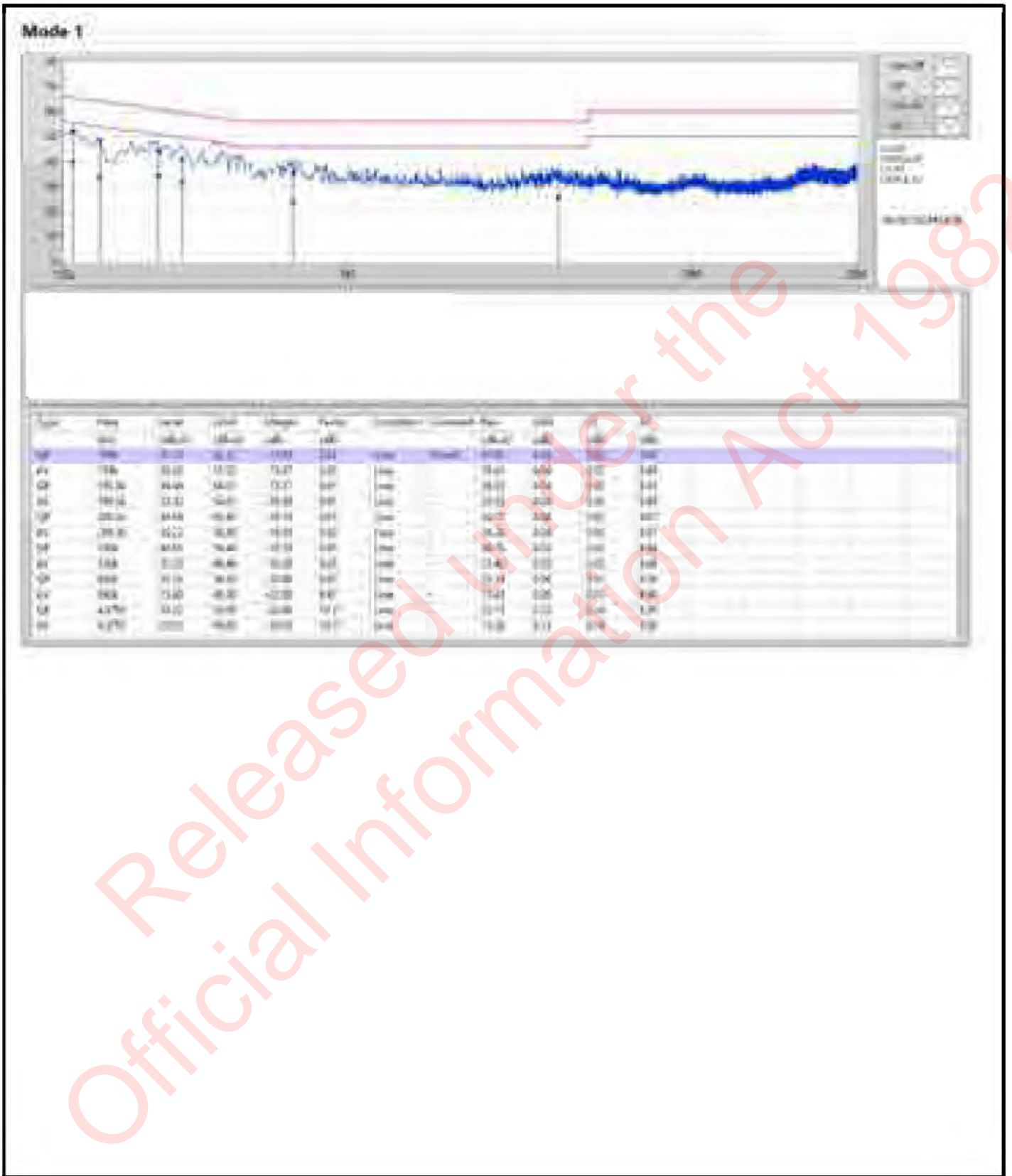
NCR means Non-Calibration required.



Summary

| Mode   | Result | Type | Freq (Hz) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Condition |
|--------|--------|------|-----------|--------------|--------------|-------------|-----------|
| Mode 1 | Pass   | QP   | 150k      | 52.31        | 66.00        | -13.69      | Neutral   |

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Summary

| Mode                  | Max-N dB (Hz) | Max-OBW (Hz) | ITU-Code | Min-N dB (Hz) | Min-OBW (Hz) |
|-----------------------|---------------|--------------|----------|---------------|--------------|
| 5.725-5.85GHz         | -             | -            | -        | -             | -            |
| QPSK5_5MHz_Nss1_2TX   | 4.634M        | 4.607M       | 4M61G7D  | 4.029M        | 4.578M       |
| QPSK10_10MHz_Nss1_2TX | 9.295M        | 9.248M       | 9M25G7D  | 9.213M        | 9.195M       |
| QPSK15_15MHz_Nss1_2TX | 13.901M       | 13.835M      | 13M8G7D  | 13.819M       | 13.776M      |
| QPSK20_20MHz_Nss1_2TX | 18.535M       | 18.429M      | 18M4G7D  | 18.48M        | 18.313M      |
| QPSK30_30MHz_Nss1_2TX | 27.803M       | 27.947M      | 27M9G7D  | 27.803M       | 27.686M      |
| QPSK40_40MHz_Nss1_2TX | 37.07M        | 37.01M       | 37M0G7D  | 36.96M        | 36.851M      |

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Min-OBW = Minimum 99% occupied bandwidth

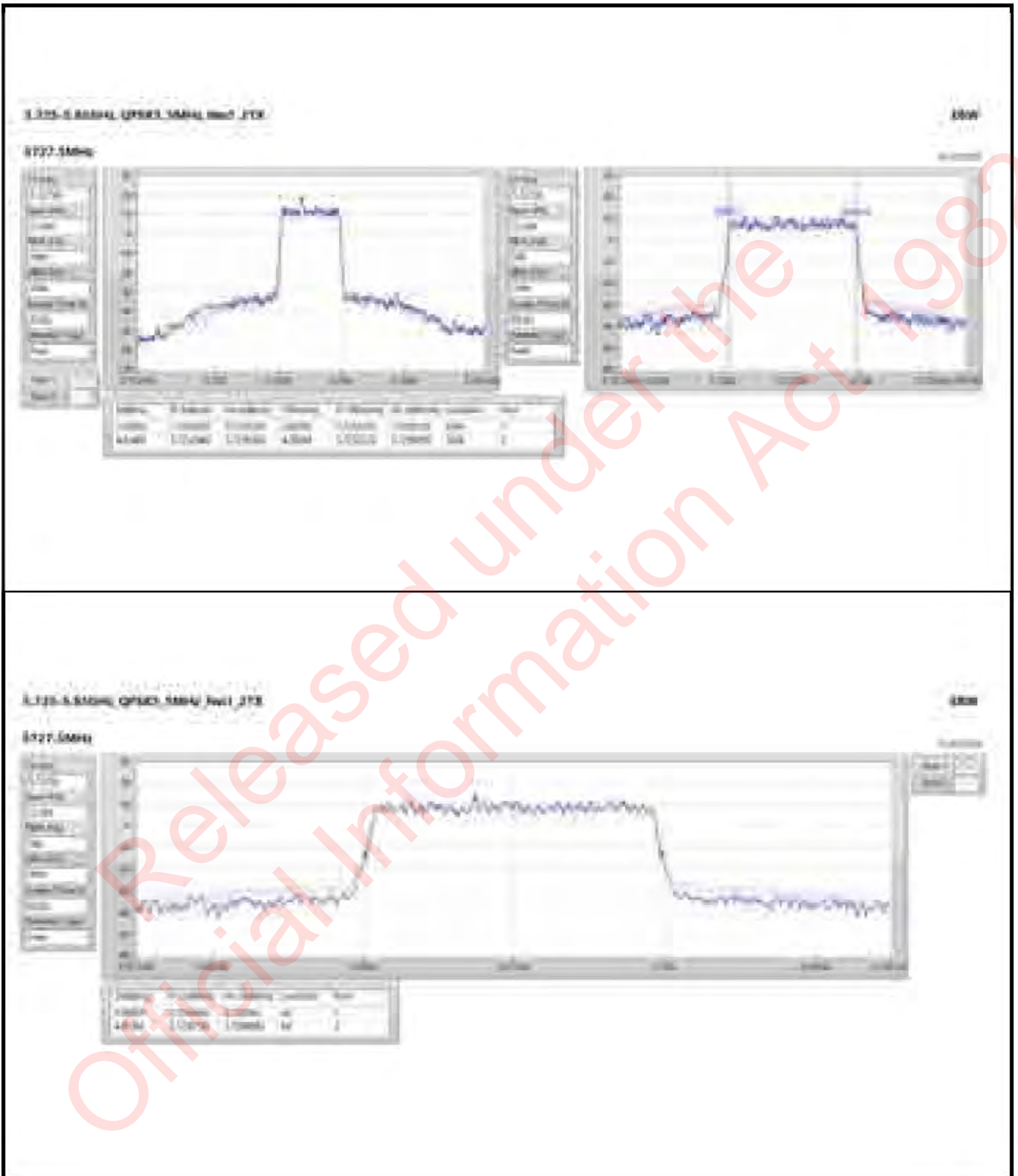
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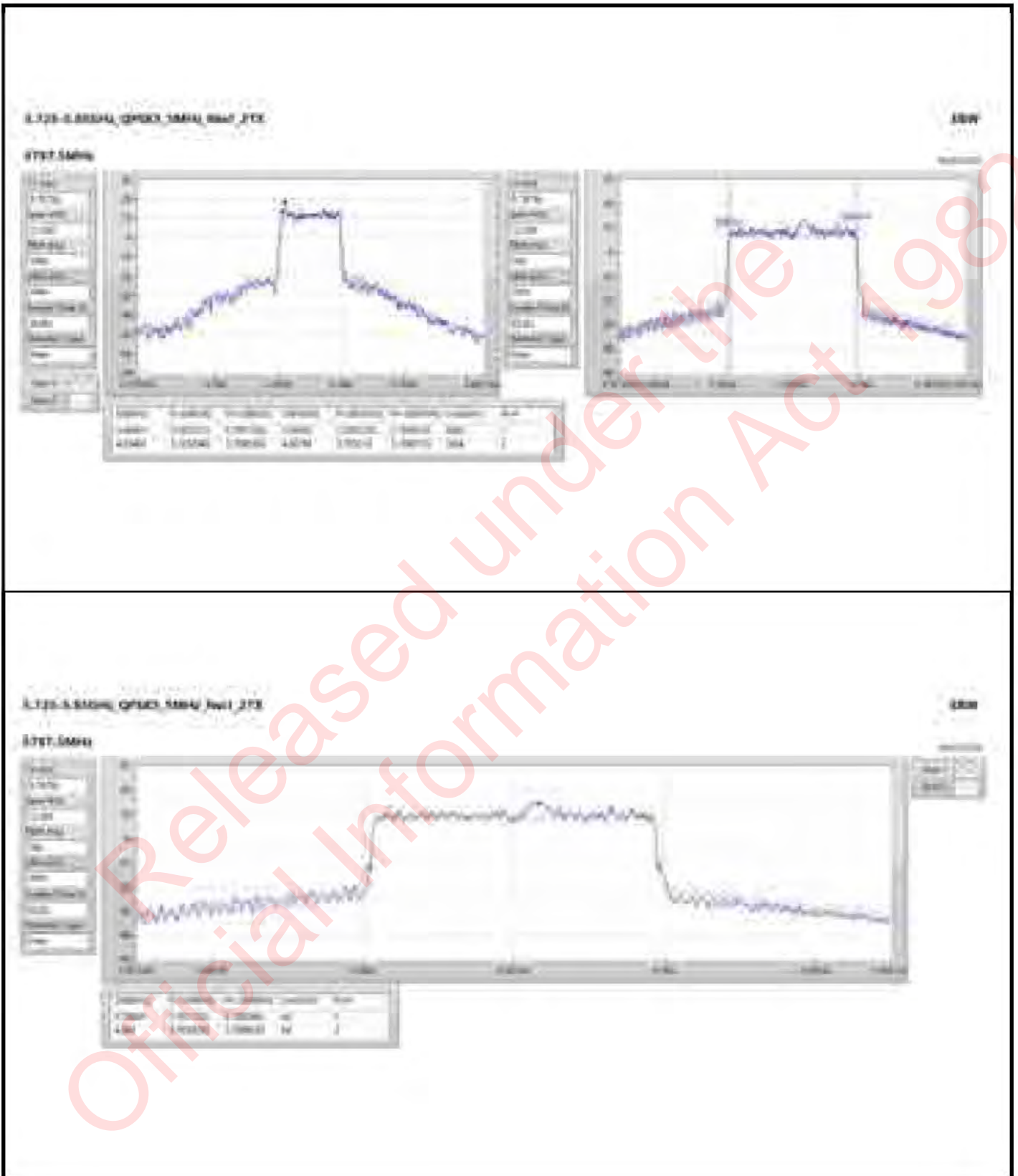


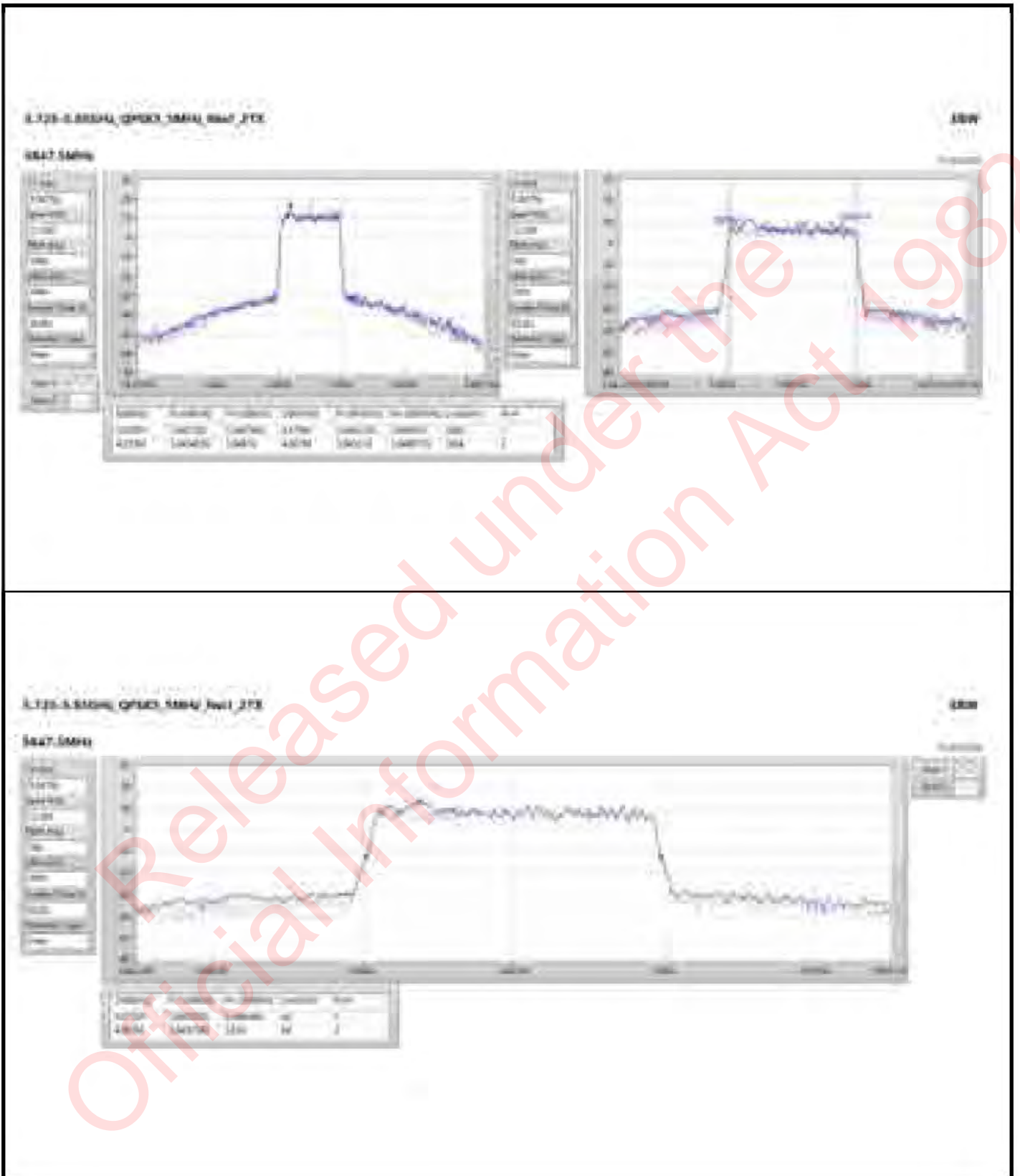
Result

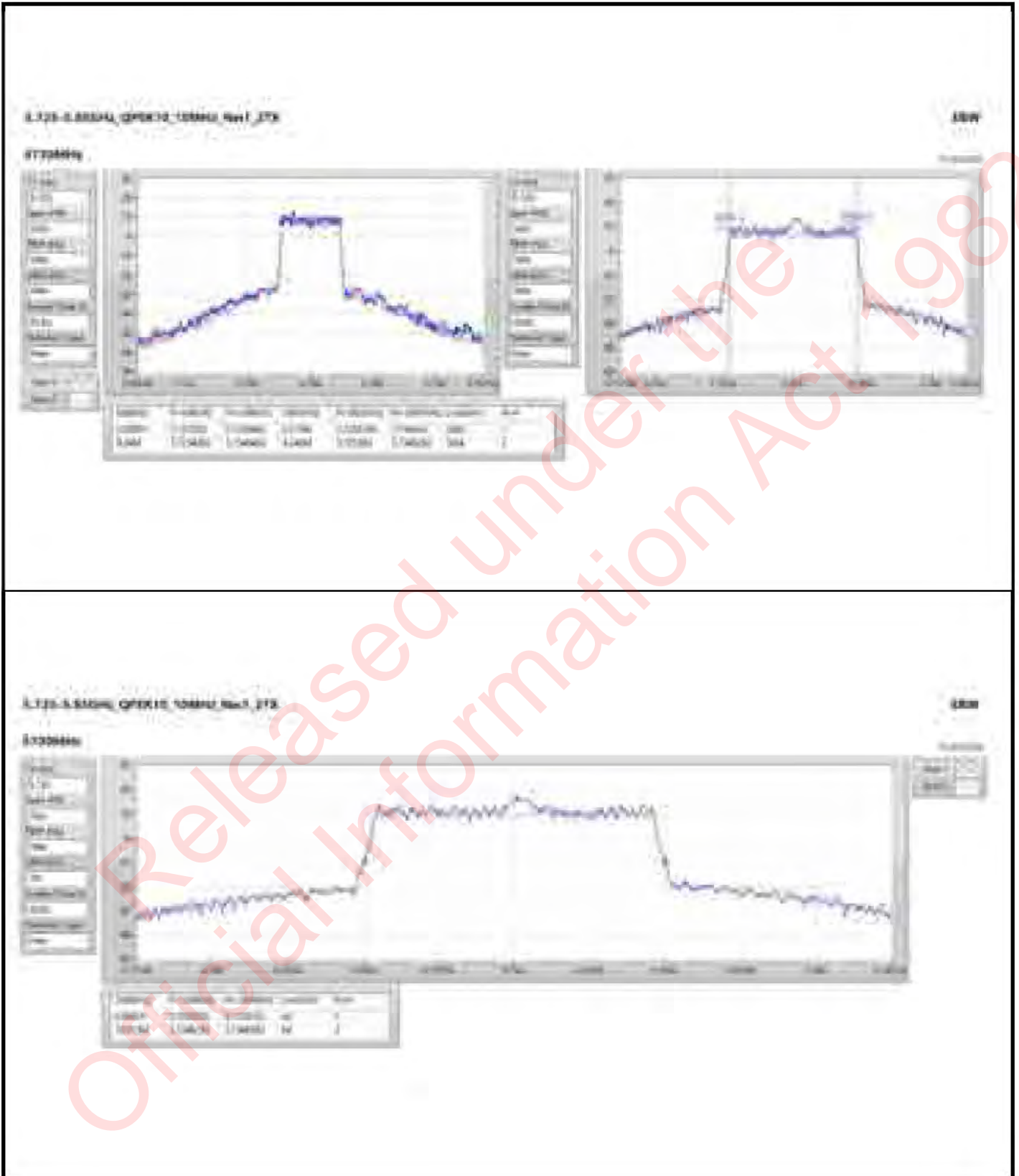
| Mode                  | Result | Limit (Hz) | Port 1-N dB (Hz) | Port 1-OBW (Hz) | Port 2-N dB (Hz) | Port 2-OBW (Hz) |
|-----------------------|--------|------------|------------------|-----------------|------------------|-----------------|
| QPSK5_5MHz_Nss1_2TX   | -      | -          | -                | -               | -                | -               |
| 5727.5MHz             | Pass   | 500k       | 4.098M           | 4.605M          | 4.634M           | 4.588M          |
| 5787.5MHz             | Pass   | 500k       | 4.483M           | 4.593M          | 4.634M           | 4.607M          |
| 5847.5MHz             | Pass   | 500k       | 4.029M           | 4.578M          | 4.235M           | 4.607M          |
| QPSK10_10MHz_Nss1_2TX | -      | -          | -                | -               | -                | -               |
| 5730MHz               | Pass   | 500k       | 9.268M           | 9.212M          | 9.24M            | 9.248M          |
| 5787MHz               | Pass   | 500k       | 9.295M           | 9.212M          | 9.24M            | 9.195M          |
| 5845MHz               | Pass   | 500k       | 9.268M           | 9.209M          | 9.213M           | 9.204M          |
| QPSK15_15MHz_Nss1_2TX | -      | -          | -                | -               | -                | -               |
| 5732.5MHz             | Pass   | 500k       | 13.86M           | 13.816M         | 13.819M          | 13.776M         |
| 5787.5MHz             | Pass   | 500k       | 13.86M           | 13.806M         | 13.86M           | 13.813M         |
| 5842.5MHz             | Pass   | 500k       | 13.86M           | 13.835M         | 13.901M          | 13.834M         |
| QPSK20_20MHz_Nss1_2TX | -      | -          | -                | -               | -                | -               |
| 5735MHz               | Pass   | 500k       | 18.535M          | 18.423M         | 18.48M           | 18.418M         |
| 5785MHz               | Pass   | 500k       | 18.48M           | 18.413M         | 18.535M          | 18.396M         |
| 5840MHz               | Pass   | 500k       | 18.535M          | 18.429M         | 18.48M           | 18.313M         |
| QPSK30_30MHz_Nss1_2TX | -      | -          | -                | -               | -                | -               |
| 5740MHz               | Pass   | 500k       | 27.803M          | 27.739M         | 27.803M          | 27.704M         |
| 5787MHz               | Pass   | 500k       | 27.803M          | 27.69M          | 27.803M          | 27.688M         |
| 5835MHz               | Pass   | 500k       | 27.803M          | 27.947M         | 27.803M          | 27.686M         |
| QPSK40_40MHz_Nss1_2TX | -      | -          | -                | -               | -                | -               |
| 5745MHz               | Pass   | 500k       | 36.96M           | 37.01M          | 36.96M           | 36.924M         |
| 5775MHz               | Pass   | 500k       | 36.96M           | 36.897M         | 37.07M           | 36.851M         |
| 5830MHz               | Pass   | 500k       | 37.07M           | 36.911M         | 37.07M           | 36.962M         |

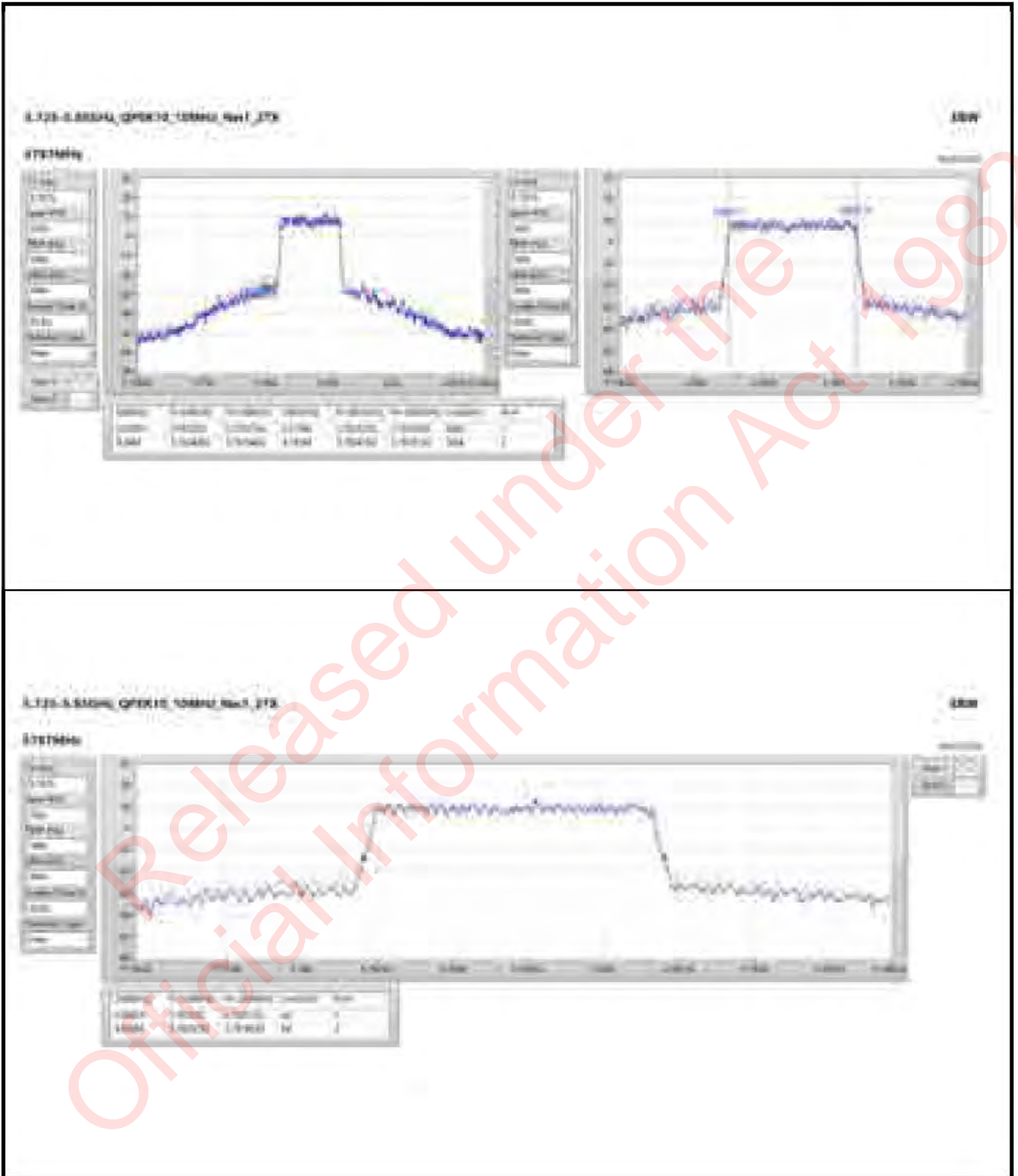
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band  
 Port X-OBW = Port X 99% occupied bandwidth

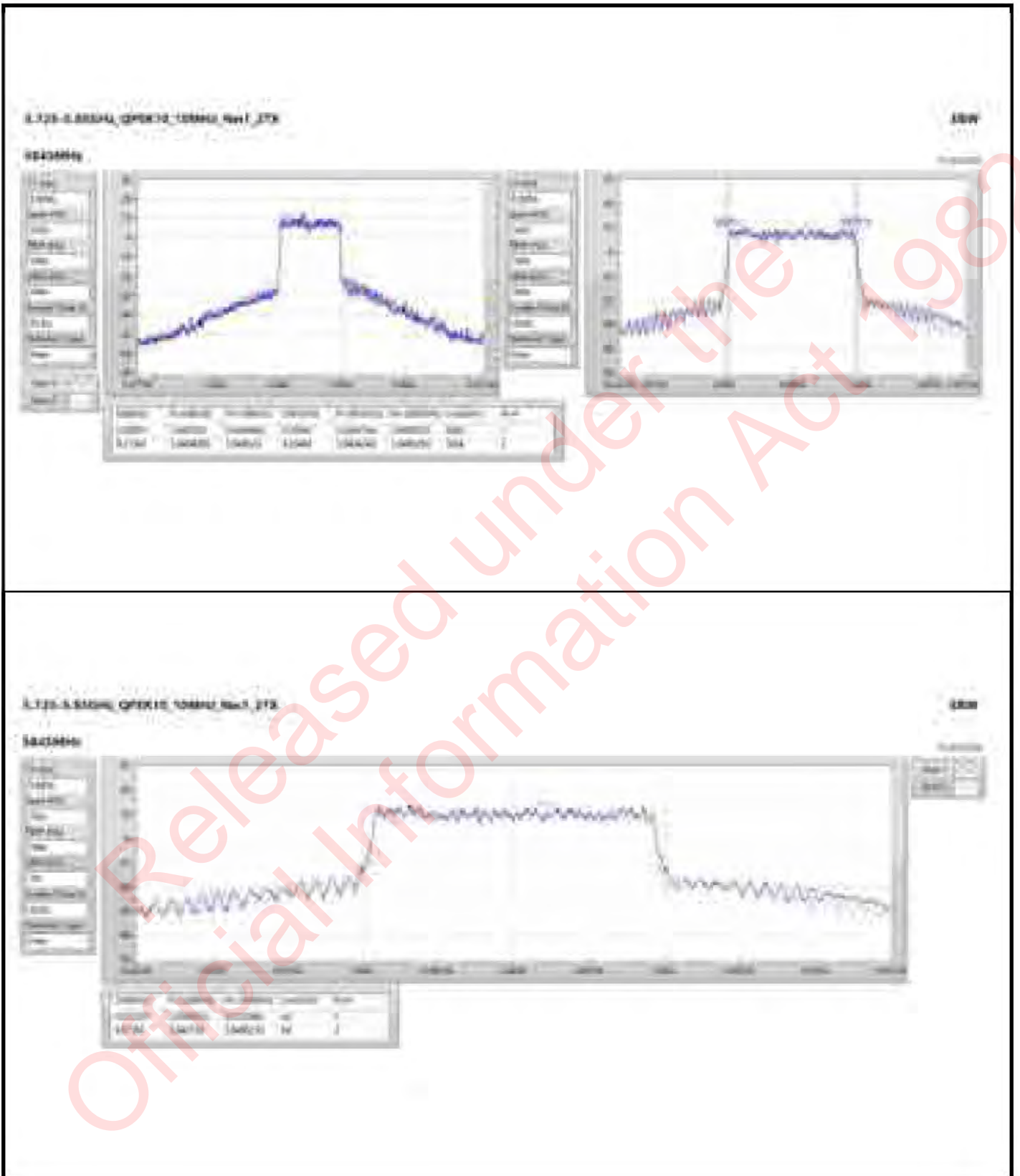


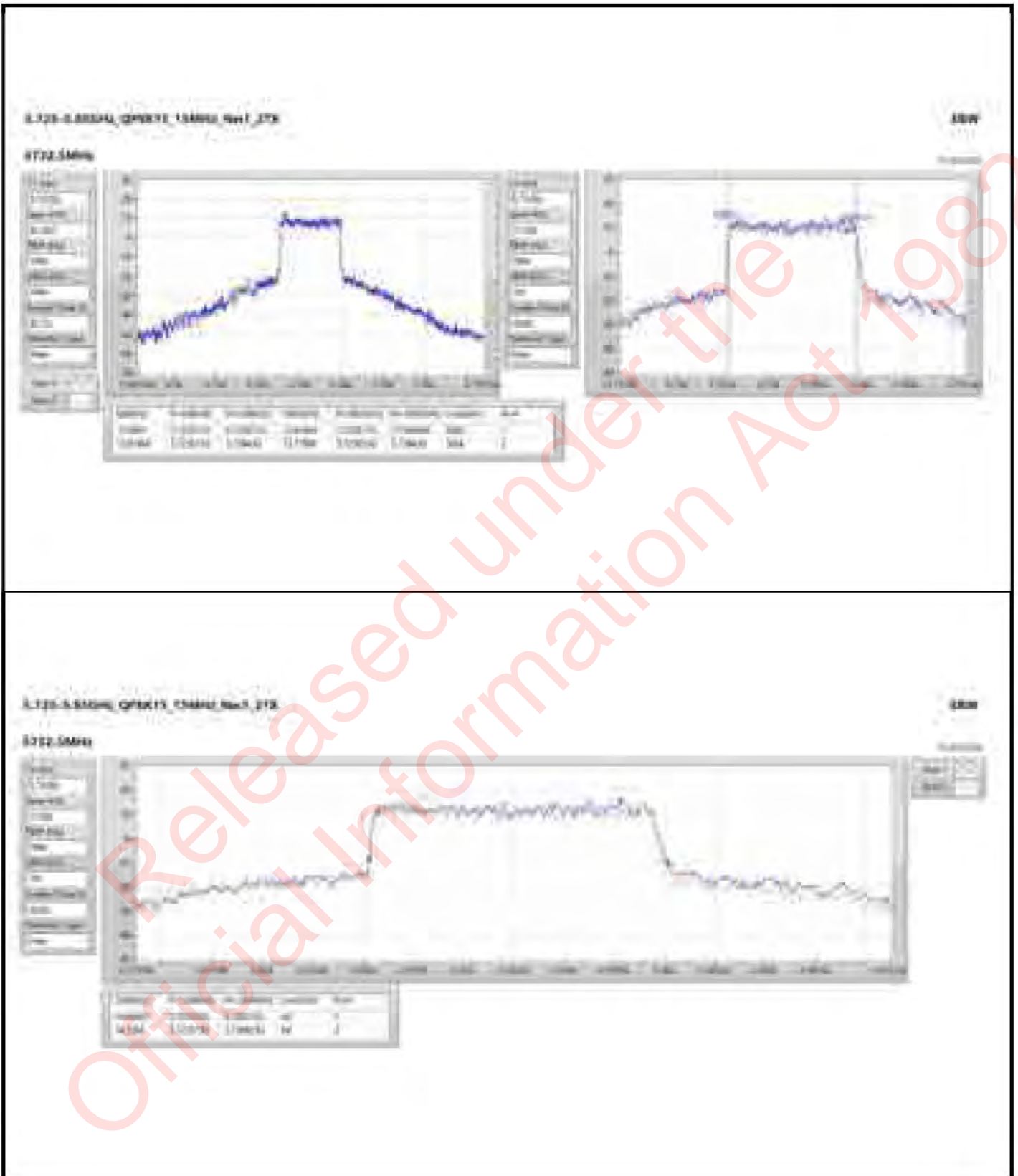


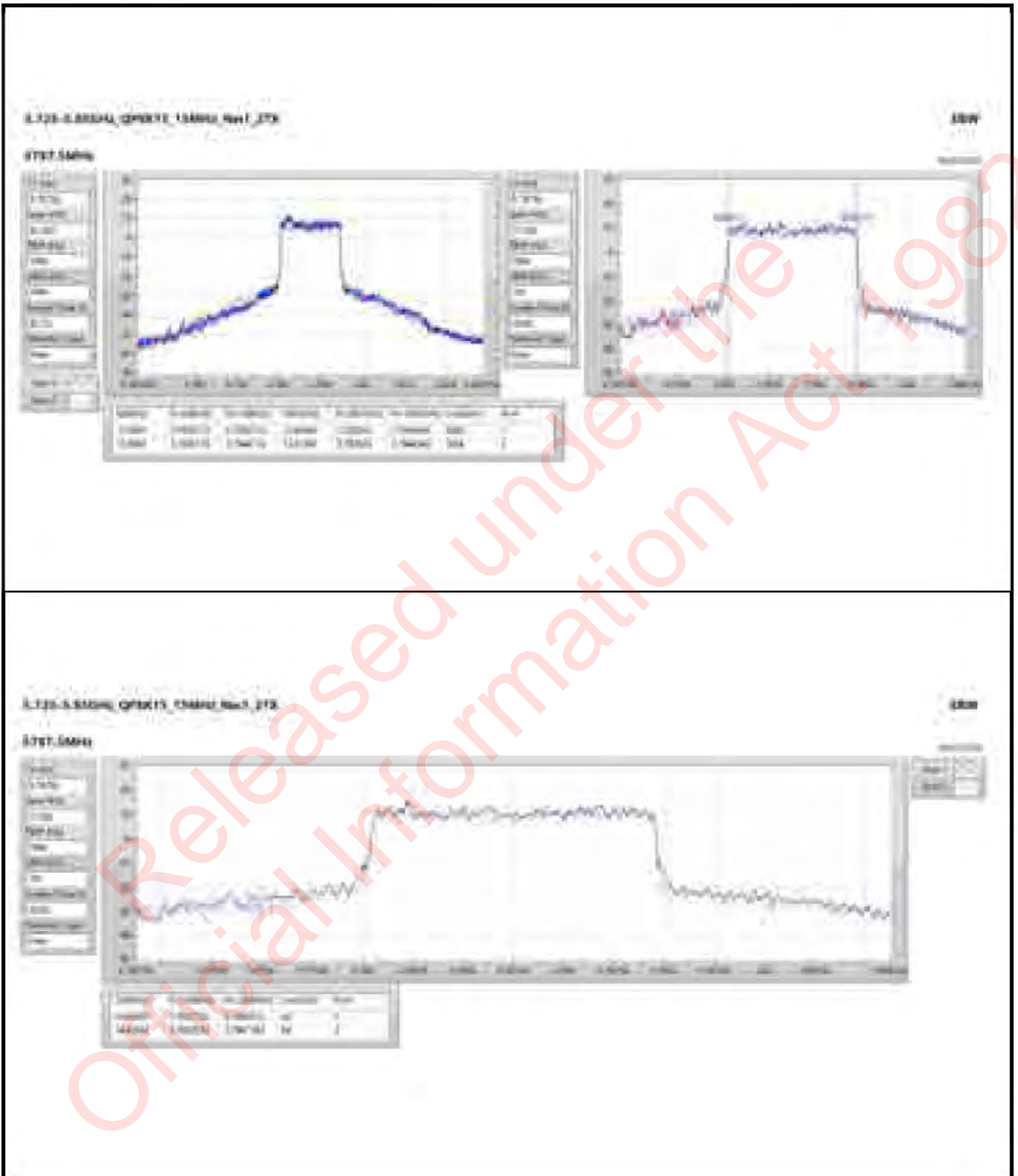


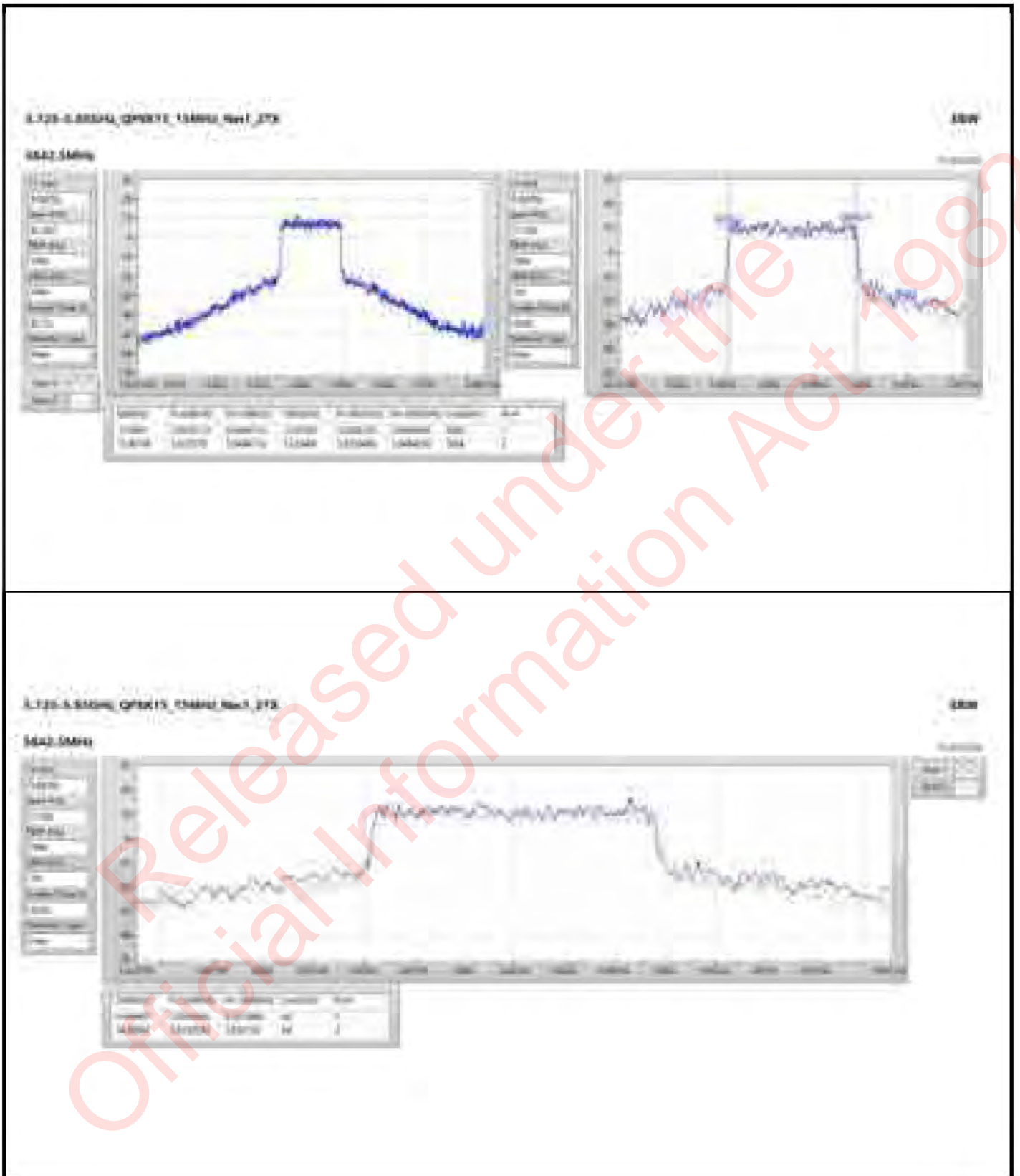


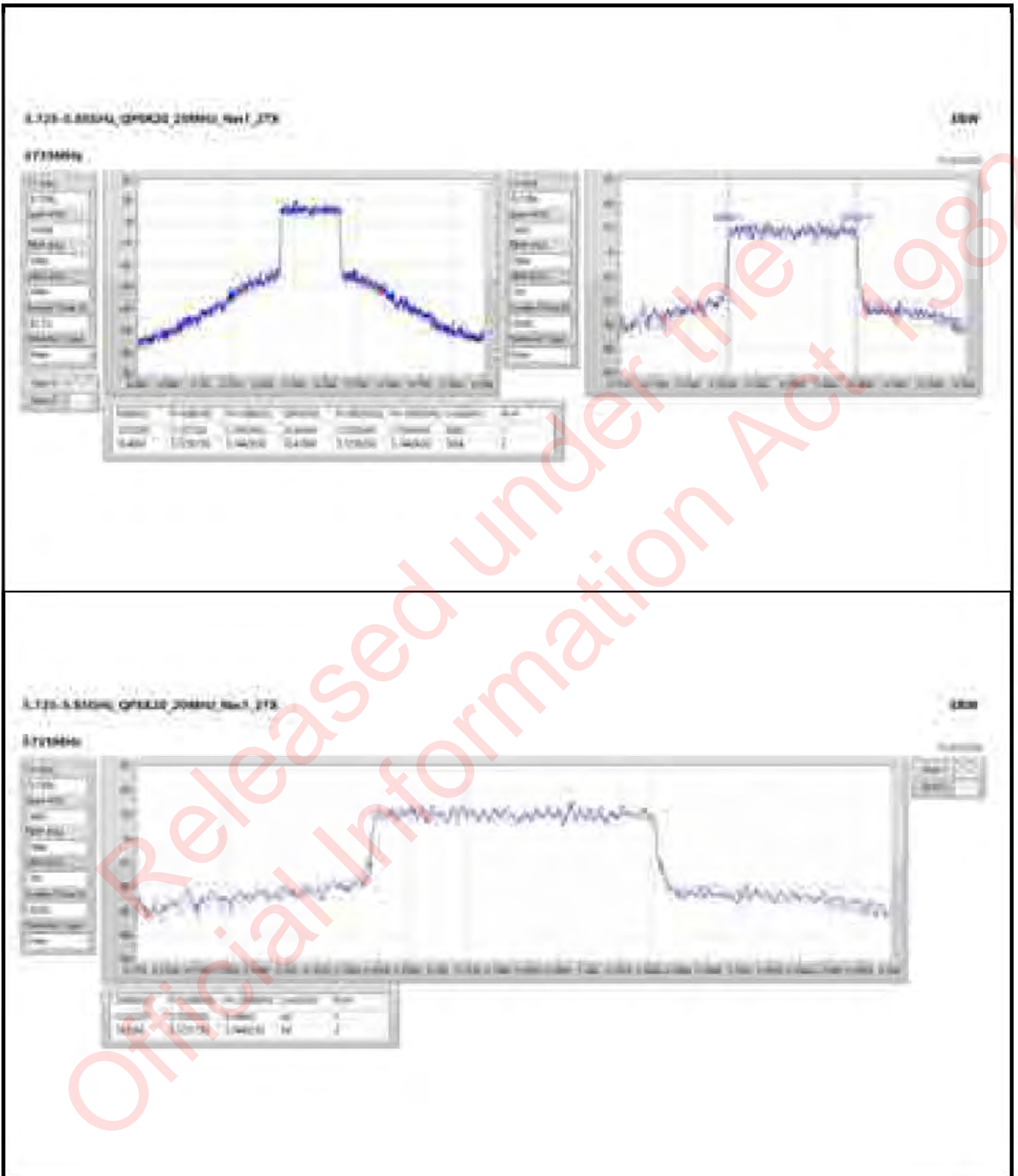


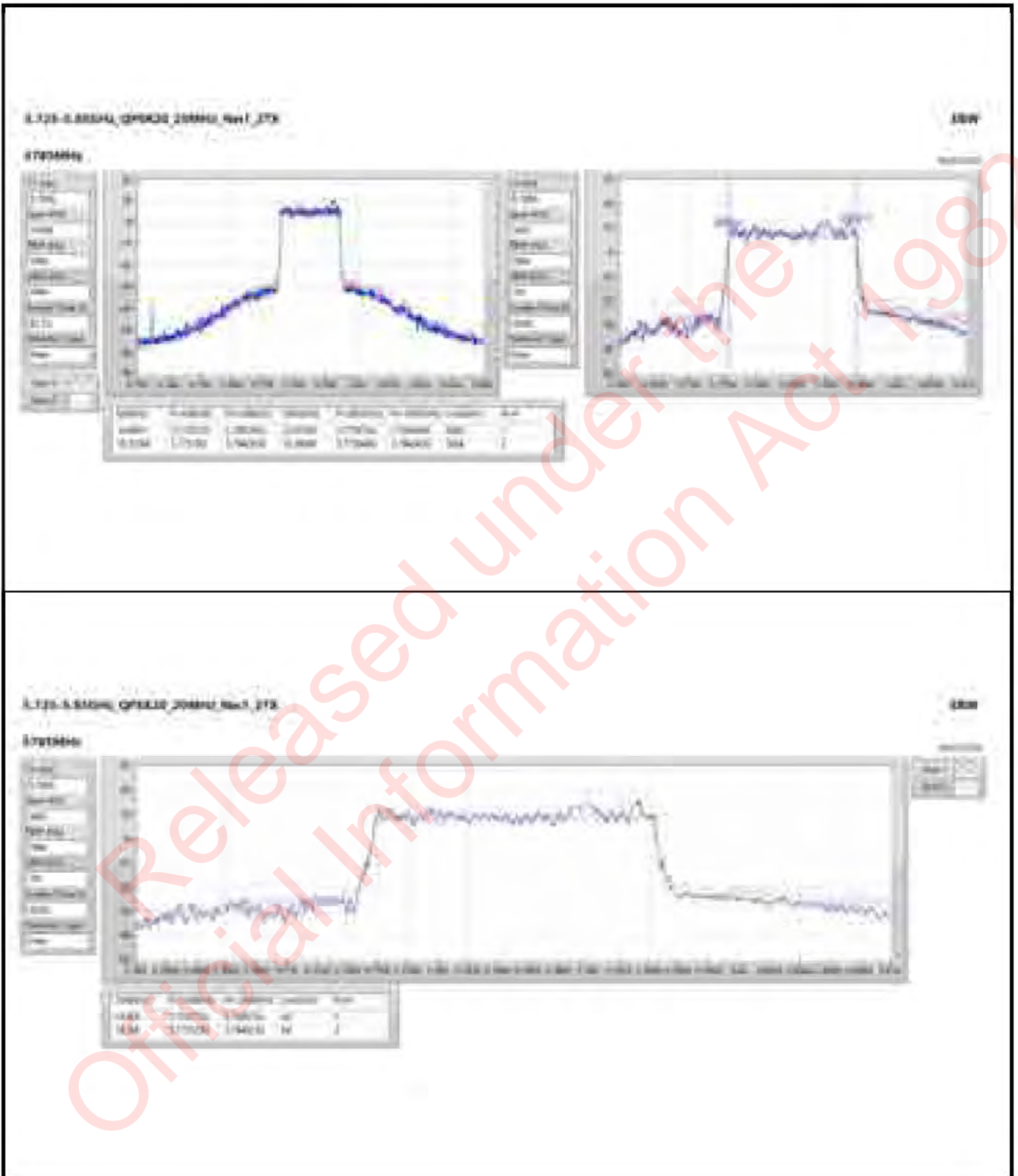


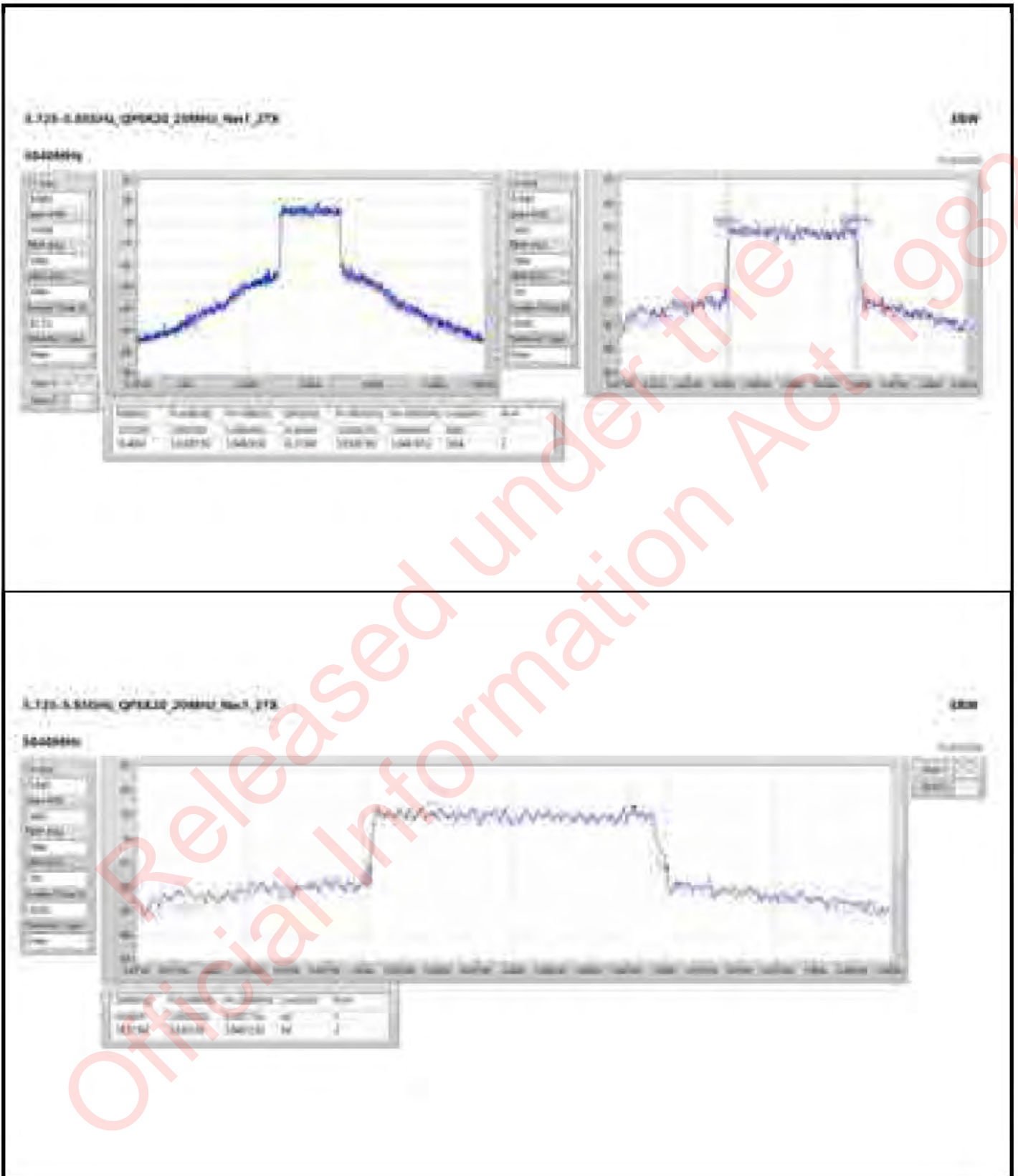


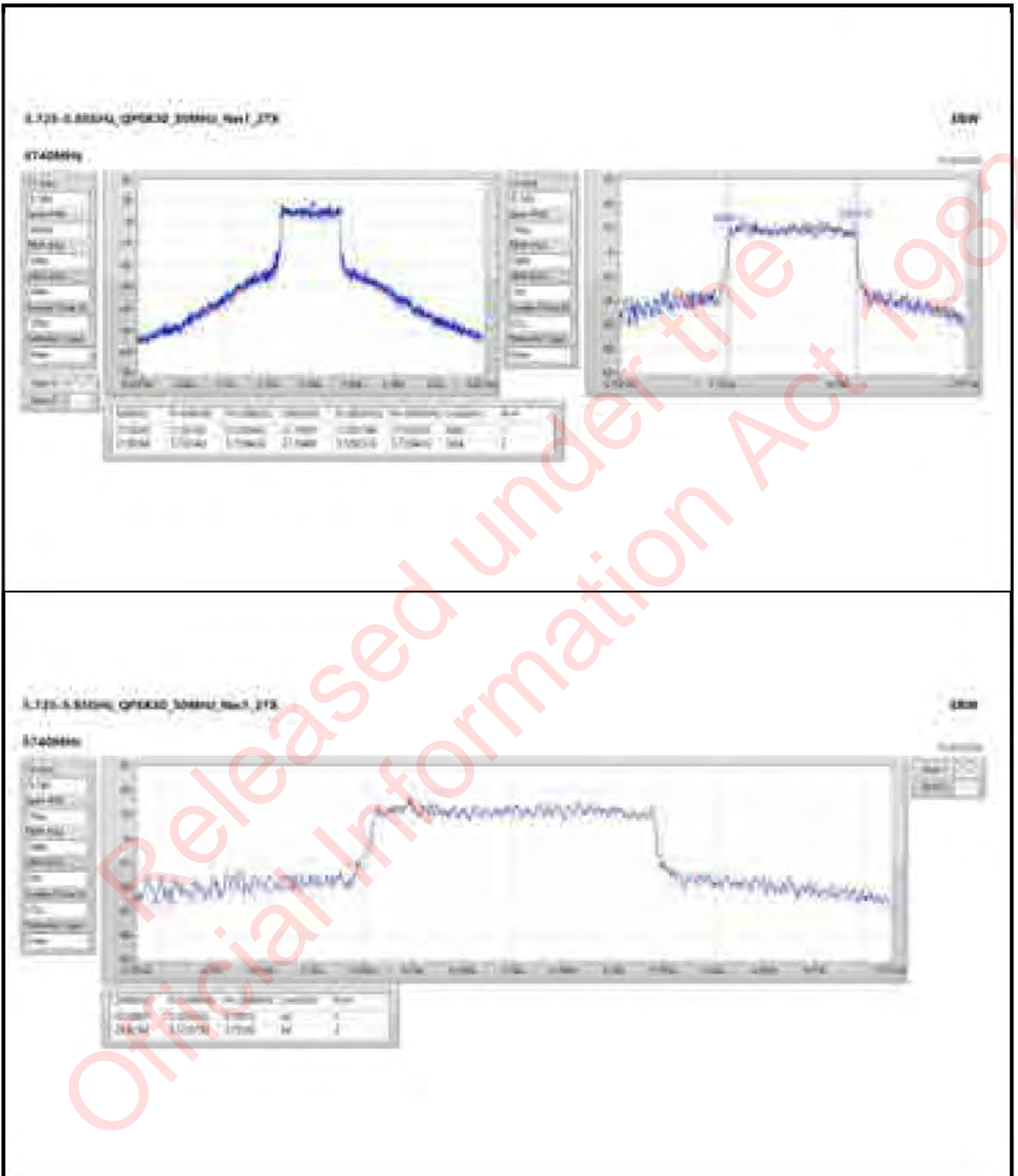


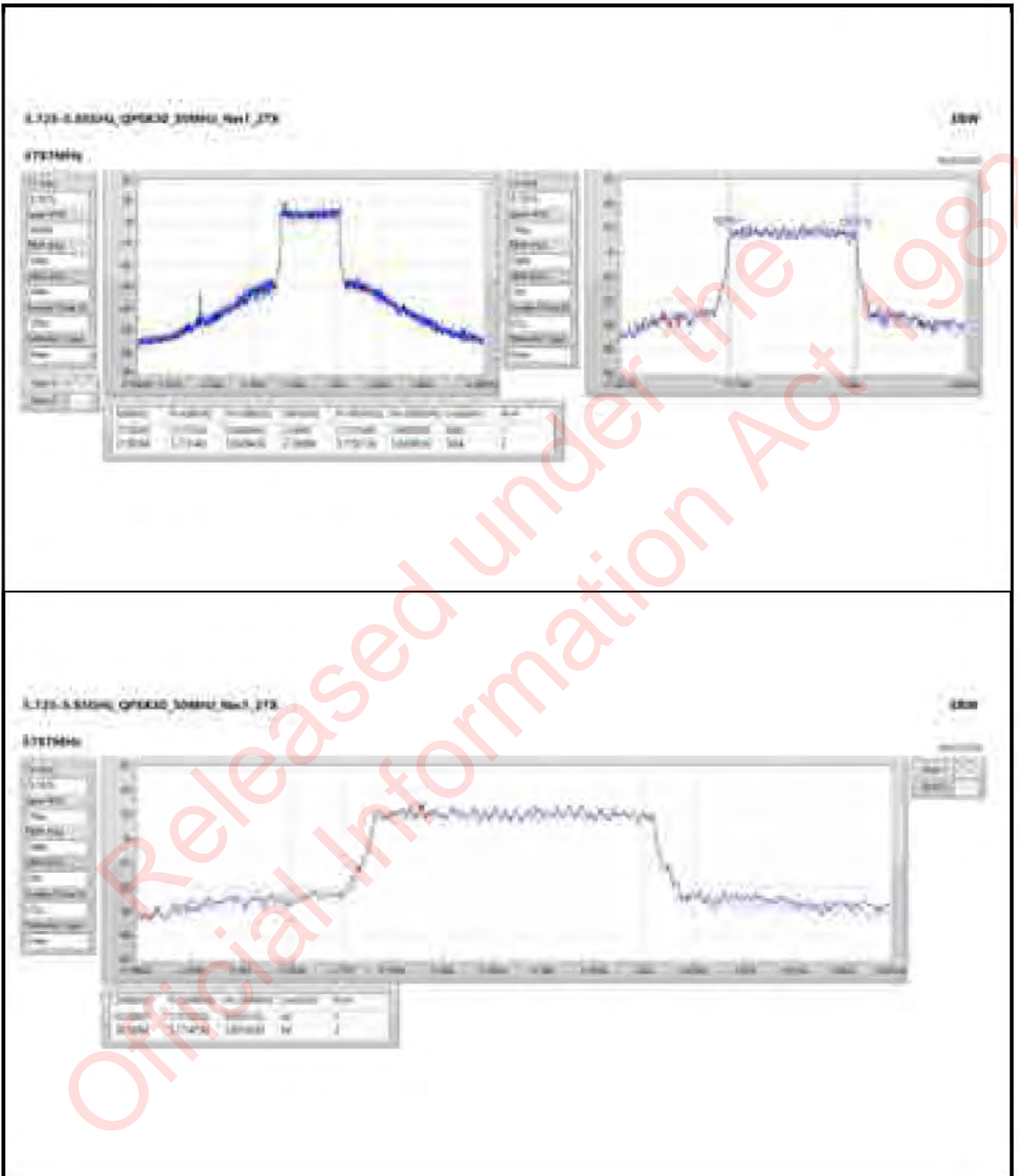


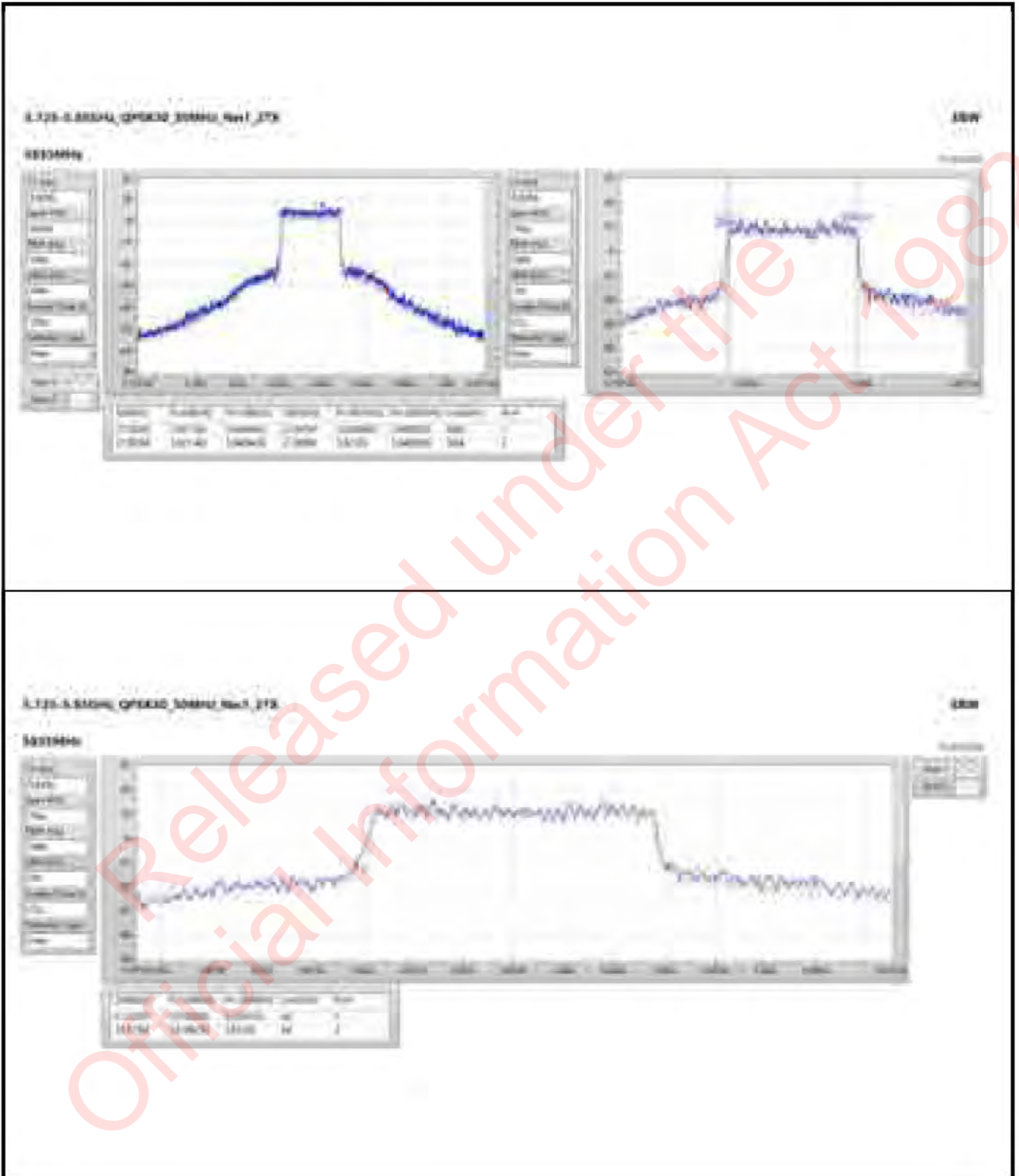


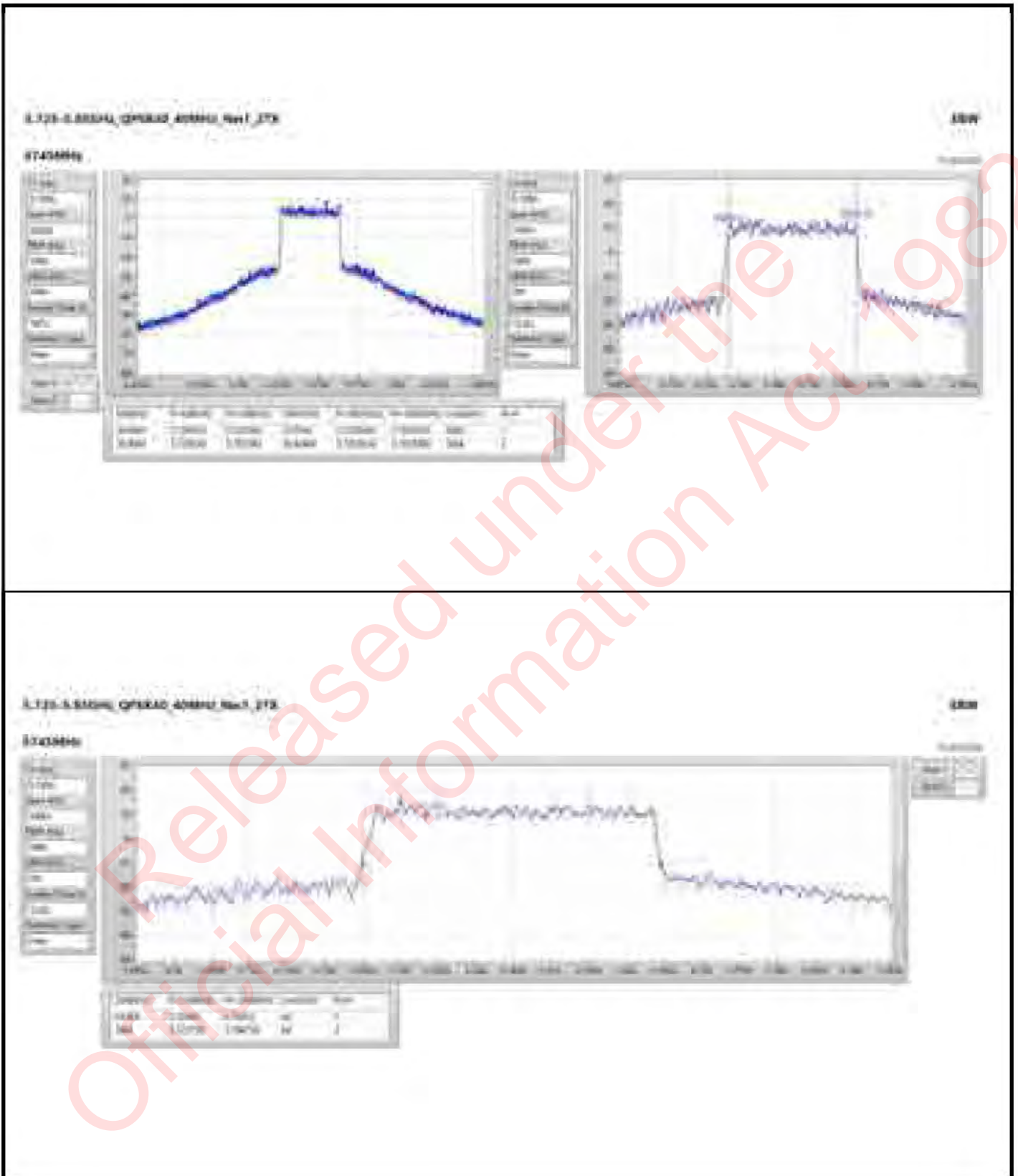


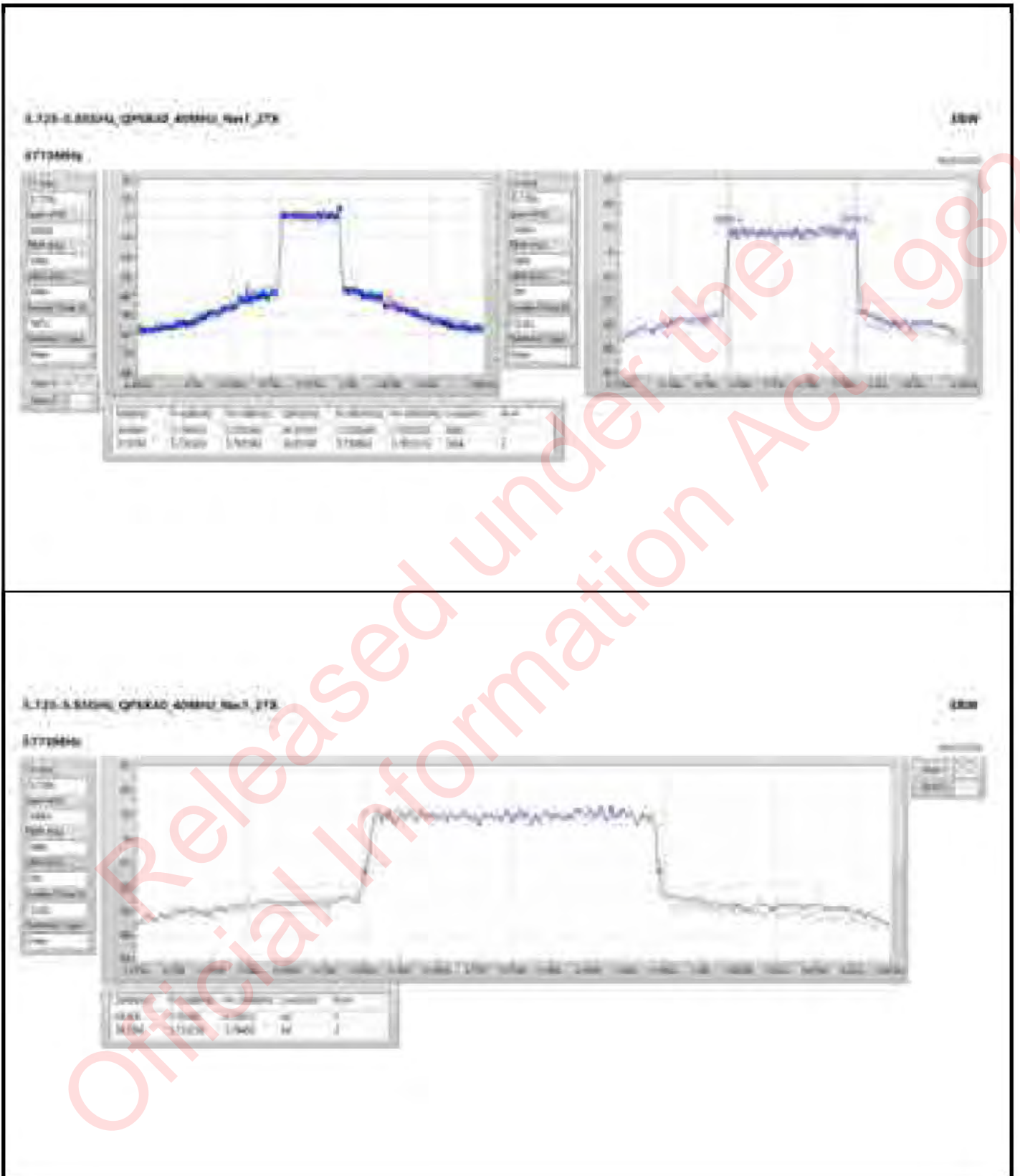


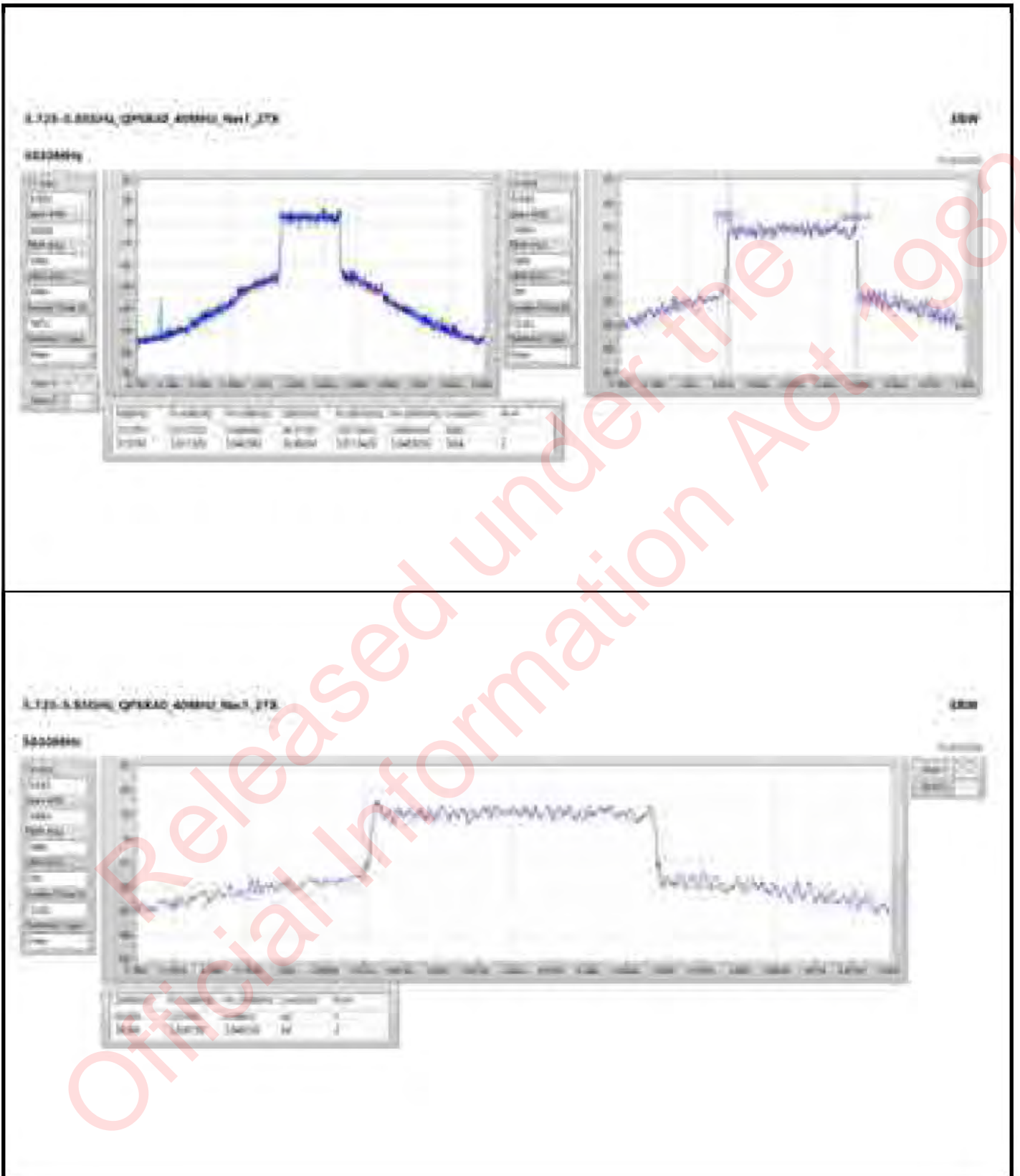














Summary

| Mode                     | Max-N dB (Hz) | Max-OBW (Hz) | ITU-Code | Min-N dB (Hz) | Min-OBW (Hz) |
|--------------------------|---------------|--------------|----------|---------------|--------------|
| 5.725-5.85GHz            | -             | -            | -        | -             | -            |
| QPSK40+40_40MHz_Nss1_2TX | 122.1M        | 36.939M      | 36M9G7D  | 121.88M       | 36.77M       |
| QPSK40+40_80MHz_Nss1_2TX | 77.22M        | 76.562M      | 76M6G7D  | 77M           | 76.562M      |

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Max-OBW = Maximum 99% occupied bandwidth;  
Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Min-OBW = Minimum 99% occupied bandwidth

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Result

| Mode                     | Result | Limit (Hz) | Port 1-N dB (Hz) | Port 1-OBW (Hz) | Port 2-N dB (Hz) | Port 2-OBW (Hz) |
|--------------------------|--------|------------|------------------|-----------------|------------------|-----------------|
| QPSK40+40_40MHz_Nss1_2TX | -      | -          | -                | -               | -                | -               |
| #5744.5MHz,5829.5MHz     | Pass   | 500k       | 121.99M          | 36.861M         | 122.1M           | 36.932M         |
| 5744.5MHz,#5829.5MHz     | Pass   | 500k       | 122.1M           | 36.77M          | 121.88M          | 36.939M         |
| QPSK40+40_80MHz_Nss1_2TX | -      | -          | -                | -               | -                | -               |
| #5755MHz,#5795MHz        | Pass   | 500k       | 77.22M           | 76.562M         | 77M              | 76.562M         |

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band  
Port X-OBW = Port X 99% occupied bandwidth

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Summary

| Mode                  | Total Power (dBm) | Total Power (W) |
|-----------------------|-------------------|-----------------|
| 5.725-5.85GHz         | -                 | -               |
| QPSK5_5MHz_Nss1_2TX   | 25.68             | 0.36983         |
| QPSK10_10MHz_Nss1_2TX | 25.51             | 0.35563         |
| QPSK15_15MHz_Nss1_2TX | 26.55             | 0.45186         |
| QPSK20_20MHz_Nss1_2TX | 26.27             | 0.42364         |
| QPSK30_30MHz_Nss1_2TX | 26.95             | 0.49545         |
| QPSK40_40MHz_Nss1_2TX | 26.58             | 0.45499         |

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Result

| Mode                  | Result | DG (dBi) | Port 1 (dBm) | Port 2 (dBm) | Total Power (dBm) | Power Limit (dBm) |
|-----------------------|--------|----------|--------------|--------------|-------------------|-------------------|
| QPSK5_5MHz_Nss1_2TX   | -      | -        | -            | -            | -                 | -                 |
| 5727.5MHz             | Pass   | 26.00    | 22.30        | 21.50        | 24.93             | 30.00             |
| 5787.5MHz             | Pass   | 26.00    | 22.94        | 22.39        | 25.68             | 30.00             |
| 5847.5MHz             | Pass   | 26.00    | 21.71        | 20.98        | 24.37             | 30.00             |
| QPSK10_10MHz_Nss1_2TX | -      | -        | -            | -            | -                 | -                 |
| 5730MHz               | Pass   | 26.00    | 22.93        | 22.03        | 25.51             | 30.00             |
| 5787MHz               | Pass   | 26.00    | 22.72        | 22.08        | 25.42             | 30.00             |
| 5845MHz               | Pass   | 26.00    | 22.31        | 21.67        | 25.01             | 30.00             |
| QPSK15_15MHz_Nss1_2TX | -      | -        | -            | -            | -                 | -                 |
| 5732.5MHz             | Pass   | 26.00    | 23.92        | 23.12        | 26.55             | 30.00             |
| 5787.5MHz             | Pass   | 26.00    | 22.99        | 22.31        | 25.67             | 30.00             |
| 5842.5MHz             | Pass   | 26.00    | 23.49        | 22.77        | 26.16             | 30.00             |
| QPSK20_20MHz_Nss1_2TX | -      | -        | -            | -            | -                 | -                 |
| 5735MHz               | Pass   | 26.00    | 23.65        | 22.84        | 26.27             | 30.00             |
| 5785MHz               | Pass   | 26.00    | 22.82        | 22.33        | 25.59             | 30.00             |
| 5840MHz               | Pass   | 26.00    | 23.19        | 22.44        | 25.84             | 30.00             |
| QPSK30_30MHz_Nss1_2TX | -      | -        | -            | -            | -                 | -                 |
| 5740MHz               | Pass   | 26.00    | 24.34        | 23.49        | 26.95             | 30.00             |
| 5787MHz               | Pass   | 26.00    | 23.00        | 22.68        | 25.85             | 30.00             |
| 5835MHz               | Pass   | 26.00    | 23.71        | 23.09        | 26.42             | 30.00             |
| QPSK40_40MHz_Nss1_2TX | -      | -        | -            | -            | -                 | -                 |
| 5745MHz               | Pass   | 26.00    | 23.95        | 23.15        | 26.58             | 30.00             |
| 5775MHz               | Pass   | 26.00    | 22.00        | 21.65        | 24.84             | 30.00             |
| 5830MHz               | Pass   | 26.00    | 23.43        | 22.82        | 26.15             | 30.00             |

DG = Directional Gain; Port X = Port X output power  
Inf = There's no restriction for the limit.



Summary

| Mode                     | Total Power (dBm) | Total Power (W) |
|--------------------------|-------------------|-----------------|
| 5.725-5.85GHz            | -                 | -               |
| QPSK40+40_80MHz_Nss1_2TX | 20.27             | 0.10641         |

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Result

| Mode                     | Result | DG (dBi) | Port 1 (dBm) | Port 2 (dBm) | Total Power (dBm) | Power Limit (dBm) |
|--------------------------|--------|----------|--------------|--------------|-------------------|-------------------|
| QPSK40+40_80MHz_Nss1_2TX | -      | -        | -            | -            | -                 | -                 |
| #5755MHz,#5795MHz        | Pass   | 26.00    | 17.67        | 16.80        | 20.27             | 30.00             |
| #5744.5MHz,#5829.5MHz    | Pass   | 26.00    | 11.81        | 11.52        | 14.68             | 30.00             |

DG = Directional Gain; Port X = Port X output power  
Inf = There's no restriction for the limit.

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Summary

| Mode                  | PD<br>(dBm/RBW) |
|-----------------------|-----------------|
| 5.725-5.85GHz         | -               |
| QPSK5_5MHz_Nss1_2TX   | 16.39           |
| QPSK10_10MHz_Nss1_2TX | 13.33           |
| QPSK15_15MHz_Nss1_2TX | 12.91           |
| QPSK20_20MHz_Nss1_2TX | 11.36           |
| QPSK30_30MHz_Nss1_2TX | 11.02           |
| QPSK40_40MHz_Nss1_2TX | 9.75            |

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

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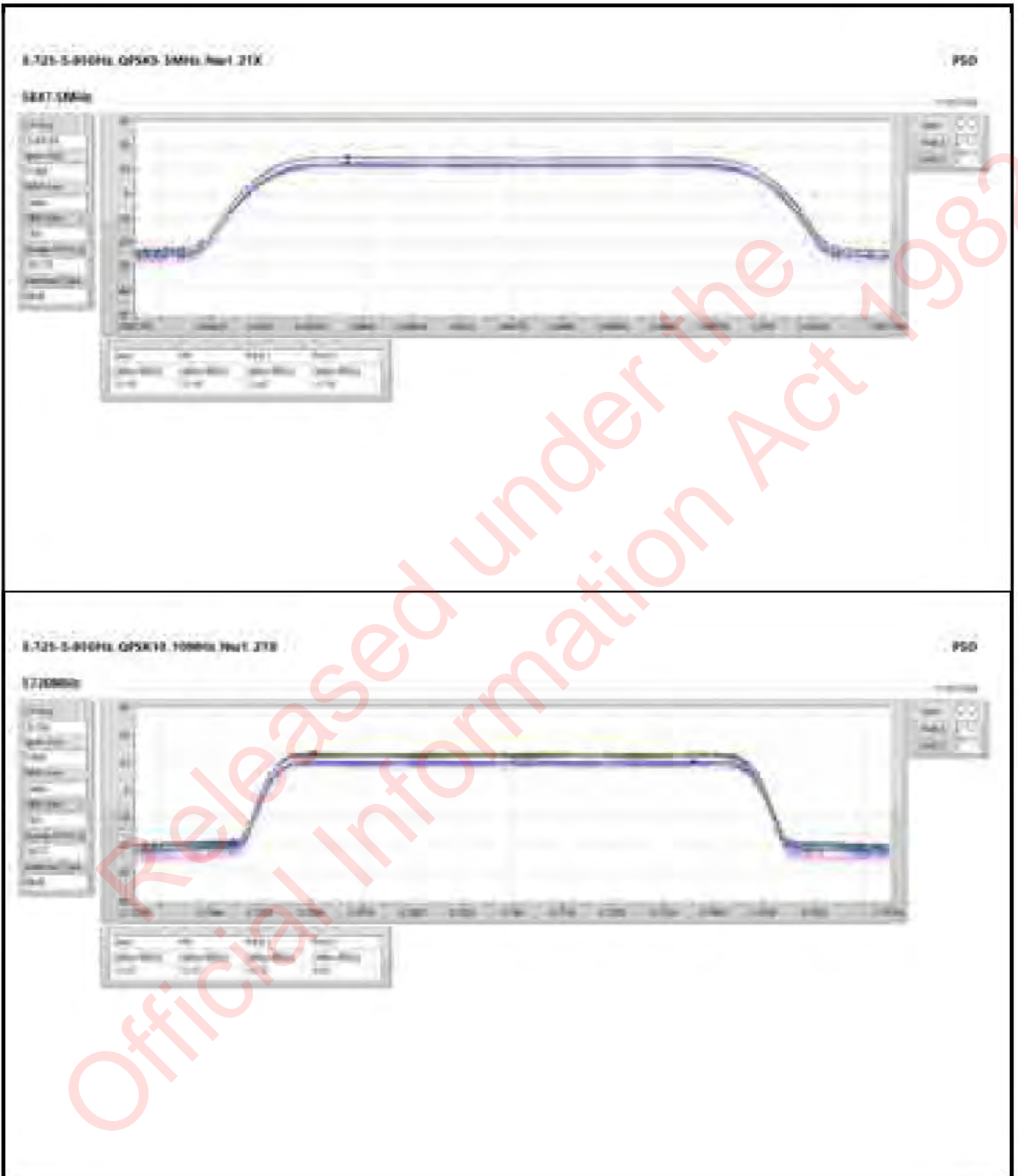


Result

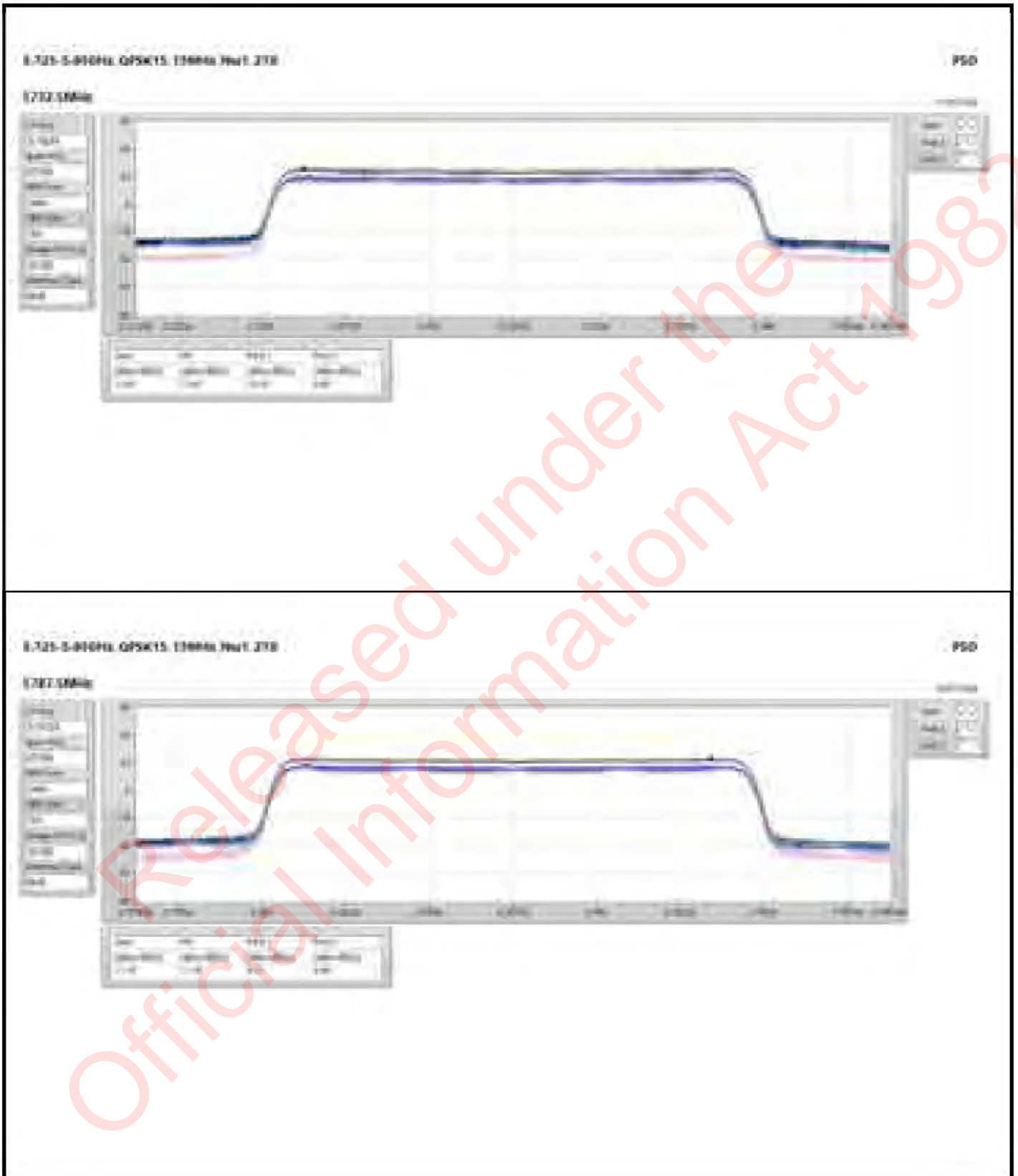
| Mode                  | Result | DG (dBi) | Port 1 (dBm/RBW) | Port 2 (dBm/RBW) | PD (dBm/RBW) | PD Limit (dBm/RBW) |
|-----------------------|--------|----------|------------------|------------------|--------------|--------------------|
| QPSK5_5MHz_Nss1_2TX   | -      | -        | -                | -                | -            | -                  |
| 5727.5MHz             | Pass   | 26.00    | 13.18            | 12.41            | 15.78        | 30.00              |
| 5787.5MHz             | Pass   | 26.00    | 13.59            | 13.15            | 16.39        | 30.00              |
| 5847.5MHz             | Pass   | 26.00    | 12.62            | 11.74            | 15.18        | 30.00              |
| QPSK10_10MHz_Nss1_2TX | -      | -        | -                | -                | -            | -                  |
| 5730MHz               | Pass   | 26.00    | 10.73            | 9.93             | 13.33        | 30.00              |
| 5787MHz               | Pass   | 26.00    | 10.41            | 9.70             | 13.02        | 30.00              |
| 5845MHz               | Pass   | 26.00    | 10.13            | 9.59             | 12.78        | 30.00              |
| QPSK15_15MHz_Nss1_2TX | -      | -        | -                | -                | -            | -                  |
| 5732.5MHz             | Pass   | 26.00    | 10.16            | 9.68             | 12.91        | 30.00              |
| 5787.5MHz             | Pass   | 26.00    | 9.75             | 8.64             | 11.78        | 30.00              |
| 5842.5MHz             | Pass   | 26.00    | 9.93             | 9.37             | 12.64        | 30.00              |
| QPSK20_20MHz_Nss1_2TX | -      | -        | -                | -                | -            | -                  |
| 5735MHz               | Pass   | 26.00    | 8.65             | 8.13             | 11.36        | 30.00              |
| 5785MHz               | Pass   | 26.00    | 7.67             | 7.40             | 10.48        | 30.00              |
| 5840MHz               | Pass   | 26.00    | 8.32             | 7.78             | 11.07        | 30.00              |
| QPSK30_30MHz_Nss1_2TX | -      | -        | -                | -                | -            | -                  |
| 5740MHz               | Pass   | 26.00    | 8.32             | 7.87             | 11.02        | 30.00              |
| 5787MHz               | Pass   | 26.00    | 7.10             | 6.74             | 9.73         | 30.00              |
| 5835MHz               | Pass   | 26.00    | 7.64             | 7.32             | 10.49        | 30.00              |
| QPSK40_40MHz_Nss1_2TX | -      | -        | -                | -                | -            | -                  |
| 5745MHz               | Pass   | 26.00    | 6.95             | 6.57             | 9.75         | 30.00              |
| 5775MHz               | Pass   | 26.00    | 5.15             | 4.73             | 7.94         | 30.00              |
| 5830MHz               | Pass   | 26.00    | 6.36             | 5.95             | 9.17         | 30.00              |

DG = Directional Gain; RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;  
 PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;  
 Inf = There's no restriction for the limit.

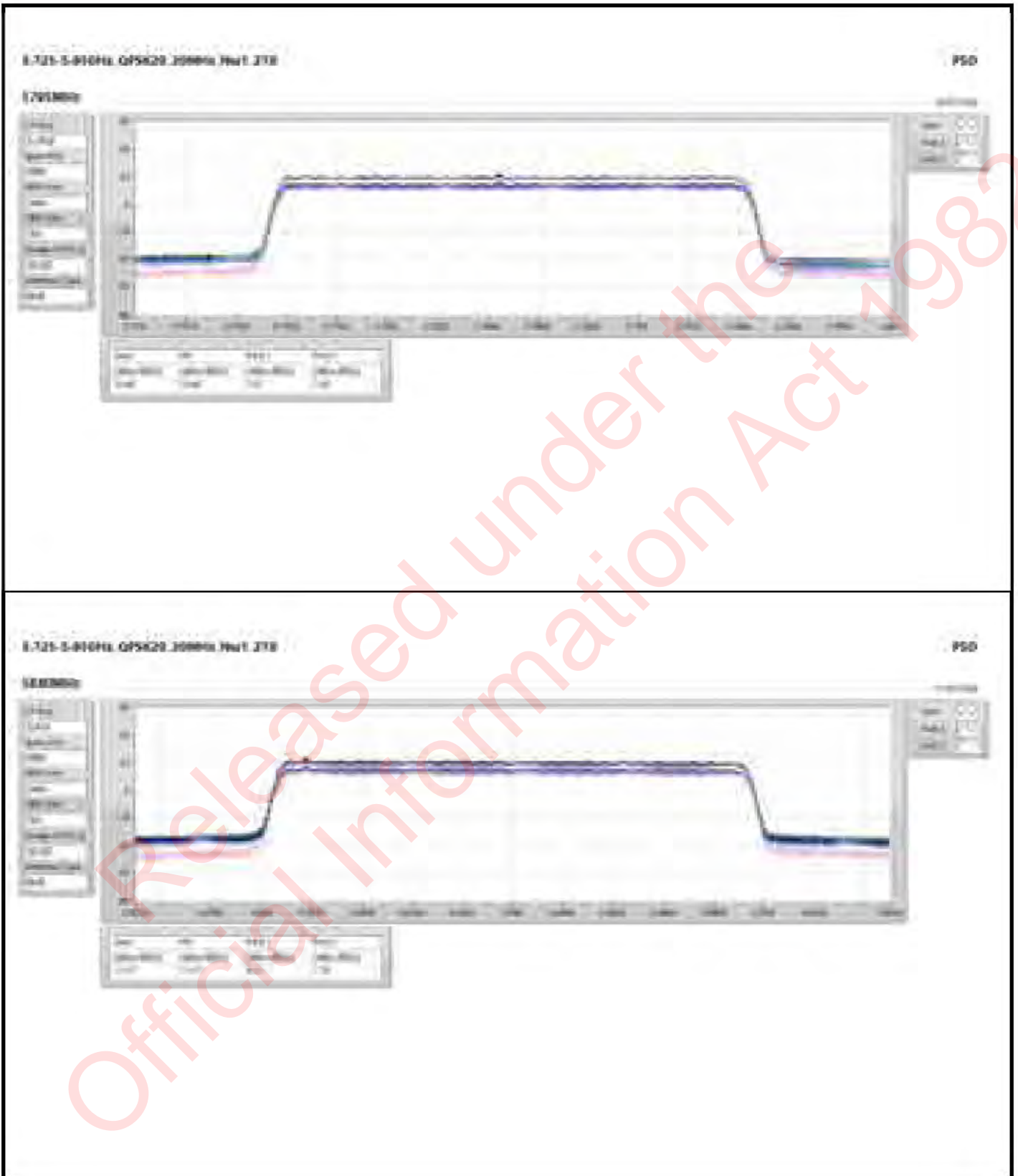




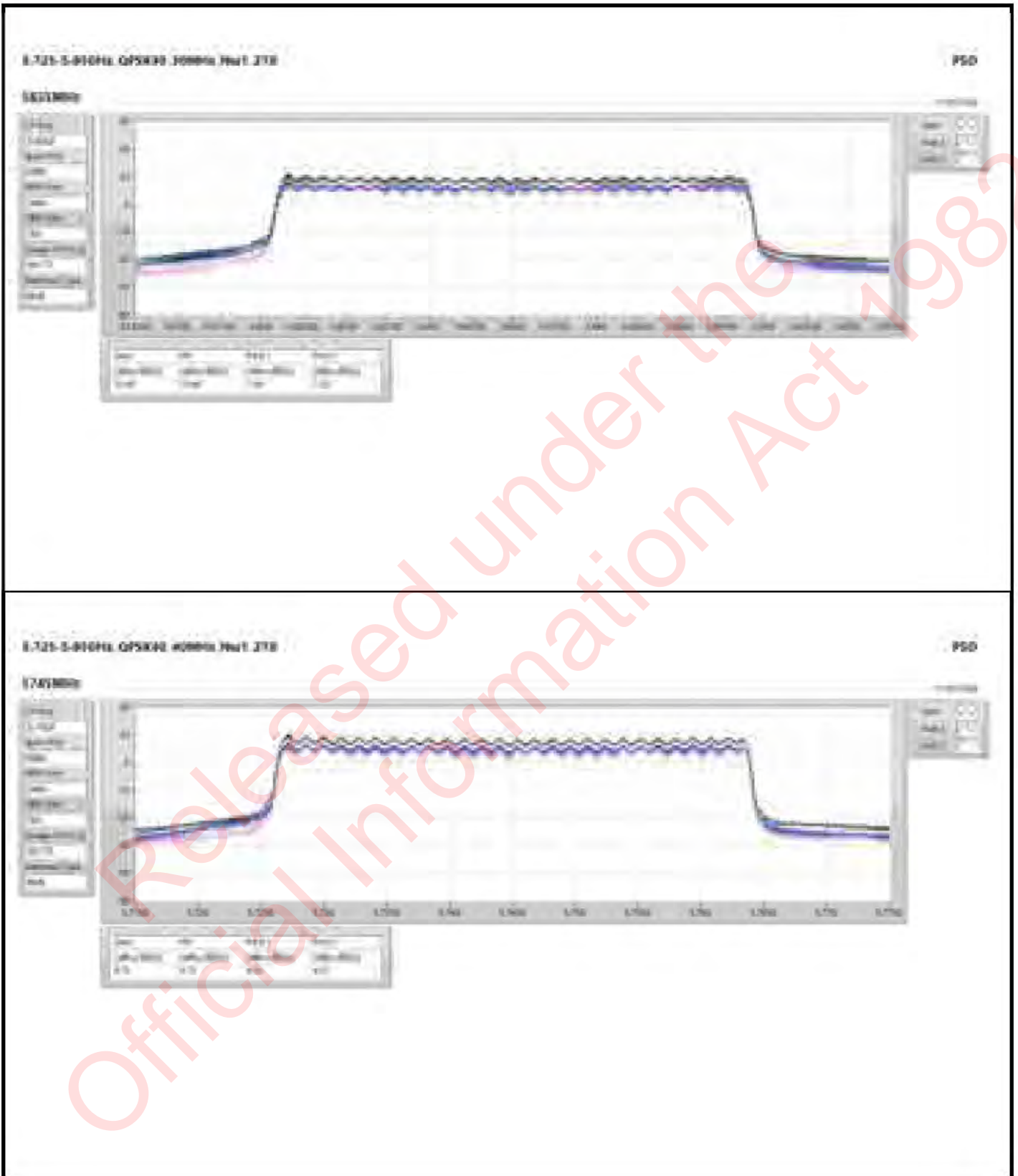


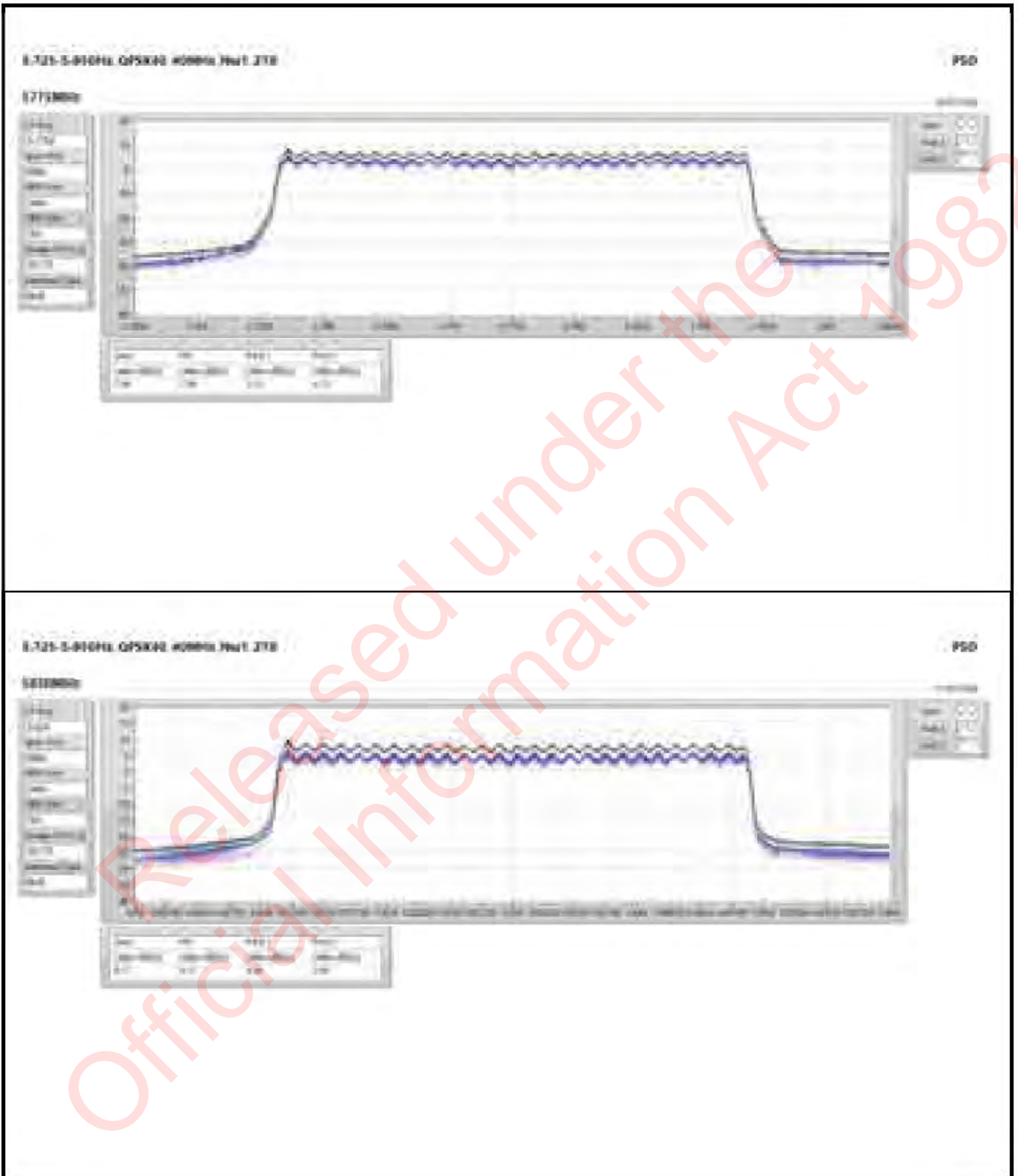














Summary

| Mode                     | PD<br>(dBm/RBW) |
|--------------------------|-----------------|
| 5.725-5.85GHz            | -               |
| QPSK40+40_80MHz_Nss1_2TX | -0.60           |

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

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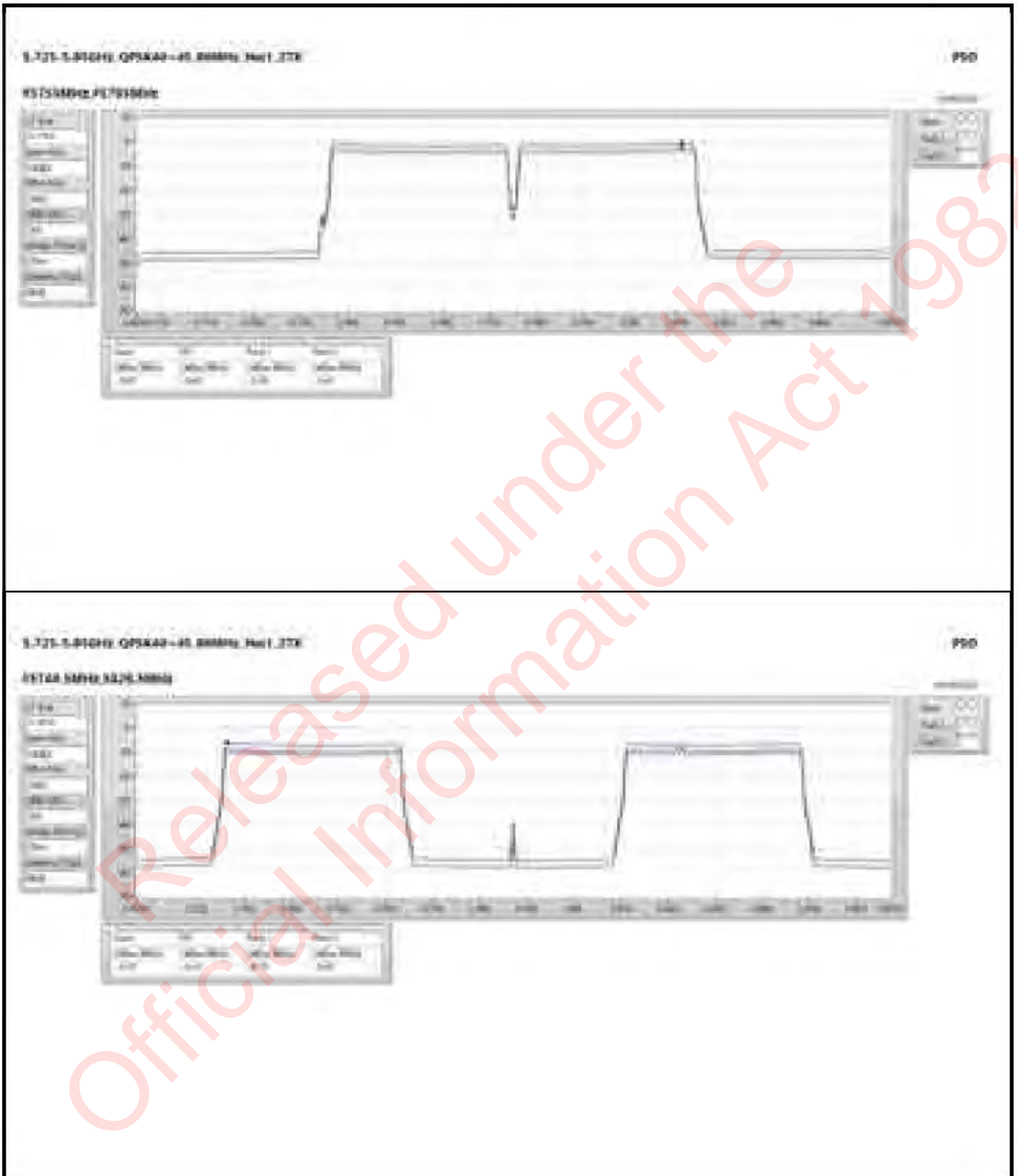


Result

| Mode                     | Result | DG (dBi) | Port 1 (dBm/RBW) | Port 2 (dBm/RBW) | PD (dBm/RBW) | PD Limit (dBm/RBW) |
|--------------------------|--------|----------|------------------|------------------|--------------|--------------------|
| QPSK40+40_80MHz_Nss1_2TX | -      | -        | -                | -                | -            | -                  |
| #5755MHz,#5795MHz        | Pass   | 26.00    | -2.39            | -3.41            | -0.60        | 30.00              |
| #5744.5MHz,#5829.5MHz    | Pass   | 26.00    | -8.75            | -8.45            | -6.33        | 30.00              |

DG = Directional Gain; RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;  
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;  
Inf = There's no restriction for the limit.

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**Summary**

| Mode   | Result | Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Condition  |
|--------|--------|------|-----------|----------------|----------------|-------------|------------|
| Mode 1 | Pass   | PK   | 634.31M   | 42.56          | 46.00          | -3.44       | Horizontal |

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Summary

| Mode                  | Result | Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Dist (m) | Condition  | Azimuth (°) | Height (m) | Comments |
|-----------------------|--------|------|-----------|----------------|----------------|-------------|----------|------------|-------------|------------|----------|
| 5.725-5.85GHz         | -      | -    | -         | -              | -              | -           | -        | -          | -           | -          | -        |
| QPSK40_40MHz_Nss1_2TX | Pass   | PK   | 5.929G    | 68.15          | 68.20          | -0.05       | 3        | Horizontal | 357.2       | 1.81       | -        |

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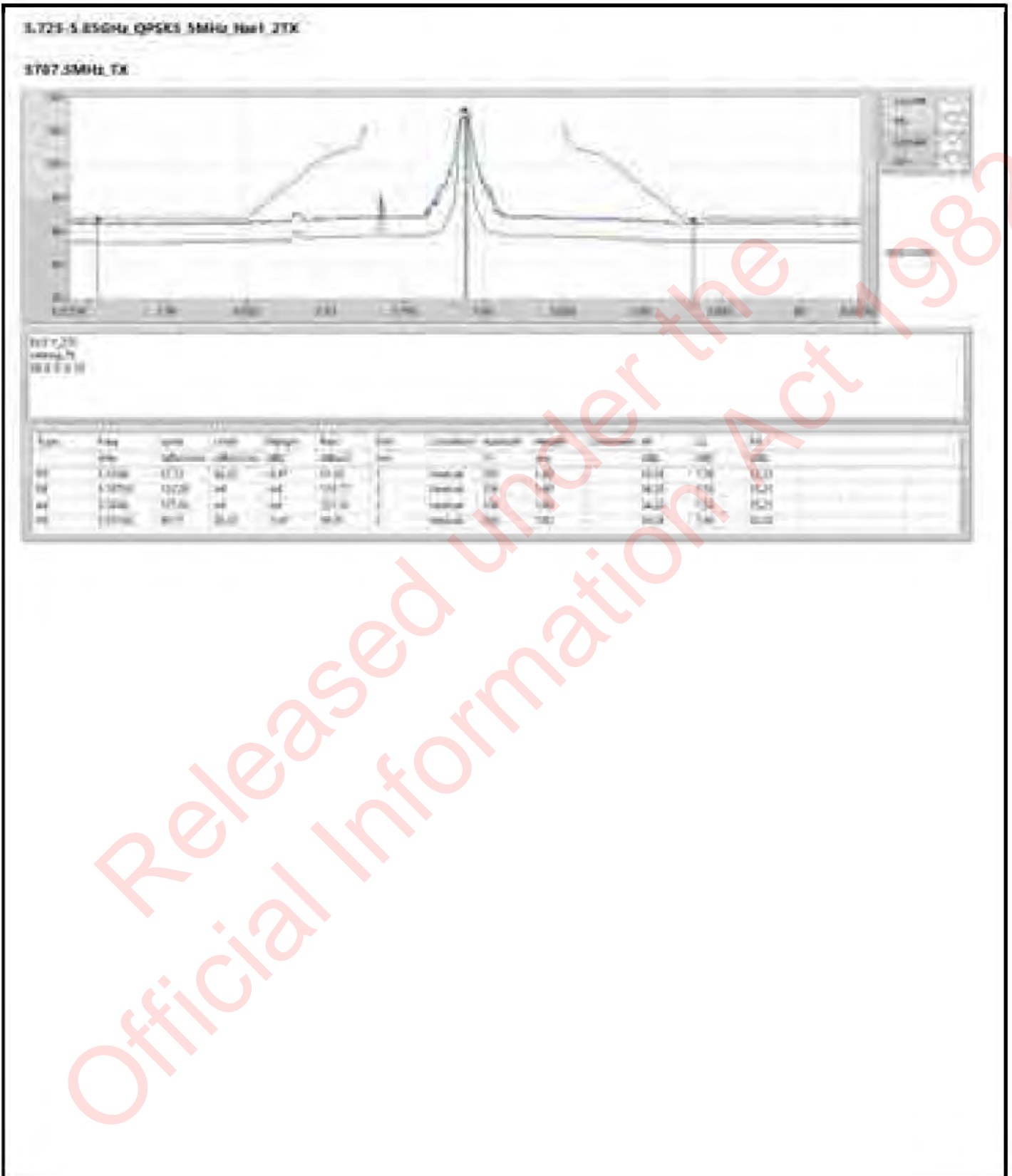


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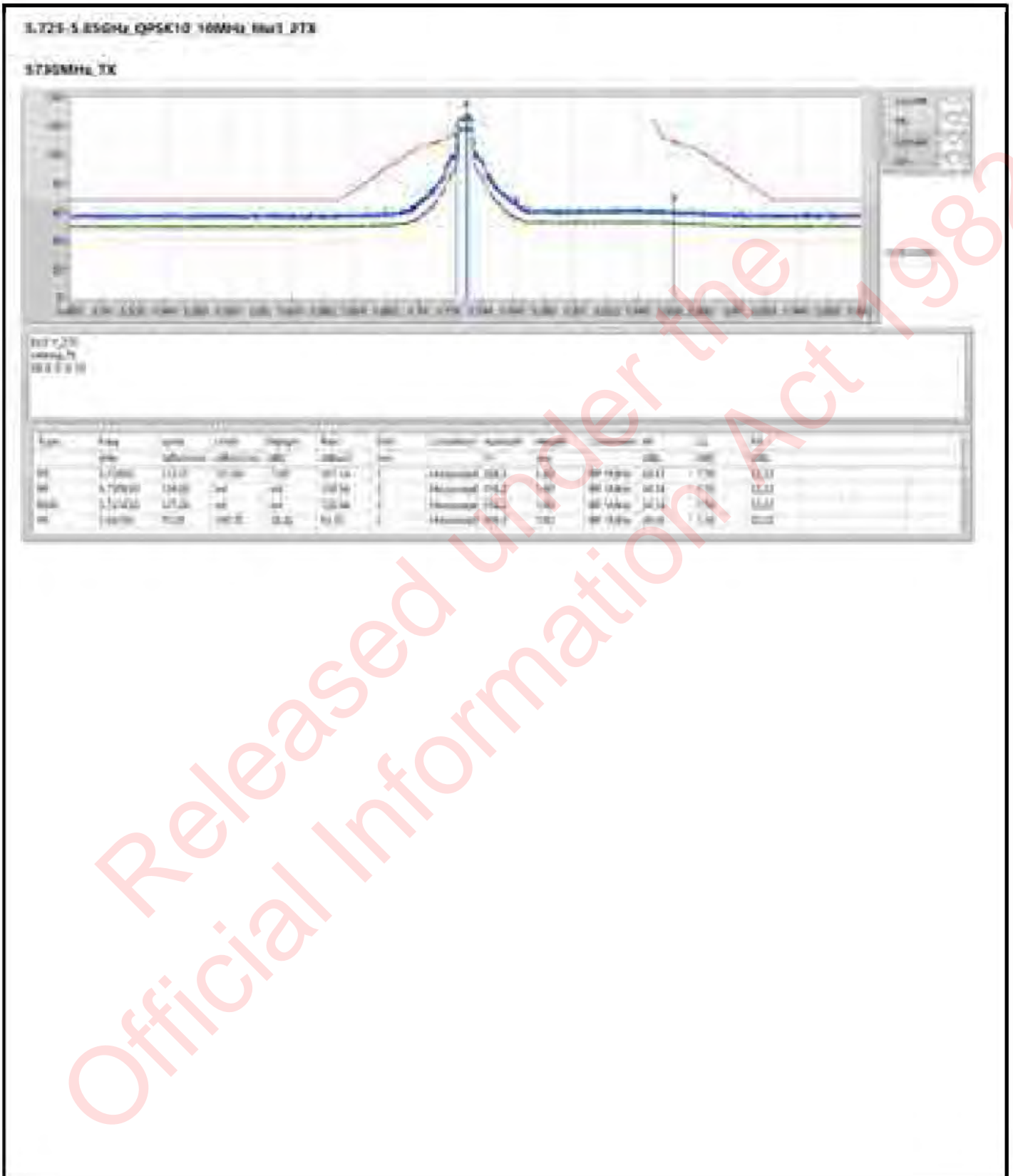


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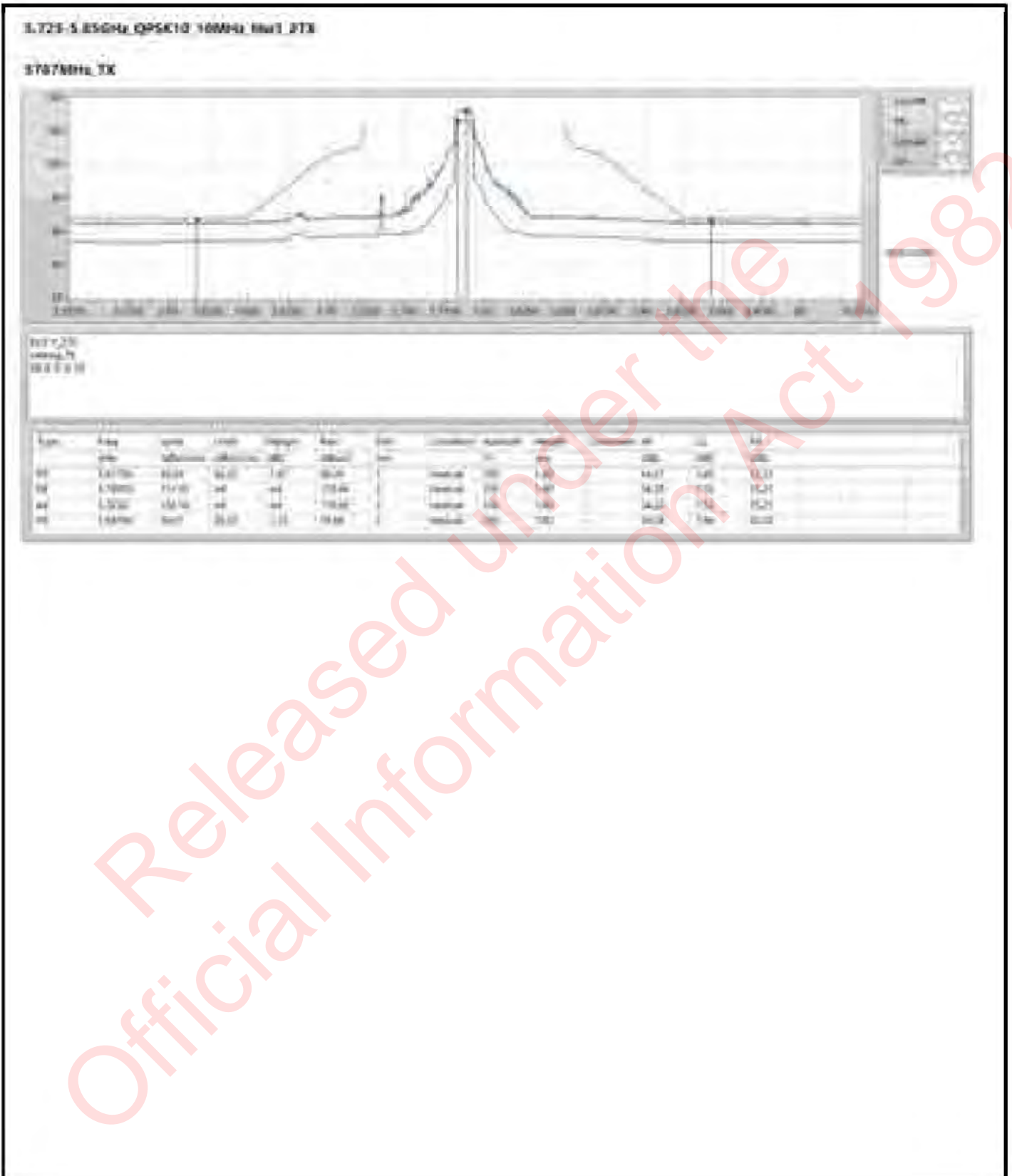


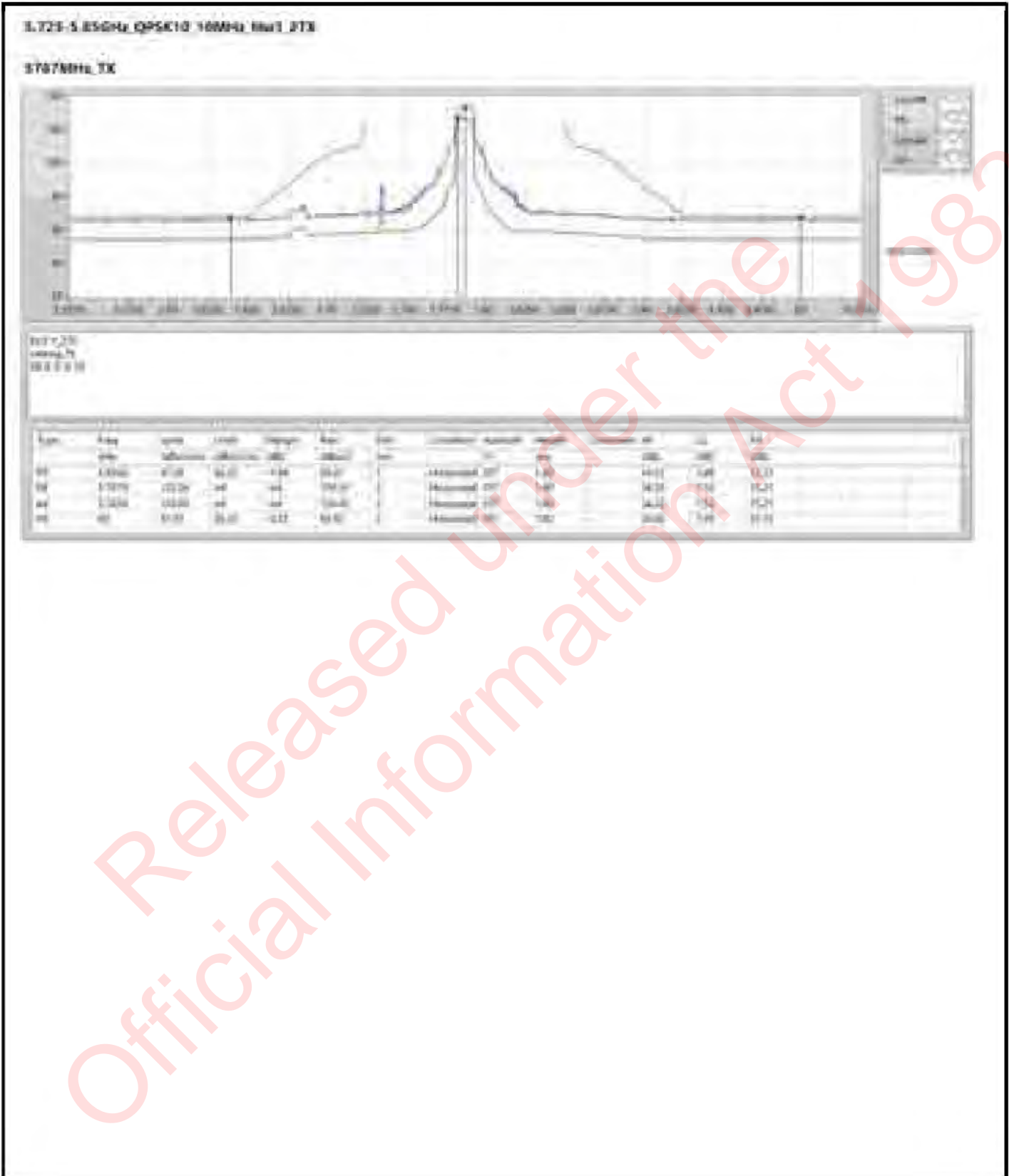




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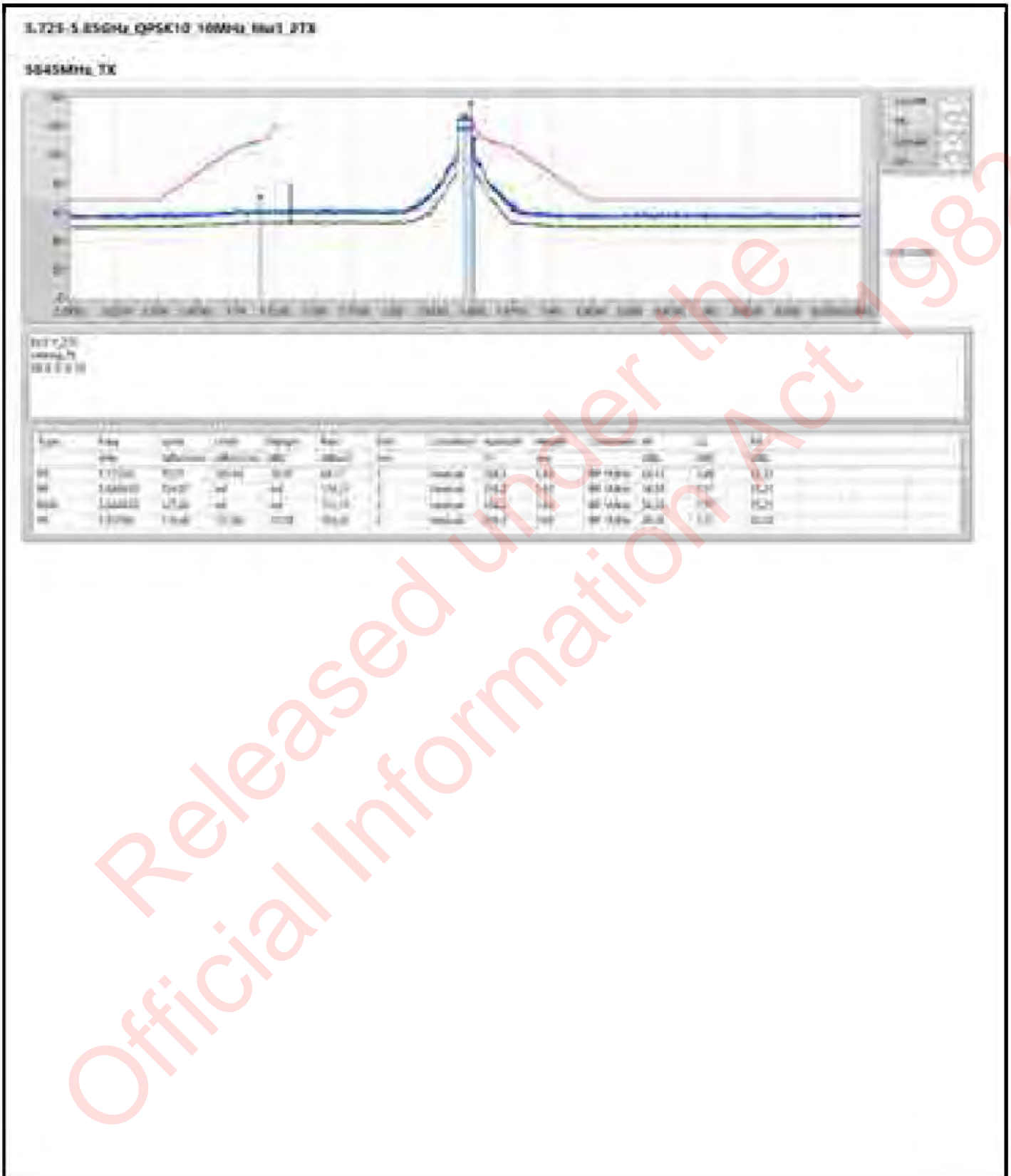








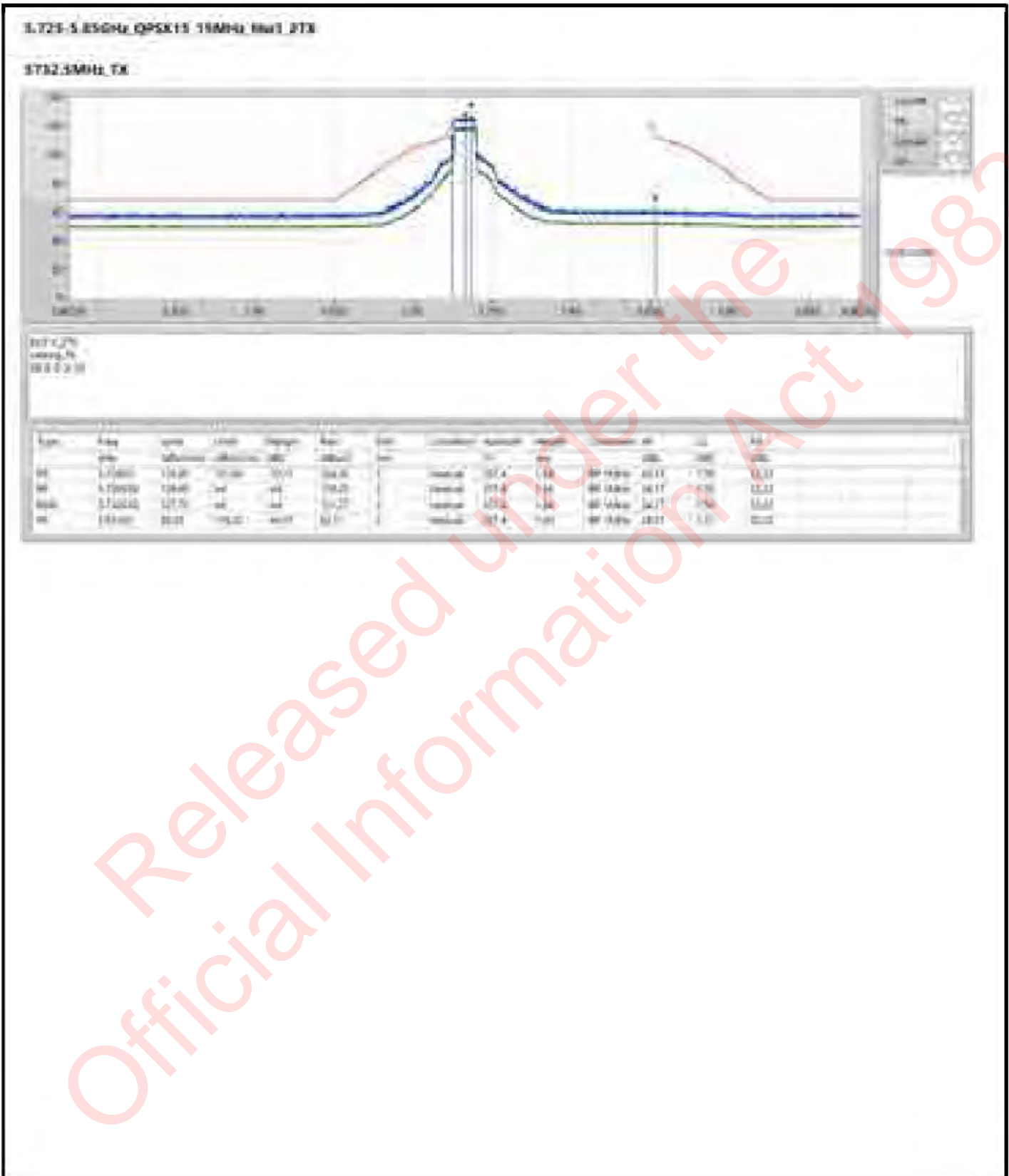
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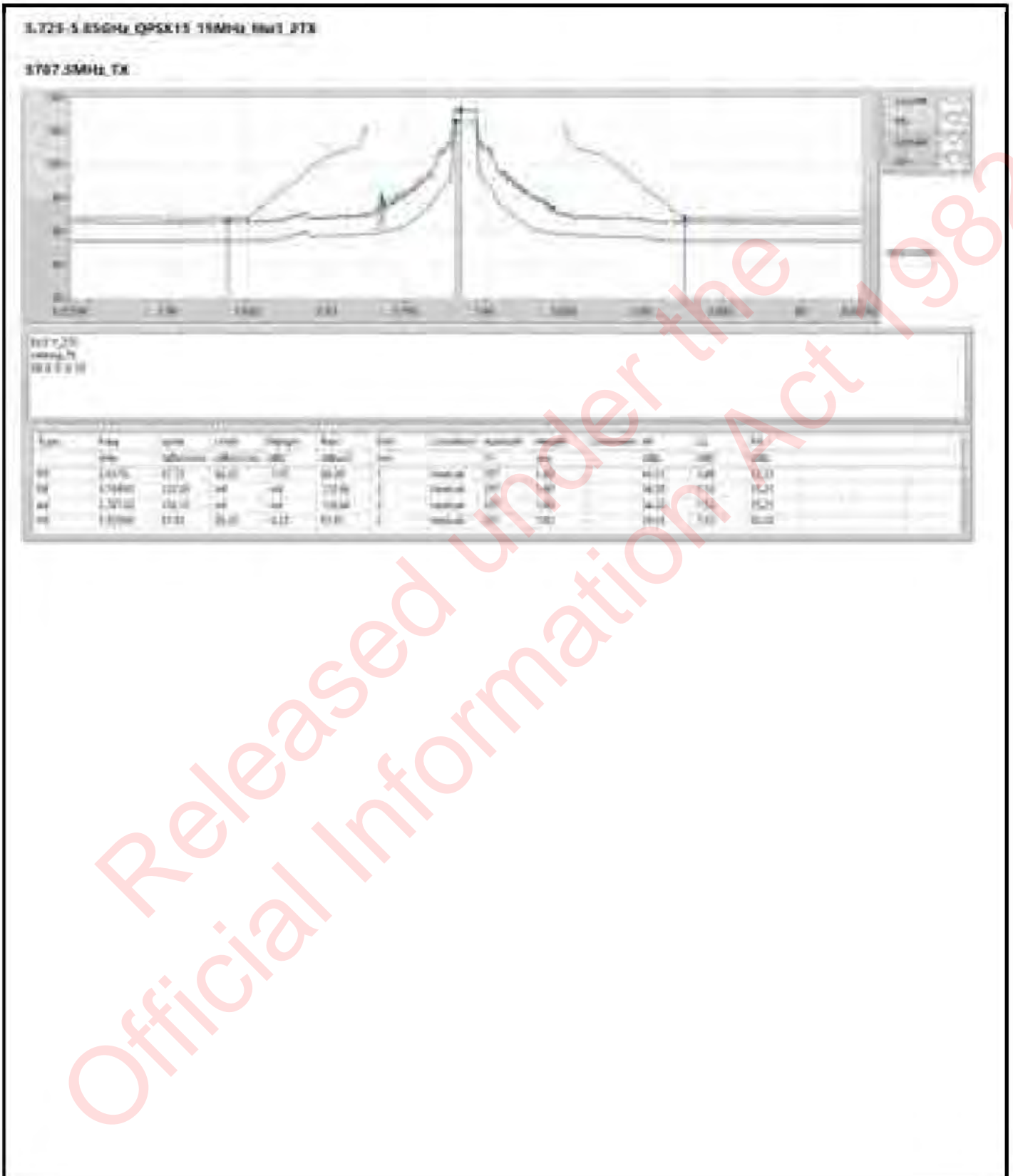
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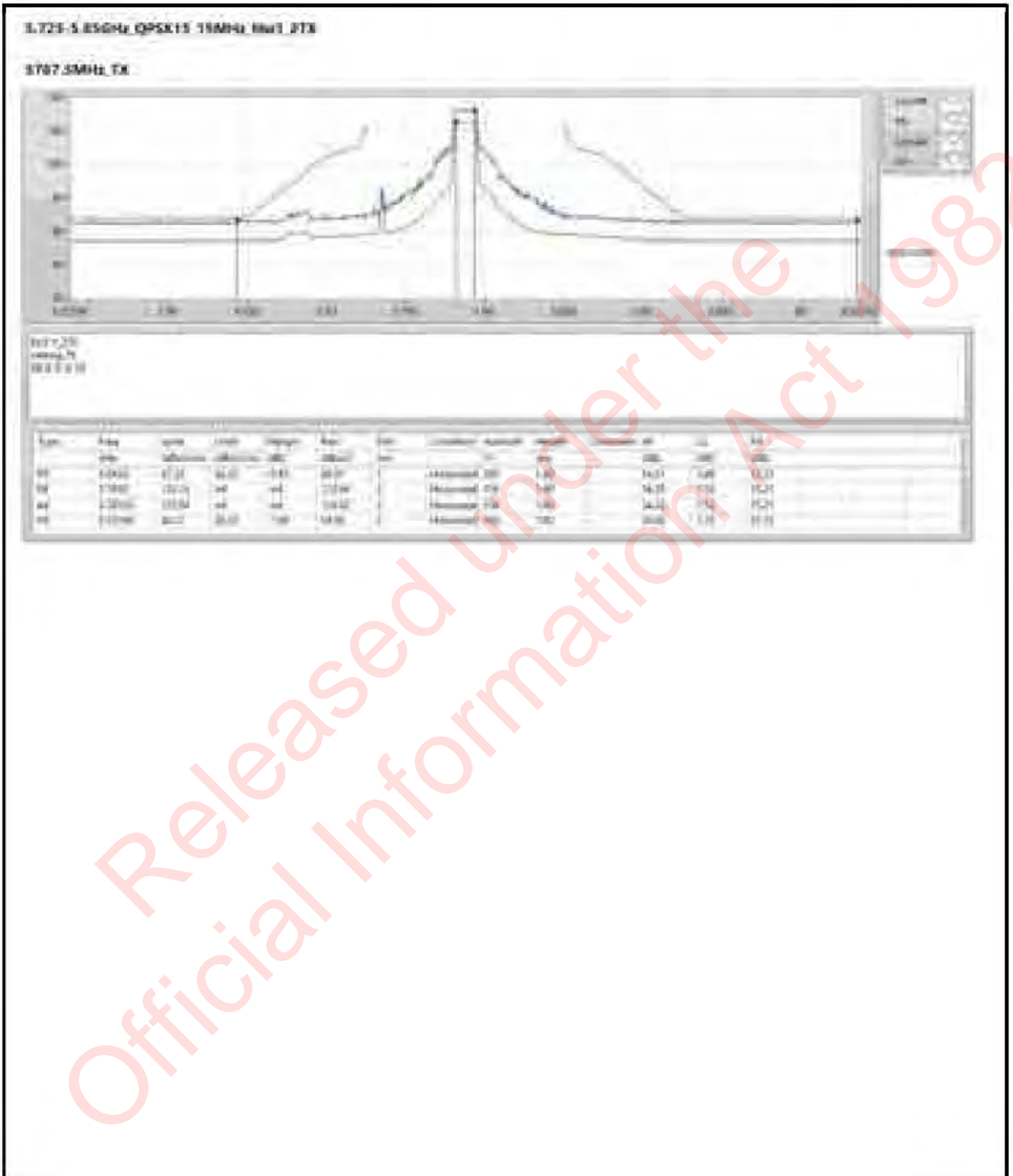


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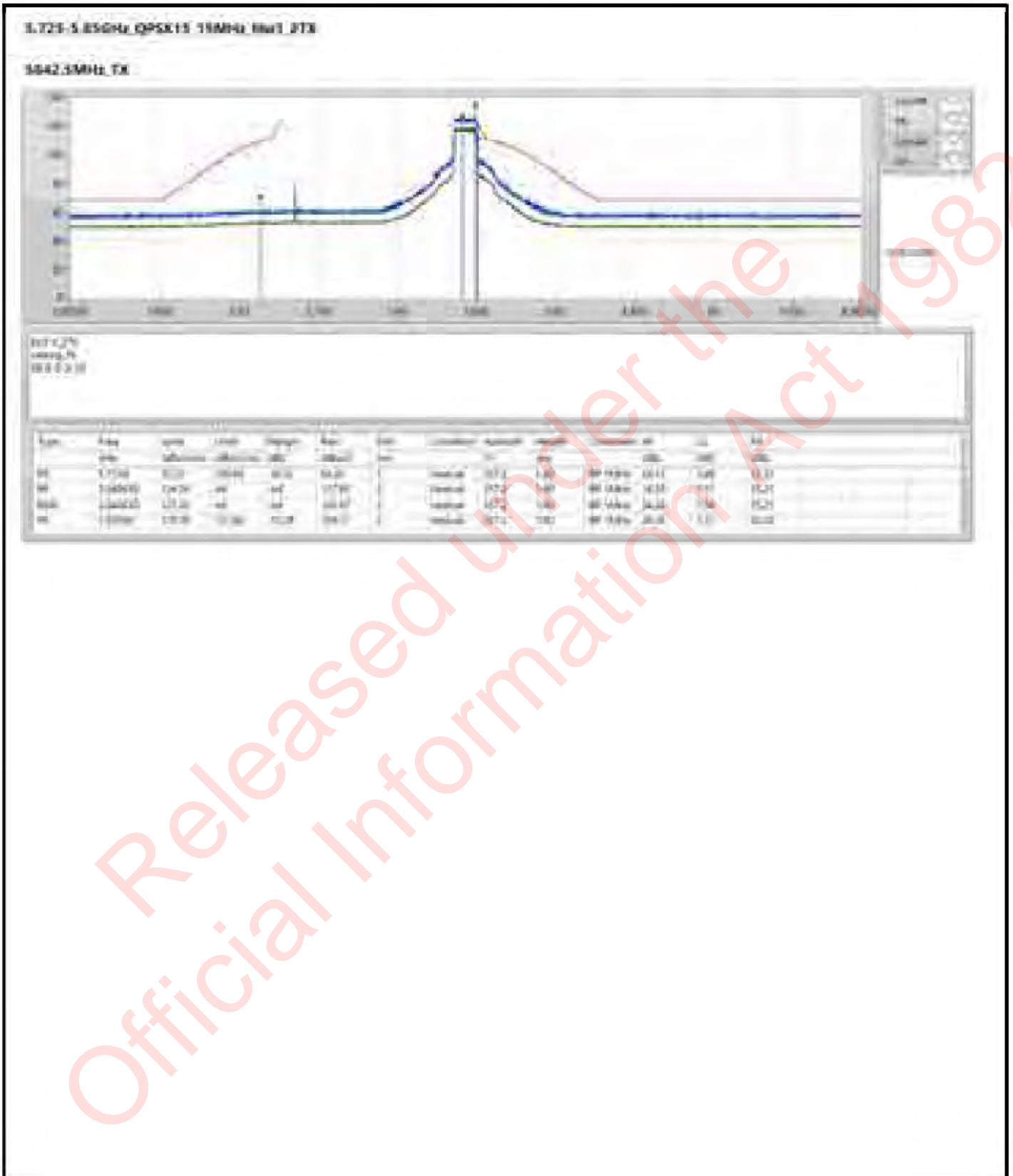


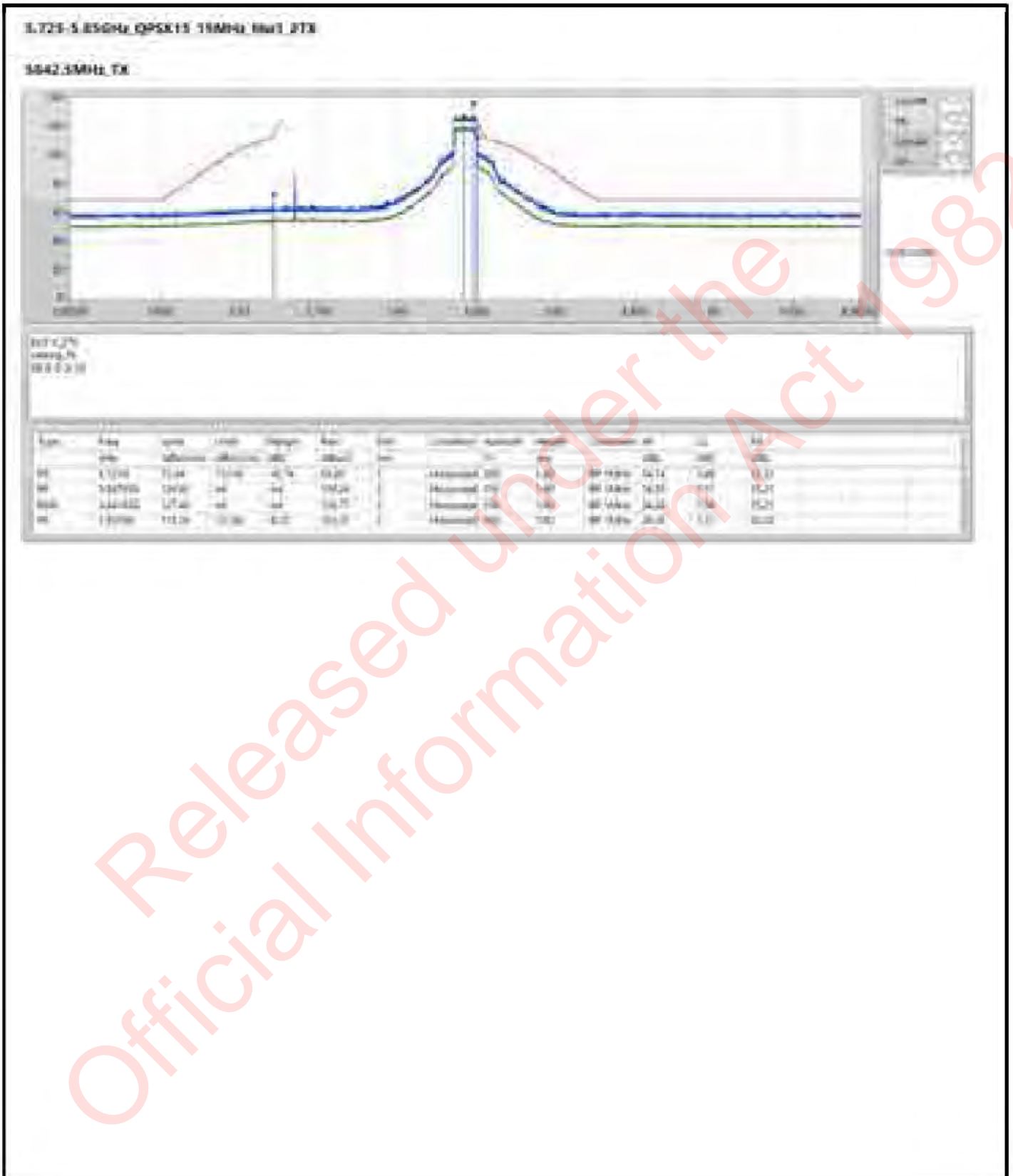


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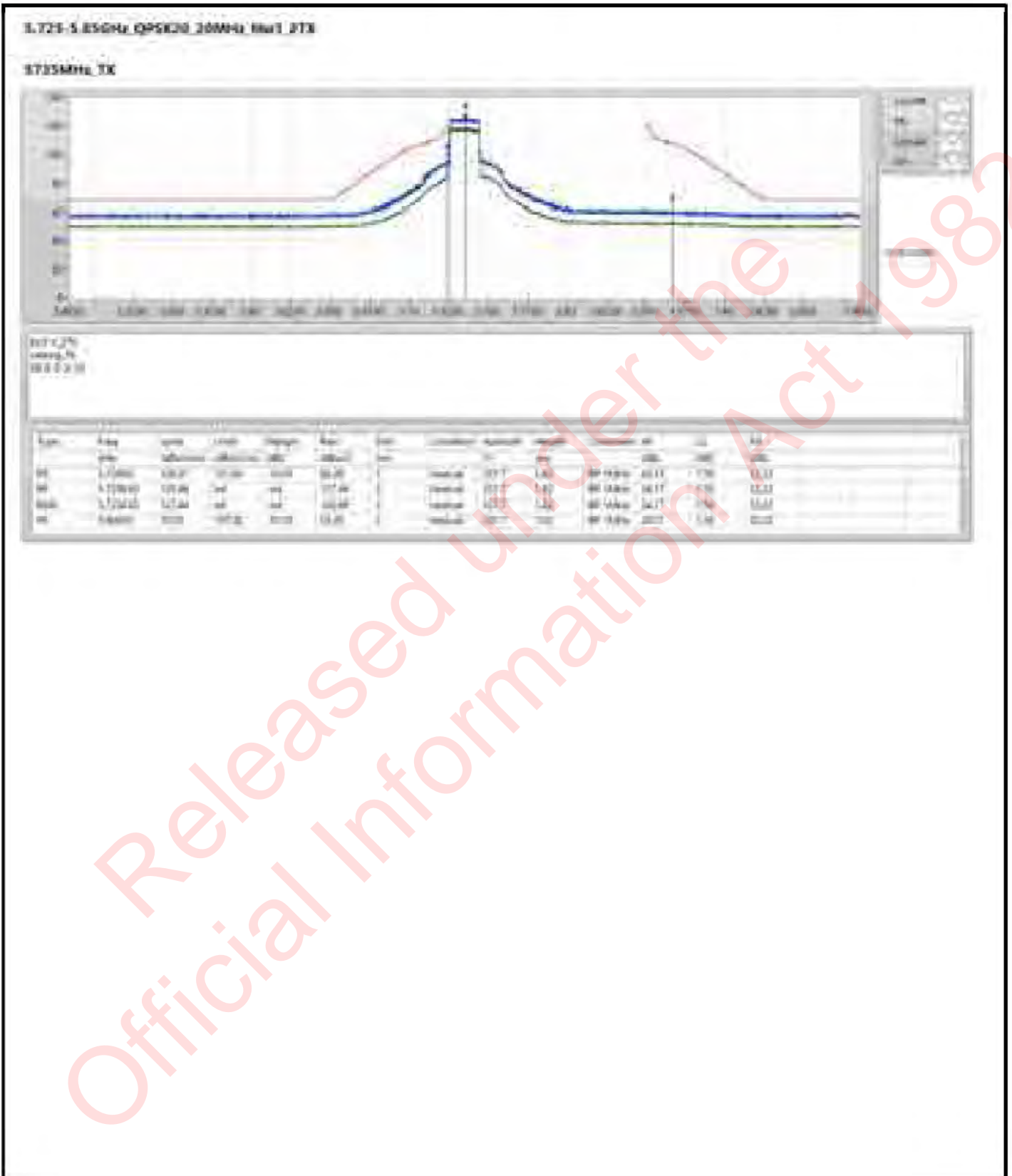


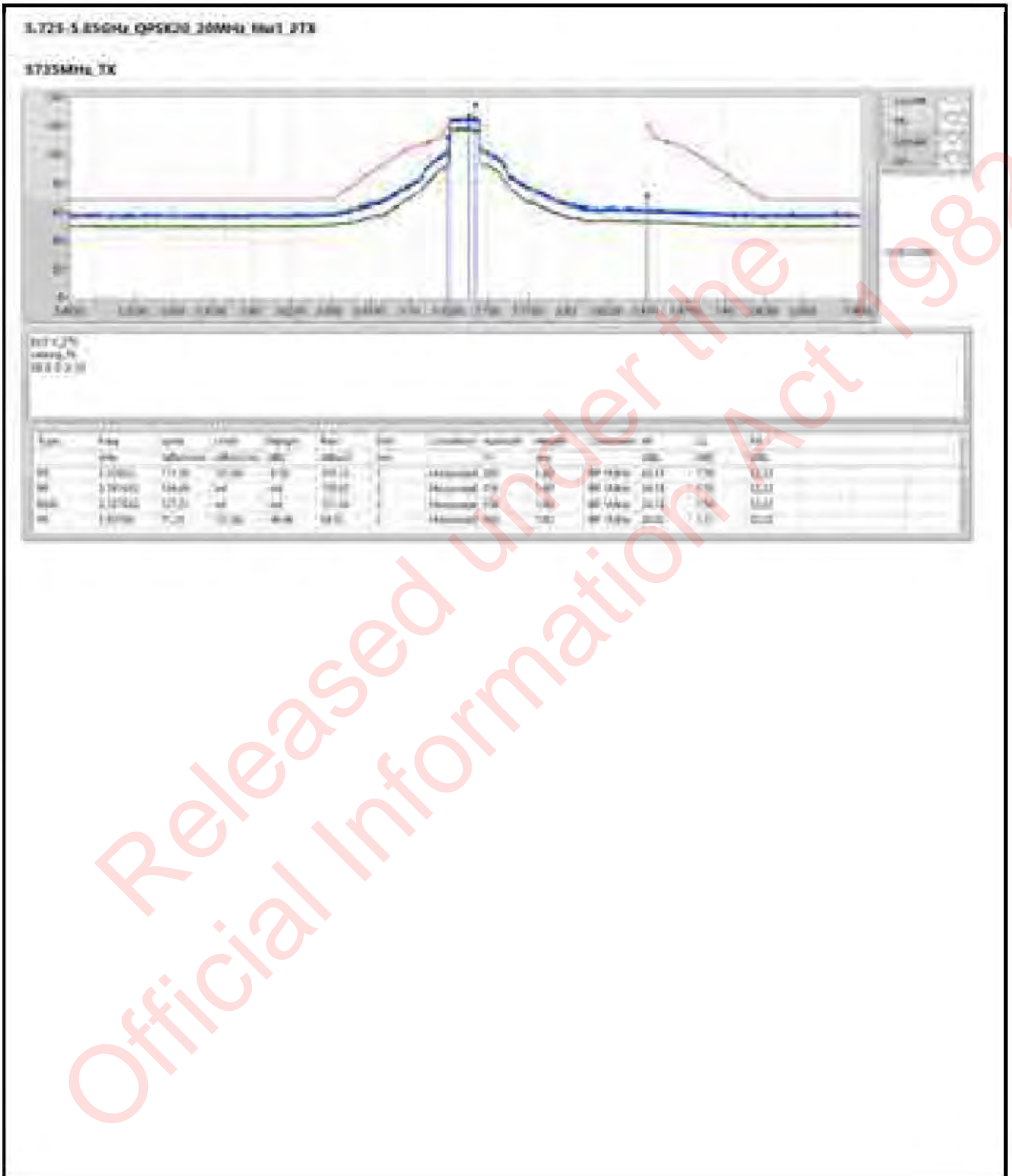


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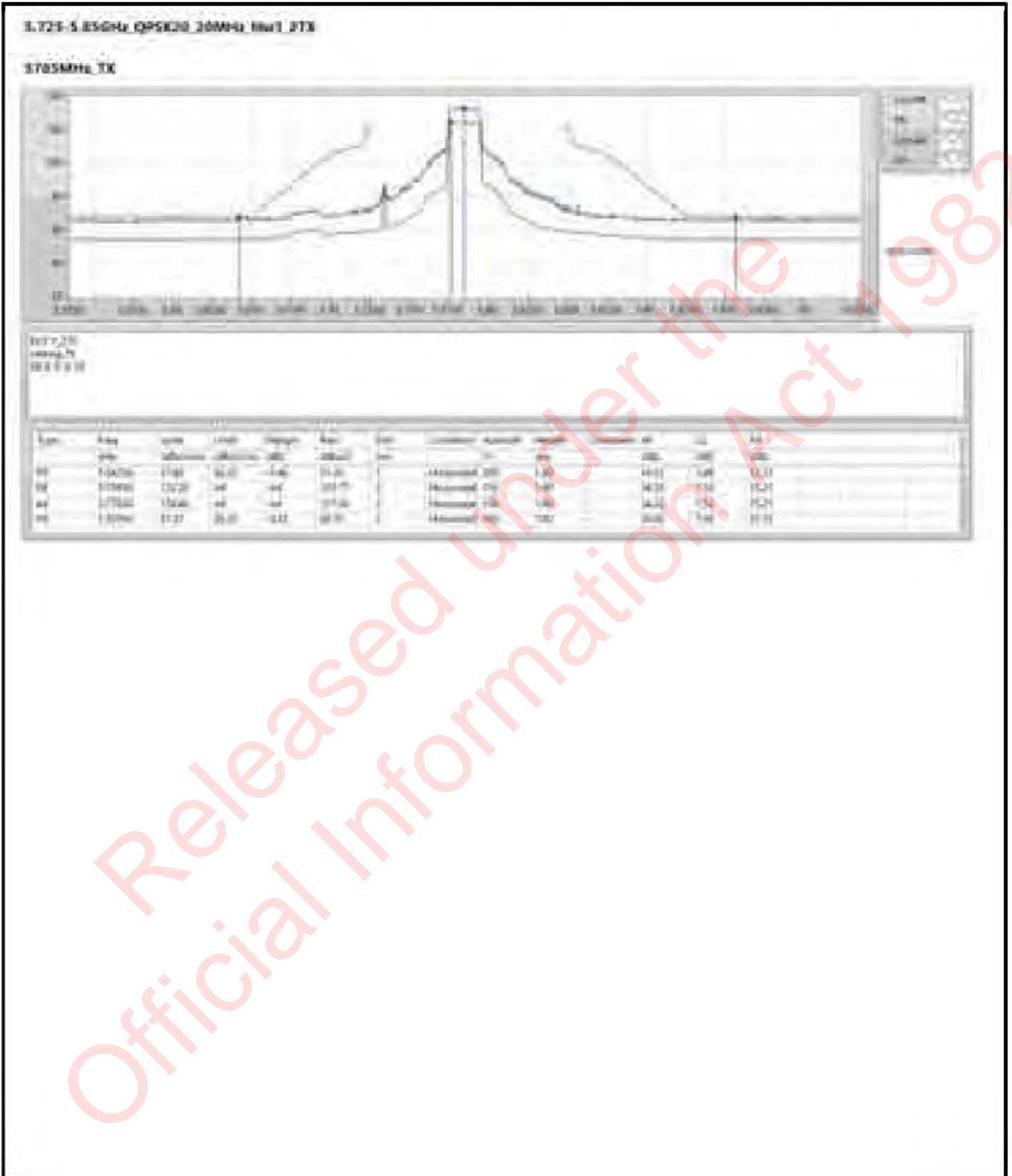
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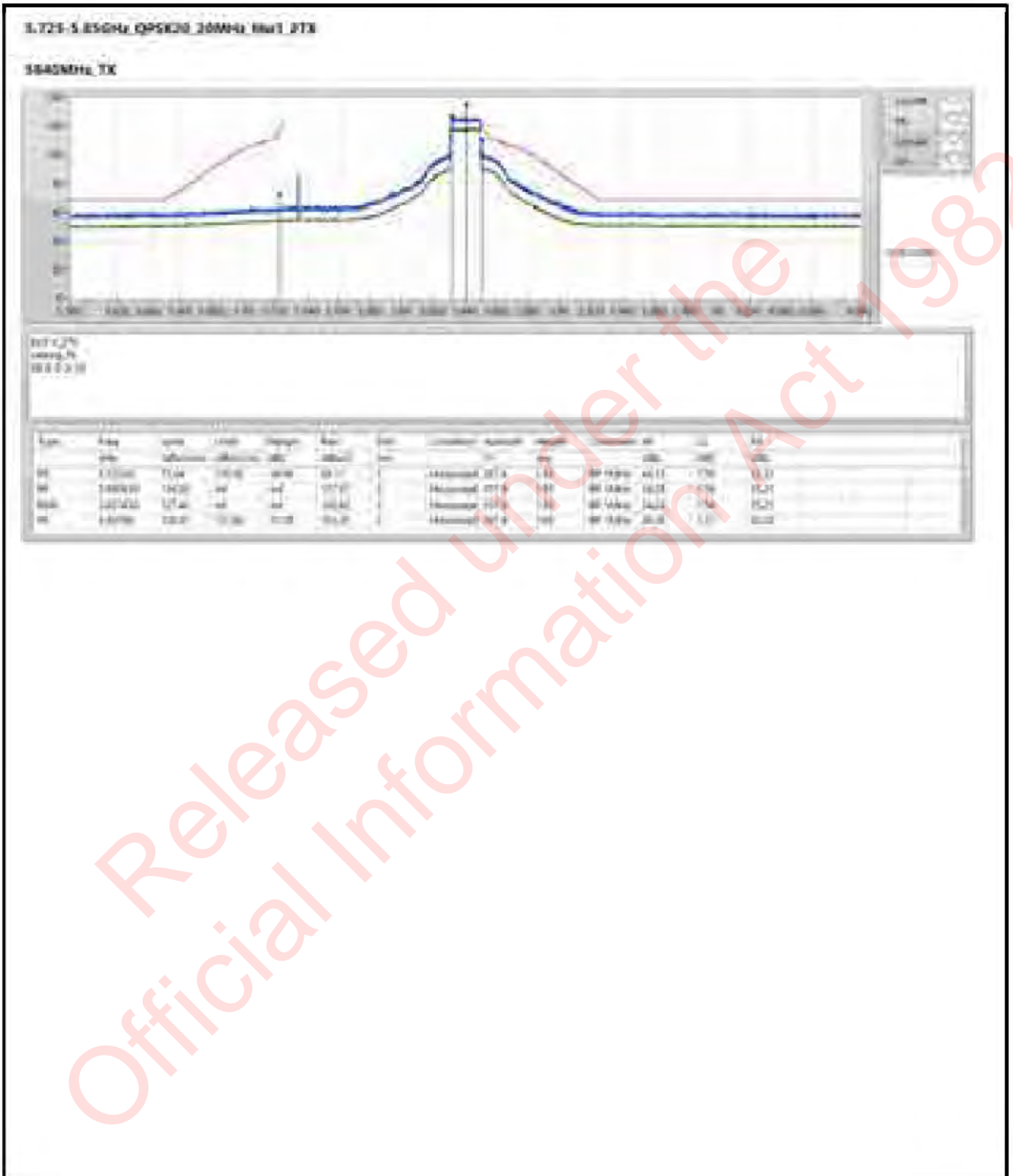


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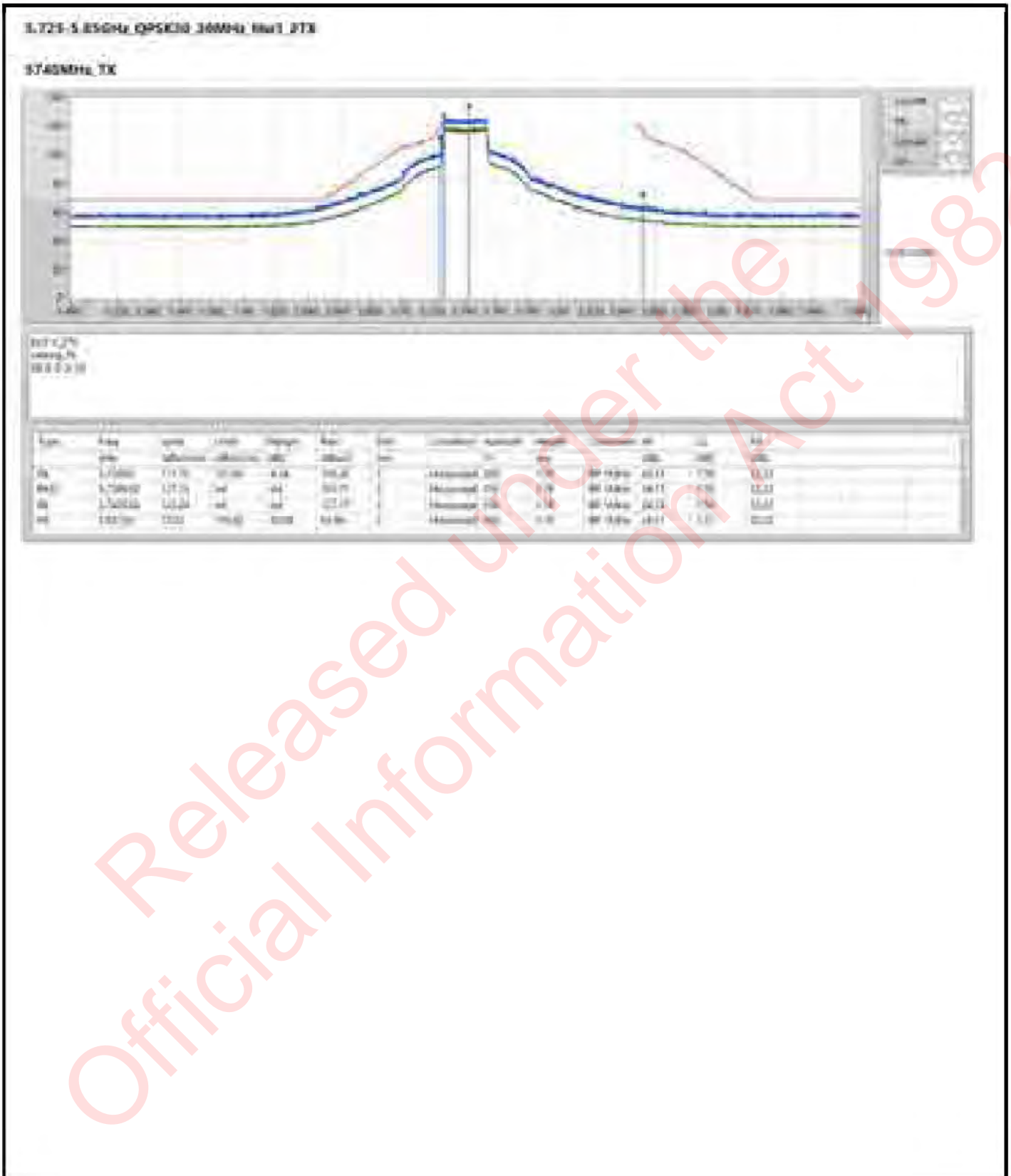




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Summary

| Mode                     | Result | Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Dist (m) | Condition | Azimuth (°) | Height (m) | Comments |
|--------------------------|--------|------|-----------|----------------|----------------|-------------|----------|-----------|-------------|------------|----------|
| 5.725-5.85GHz            | -      | -    | -         | -              | -              | -           | -        | -         | -           | -          | -        |
| QPSK40+40_80MHz_Nss1_2TX | Pass   | PK   | 5.643G    | 68.18          | 68.20          | -0.02       | 3        | Vertical  | 358         | 1.87       | -        |

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# RADIO TEST REPORT

**FCC ID** : Z8H89FT0083  
**Equipment** : 6092HH  
**Brand Name** : Cambium Networks  
**Model Name** : 6092HH  
**Applicant** : Cambium Networks Inc.  
3800 Golf Road, Suite 360 Rolling Meadows, IL  
60008, USA  
**Manufacturer** : Cambium Networks, Ltd.  
Ashburton, TQ13 7UP, UK  
**Standard** : 47 CFR FCC Part 15.407

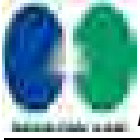
The product was received on Jul. 29, 2024, and testing was started from Jul. 29, 2024 and completed on Oct. 09, 2024. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C83.10-2013 and shown compliance with the applicable technical standards.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

**Sporton International Inc. Hsinchu Laboratory**

No. 8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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## Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items             | Result (PASS/FAIL) | Remark |
|---------------|-----------------|------------------------|--------------------|--------|
| 1.1.3         | 15.203          | Antenna Requirement    | PASS               | -      |
| 3.1           | 15.407(a)       | Emission Bandwidth     | PASS               | -      |
| 3.2           | 15.407(a)       | Maximum Output Power   | PASS               | -      |
| 3.3           | 15.407(a)       | Power Spectral Density | PASS               | -      |
| 3.4           | 15.407(b)       | Unwanted Emissions     | PASS               | -      |

**Conformity Assessment Condition:**

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".

**Disclaimer:**

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: **Sam Chen**

Report Producer: **Sophia Shiung**



# 1 General Description

## 1.1 Information

### 1.1.1 RF General Information

| Frequency Range (MHz) | Ch. Bandwidth (MHz) | Ch. Frequency (MHz) | Ch. Space (MHz) |
|-----------------------|---------------------|---------------------|-----------------|
| 5150-5250             | 5                   | 5166.5-5247.5       | 1               |
| 5150-5250             | 10                  | 5169-5245           | 1               |
| 5150-5250             | 15                  | 5171.5-5242.5       | 1               |
| 5150-5250             | 20                  | 5174-5240           | 1               |
| 5150-5250             | 30                  | 5179-5235           | 1               |
| 5150-5250             | 40                  | 5184-5230           | 1               |

| Band         | Mode   | BWch (MHz) | Nant |
|--------------|--------|------------|------|
| 5.15-5.25GHz | QPSK5  | 5          | 2TX  |
| 5.15-5.25GHz | QPSK10 | 10         | 2TX  |
| 5.15-5.25GHz | QPSK15 | 15         | 2TX  |
| 5.15-5.25GHz | QPSK20 | 20         | 2TX  |
| 5.15-5.25GHz | QPSK30 | 30         | 2TX  |
| 5.15-5.25GHz | QPSK40 | 40         | 2TX  |

Note:

- ♦ The 5GHz function uses QPSK modulation.
- ♦ BWch is the nominal channel bandwidth.

### 1.1.2 Table for Frequency Combination Mode

| Type | Mode            | Frequency (MHz) |
|------|-----------------|-----------------|
| 1    | QPSK40+40_80MHz | 5187+5227       |
| 2    | QPSK40+40_80MHz | 5184+5230       |

Note: The above information was declared by manufacturer.



**1.1.3 Antenna Information**

| Ant. | Port | Brand   | Model Name                  | Antenna Type | Connector | Gain (dBi) |
|------|------|---------|-----------------------------|--------------|-----------|------------|
| 1    | 1    | Cambium | Canopy 2x2 SM Extender Dish | Dish         | N/A       | 26         |
|      | 2    |         |                             |              |           |            |

Note 1: The above information was declared by manufacturer.

Note 2: Directional gain information

| Type   | Maximum Output Power  | Power Spectral Density  |
|--------|---|---|
| Non-BF | Directional gain = Max.gain + array gain.<br>For power measurements on IEEE 802.11 devices<br>Array Gain = 0 dB (i.e., no array gain) for N ANT ≤ 4 | $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ |
| BF     | $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$               | $DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ |

Ex.

Directional Gain (NSS1) formula :

$$Directional\ Gain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

$$NSS1(g1,1) = 10^{01/20} ; NSS1(g1,2) = 10^{02/20} ; NSS1(g1,3) = 10^{03/20} ; NSS1(g1,4) = 10^{04/20}$$

$$g_{j,k} = (NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2$$

$$DG = 10 \log \left[ \frac{(NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2}{N_{ANT}/NSS} \right] \Rightarrow 10 \log \left[ \frac{(10^{01/20} + 10^{02/20} + 10^{03/20} + 10^{04/20})^2}{N_{ANT}} \right]$$

Where;

Cross-Polarized Antenna

- 5G UNII-1 G1 = 26.00 dBi; G2 = 26.00 dBi;
- 5G UNII-3 G1 = 26.00 dBi; G2 = 26.00 dBi;
- 6G UNII-5 G1 = 26.00 dBi; G2 = 26.00 dBi;
- 6G UNII-7 G1 = 26.00 dBi; G2 = 26.00 dBi;

- 5G UNII-1 DG = 26.00 dBi
- 5G UNII-3 DG = 26.00 dBi
- 6G UNII-5 DG = 26.00 dBi
- 6G UNII-7 DG = 26.00 dBi

Note 3: For 5GHz function (2TX/2RX):

- Port 1~2 can be used as transmitting/receiving antenna.
- Port 1~2 could transmit/receive simultaneously.

For 6GHz function (2TX/2RX):

- Port 1~2 can be used as transmitting/receiving antenna.
- Port 1~2 could transmit/receive simultaneously.



**1.1.4 Mode Test Duty Cycle**

For other modes:

| Mode                               | DC    | DCF (dB) | T (s)  | VBW (Hz)_1/T |
|------------------------------------|-------|----------|--------|--------------|
| 5.15-5.25GHz_QPSK5_5MHz_Nss1_2TX   | 0.894 | 0.49     | 4.471m | 300          |
| 5.15-5.25GHz_QPSK10_10MHz_Nss1_2TX | 0.875 | 0.58     | 4.373m | 300          |
| 5.15-5.25GHz_QPSK15_15MHz_Nss1_2TX | 0.868 | 0.61     | 4.34m  | 300          |
| 5.15-5.25GHz_QPSK20_20MHz_Nss1_2TX | 0.86  | 0.66     | 4.299m | 300          |
| 5.15-5.25GHz_QPSK30_30MHz_Nss1_2TX | 0.858 | 0.67     | 4.291m | 300          |
| 5.15-5.25GHz_QPSK40_40MHz_Nss1_2TX | 0.855 | 0.68     | 4.275m | 300          |

For frequency combination modes:

| Mode            | DC    | DCF (dB) | T (s)  | VBW (Hz)_1/T |
|-----------------|-------|----------|--------|--------------|
| QPSK40+40_Nss 1 | 0.474 | 3.24     | 2.368m | 1k           |

Note:

- ◆ DC is Duty Cycle.
- ◆ DCF is Duty Cycle Factor.

**1.1.5 EUT Operational Condition**

|                              |                                     |                     |                                     |                     |
|------------------------------|-------------------------------------|---------------------|-------------------------------------|---------------------|
| <b>EUT Power Type</b>        | From PoE                            |                     |                                     |                     |
| <b>Beamforming Function</b>  | <input type="checkbox"/>            | With beamforming    | <input checked="" type="checkbox"/> | Without beamforming |
| <b>Function</b>              | <input type="checkbox"/>            | Outdoor P2M         | <input type="checkbox"/>            | Indoor P2M          |
|                              | <input checked="" type="checkbox"/> | Fixed P2P           | <input type="checkbox"/>            | Client              |
|                              | <input type="checkbox"/>            | Point-to-multipoint | <input checked="" type="checkbox"/> | Point-to-point      |
| <b>Test Software Version</b> | DOS [ver 6.1.7601]                  |                     |                                     |                     |

Note: The above information was declared by manufacturer.

**1.1.6 Table for EUT Supports Function**

| Function                       | Support Band                                    |
|--------------------------------|---|
| AP                             | 5GHz UNII 1 and UNII 3 / 6GHz UNII 5 and UNII 7 |
| Client without radar detection | 6GHz UNII 5 and UNII 7                          |

Note 1: The AP mode was tested and recorded in this test report.

Note 2: The above information was declared by manufacturer.



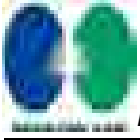
**1.1.7 Table for Permissive Change**

This product is an extension of original one reported under Sporton project number: FR470407.

Below is the table for the change of the product with respect to the original one.

| <b>Modifications</b>   | <b>Performance Checking</b>   |
|--|---|
| 1. Enable 6GHz UNII 5 and UNII 7 for Standard Power Access Point (6SD) and Fixed Client (6FC) modes through SW change. | After evaluation, this test report was not affected.  |
| 2. Enable 5GHz UNII 1 for Access Point mode through SW change.   | For 5GHz UNII 1:<br>1. Emission Bandwidth<br>2. Maximum Output Power<br>3. Power Spectral Density<br>4. Unwanted Emissions > 1GHz |

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## 1.2 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2013
- ◆ FCC KDB 789033 D02 v02r01

The following reference test guidance is not within the scope of accreditation of TAF.

- ◆ FCC KDB 662911 D01 v02r01
- ◆ FCC KDB 412172 D01 v01r01

## 1.3 Testing Location Information

| Testing Location Information                              |  |
|---|--|
| Test Lab. : Sporton International Inc. Hsinchu Laboratory |  |
| Hsinchu<br>(TAF: 3787)                                    | ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)<br>TEL: 886-3-656-9065 FAX: 886-3-656-9085<br>Test site Designation No. TW3787 with FCC.<br>Conformity Assessment Body Identifier (CABID) TW3787 with ISED. |

| Test Condition  | Test Site No. | Test Engineer | Test Environment<br>(°C / %) | Test Date                       |
|-----------------|---------------|---------------|------------------------------|---------------------------------|
| RF Conducted    | TH01-CB       | Ken Yeh       | 22.3~24.1 / 60~63            | Aug. 27, 2024~<br>Oct. 09, 2024 |
| Radiated < 1GHz | 03CH05-CB     | Stim Sung     | 21.6~22.7 / 56~59            | Jul. 29, 2024~<br>Oct. 09, 2024 |
| Radiated > 1GHz | 03CH03-CB     | Stim Sung     | 22.7~23.8 / 56~59            | Jul. 29, 2024~<br>Oct. 09, 2024 |
|                 | 03CH05-CB     |               | 21.6~22.7 / 56~59            |                                 |

## 1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

| Parameter                         | Uncertainty | Remark                   |
|-----------------------------------|-------------|--------------------------|
| Radiated Emission (1GHz ~ 18GHz)  | 4.2 dB      | Confidence levels of 95% |
| Radiated Emission (18GHz ~ 40GHz) | 4.0 dB      | Confidence levels of 95% |
| Conducted Emission                | 3.1 dB      | Confidence levels of 95% |
| Output Power Measurement          | 0.8 dB      | Confidence levels of 95% |
| Power Density Measurement         | 3.1 dB      | Confidence levels of 95% |
| Bandwidth Measurement             | 2.1 %       | Confidence levels of 95% |



## 2 Test Configuration of EUT

### 2.1 Test Channel Mode

For other modes:

| Mode                  |
|-----------------------|
| QPSK5_5MHz_Nss1_2TX   |
| 5166.5MHz             |
| 5207MHz               |
| 5247.5MHz             |
| QPSK10_10MHz_Nss1_2TX |
| 5169MHz               |
| 5207MHz               |
| 5245MHz               |
| QPSK15_15MHz_Nss1_2TX |
| 5171.5MHz             |
| 5207MHz               |
| 5242.5MHz             |
| QPSK20_20MHz_Nss1_2TX |
| 5174MHz               |
| 5207MHz               |
| 5240MHz               |
| QPSK30_30MHz_Nss1_2TX |
| 5179MHz               |
| 5207MHz               |
| 5235MHz               |
| QPSK40_40MHz_Nss1_2TX |
| 5184MHz               |
| 5207MHz               |
| 5230MHz               |

For frequency combination modes:

| Mode                     |
|--------------------------|
| QPSK40+40_80MHz_Nss1_2TX |
| #5184MHz,#5230MHz        |
| #5187MHz,#5227MHz        |



## 2.2 The Worst Case Measurement Configuration

| The Worst Case Mode for Following Conformance Tests |  |
|---|--|
| Tests Item  | Emission Bandwidth<br>Maximum Output Power<br>Power Spectral Density |
| Test Condition                                      | Conducted measurement at transmit chains                             |

| The Worst Case Mode for Following Conformance Tests |   |
|---|---|
| Tests Item  | Unwanted Emissions  |
| Test Condition                                      | Radiated measurement<br>If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type. |
| Operating Mode > 1GHz                               | CTX   |
|   | After evaluating, EUT in Y axis was the worst case, so the measurement will follow this same test configuration.  |
| 1   | EUT in Y axis   |

Note: The PoE was for measurement only and would not be marketed. Its information is shown as below:

| Equipment | Brand Name       | Model Name   |
|-----------|------------------|--------------|
| PoE       | Cambium Networks | NET-P30-56IN |

## 2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

## 2.4 Accessories

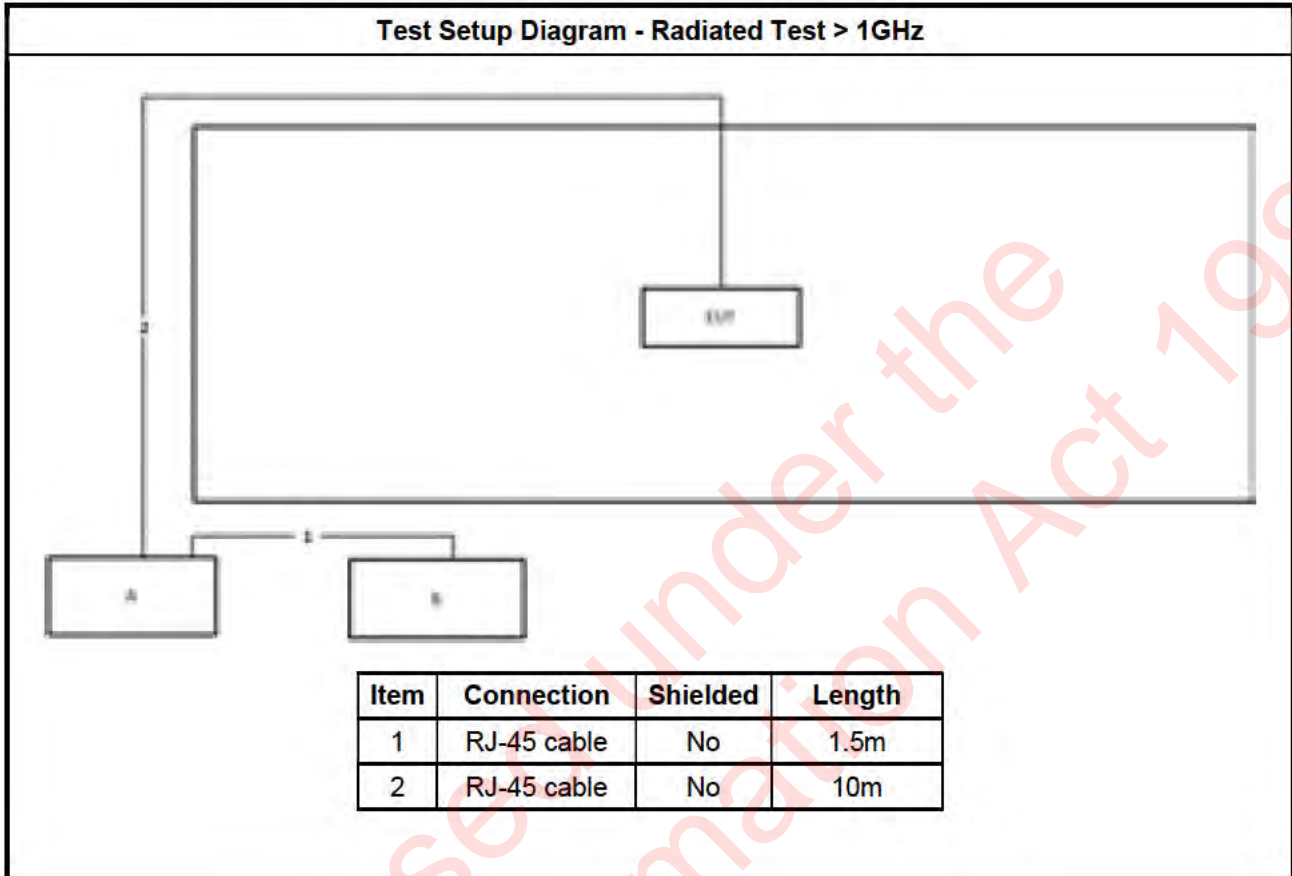
N/A

## 2.5 Support Equipment

| Support Equipment |           |                  |               |        |
|-------------------|-----------|------------------|---------------|--------|
| No.               | Equipment | Brand Name       | Model Name    | FCC ID |
| A                 | PoE       | Cambium Networks | NET-P30-56-IN | N/A    |
| B                 | Notebook  | DELL             | E4300         | N/A    |



## 2.6 Test Setup Diagram





### 3 Transmitter Test Result

#### 3.1 Emission Bandwidth

##### 3.1.1 Emission Bandwidth Limit

| Emission Bandwidth Limit            |   |
|-------------------------------------|---|
| <b>UNII Devices</b>                 |   |
| <input checked="" type="checkbox"/> | For the 5.15-5.25 GHz band, N/A   |
| <input type="checkbox"/>            | For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.            |
| <input type="checkbox"/>            | For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.           |
| <input type="checkbox"/>            | For the 5.725-5.85 GHz band, 26 dB emission bandwidth ,N/A.<br>6 dB emission bandwidth ≥ 500kHz.  |
| <b>LE-LAN Devices</b>               |   |
| <input type="checkbox"/>            | For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.                      |
| <input type="checkbox"/>            | For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz                        |
| <input type="checkbox"/>            | For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz |
| <input type="checkbox"/>            | For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.  |

##### 3.1.2 Measuring Instruments

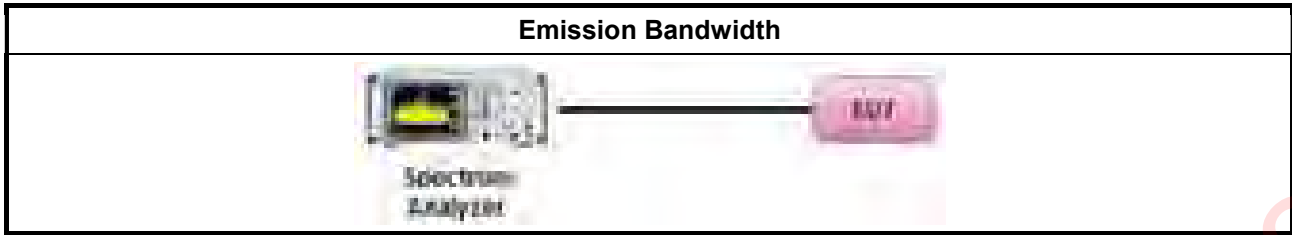
Refer a test equipment and calibration data table in this test report.

##### 3.1.3 Test Procedures

| Test Method  |   |
|--|---|
| ▪ For the emission bandwidth shall be measured using one of the options below: |   |
| <input checked="" type="checkbox"/>  | Refer as FCC KDB 789033 D02, clause C for EBW and clause D for OBW measurement. |
| <input type="checkbox"/>   | Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.              |
| <input type="checkbox"/>   | Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.                          |



**3.1.4 Test Setup**



**3.1.5 Test Result of Emission Bandwidth**

Refer as Appendix A

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### 3.2 Maximum Output Power

#### 3.2.1 Limit

| Maximum Output Power Limit   |  |
|--|--|
| <b>UNII Devices</b>  |  |
| <input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:  |  |
| <input type="checkbox"/>   | <ul style="list-style-type: none"> <li>Outdoor AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>. e.i.r.p. at any elevation angle above 30 degrees <math>\leq 125mW</math> [21dBm]</li> <li>Indoor AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math></li> <li>Point-to-point AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 23</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 23)</math>.</li> <li>Mobile or Portable Client: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 250 mW. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 24 - (G_{TX} - 6)</math>.</li> </ul> |
| <input type="checkbox"/>   | For the 5.25-5.35 GHz band, the maximum conducted output power ( $P_{Out}$ ) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$ .   |
| <input type="checkbox"/>   | For the 5.47-5.725 GHz band, the maximum conducted output power ( $P_{Out}$ ) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$ .  |
| <input type="checkbox"/> For the 5.725-5.85 GHz band:  |  |
| <input type="checkbox"/>   | <ul style="list-style-type: none"> <li>Point-to-multipoint systems (P2M): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>.</li> <li>Point-to-point systems (P2P): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W.</li> </ul>  |
| <b>LE-LAN Devices</b>  |  |
| <input type="checkbox"/> For the 5.15-5.25 GHz band:   |  |
| <input type="checkbox"/>   | <ul style="list-style-type: none"> <li>For other devices: The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.</li> <li>Vehicles devices: The maximum e.i.r.p. shall not exceed 30 mW or 1.76 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.</li> </ul>   |
| <input type="checkbox"/> For the 5.25-5.35 GHz band:   |  |
| <input type="checkbox"/>   | <ul style="list-style-type: none"> <li>For other devices: The maximum conducted output power shall not exceed 250 mW or 11 + 10 log 10 B, dBm, and the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz</li> <li>Vehicles devices: The maximum e.i.r.p. shall not exceed 30 mW or 1.76 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.</li> </ul>  |
| <input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum conducted output power shall not exceed 250 mW or 11 + 10 log 10 B, dBm, and the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. |  |



|  |   |
|--|---|
| <input type="checkbox"/>   | For the 5.725-5.85 GHz band:  |
|  | <ul style="list-style-type: none"> <li>Point-to-multipoint systems (P2M): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>.</li> <li>Point-to-point systems (P2P): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W.</li> </ul> |
| $P_{Out}$ = maximum conducted output power in dBm,<br>$G_{TX}$ = the maximum transmitting antenna directional gain in dBi. |   |

### 3.2.2 Measuring Instruments

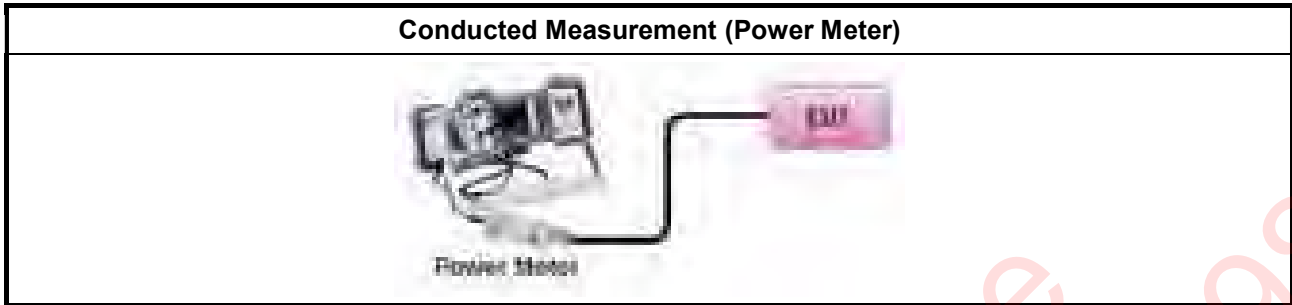
Refer a test equipment and calibration data table in this test report.

### 3.2.3 Test Procedures

| Test Method                         |  |
|-------------------------------------|--|
|                                     | Average over on/off periods with duty factor   |
| <input type="checkbox"/>            | Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).  |
| <input type="checkbox"/>            | Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)   |
|                                     | Wideband RF power meter and average over on/off periods with duty factor   |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 789033 D02, clause E Method PM-G (using an RF average power meter).   |
| <input checked="" type="checkbox"/> | For conducted measurement.   |
|                                     | <ul style="list-style-type: none"> <li>If the EUT supports multiple transmit chains using options given below:<br/>Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.</li> <li>If multiple transmit chains, EIRP calculation could be following as methods:<br/> <math>P_{total} = P_1 + P_2 + \dots + P_n</math><br/>           (calculated in linear unit [mW] and transfer to log unit [dBm])<br/> <math>EIRP_{total} = P_{total} + DG</math> </li> </ul> |
| <input type="checkbox"/>            | For radiated measurement.  |
|                                     | <ul style="list-style-type: none"> <li>Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"</li> <li>Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li> <li>Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.</li> </ul>  |



**3.2.4 Test Setup**



**3.2.5 Test Result of Maximum Output Power**

Refer as Appendix B

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### 3.3 Power Spectral Density

#### 3.3.1 Limit

| Peak Power Spectral Density Limit   |  |
|---|--|
| <b>UNII Devices</b>   |  |
| <input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:   |  |
| <input type="checkbox"/>  | <ul style="list-style-type: none"> <li>Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 17 - (G_{TX} - 6)</math>.</li> <li>Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 17 - (G_{TX} - 6)</math>.</li> <li>Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If <math>G_{TX} &gt; 23</math> dBi, then <math>P_{Out} = 17 - (G_{TX} - 23)</math>.</li> <li>Mobile or Portable Client: the peak power spectral density (PPSD) <math>\leq 11</math> dBm/MHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>PPSD = 11 - (G_{TX} - 6)</math>.</li> </ul> |
| <input type="checkbox"/>  | For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$ .   |
| <input type="checkbox"/>  | For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$ .  |
| <input type="checkbox"/> For the 5.725-5.85 GHz band:   |  |
| <input type="checkbox"/>  | <ul style="list-style-type: none"> <li>Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>PPSD = 30 - (G_{TX} - 6)</math>.</li> <li>Point-to-point systems (P2P): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz.</li> </ul>   |
| <b>LE-LAN Devices</b>   |  |
| <input type="checkbox"/> For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) $\leq 10$ dBm/MHz.   |  |
| <input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz.  |  |
| <input type="checkbox"/>  | <ul style="list-style-type: none"> <li>e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where <math>\theta</math> is the angle above the local horizontal plane (of the Earth) as shown below:<br/> -13 dBW/MHz for <math>0^\circ \leq \theta &lt; 8^\circ</math> ; -13 - 0.716 (<math>\theta-8</math>) dBW/MHz for <math>8^\circ \leq \theta &lt; 40^\circ</math><br/> -35.9 - 1.22 (<math>\theta-40</math>) dBW/MHz for <math>40^\circ \leq \theta \leq 45^\circ</math> ; -42 dBW/MHz for <math>\theta &gt; 45^\circ</math></li> </ul>   |
| <input type="checkbox"/>  | For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz.   |
| <input type="checkbox"/> For the 5.725-5.85 GHz band:   |  |
| <input type="checkbox"/>  | <ul style="list-style-type: none"> <li>Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>PPSD = 30 - (G_{TX} - 6)</math>.</li> <li>Point-to-point systems (P2P): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz.</li> </ul>   |
| <b>PPSD</b> = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz<br><b>G<sub>TX</sub></b> = the maximum transmitting antenna directional gain in dBi. |  |

#### 3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

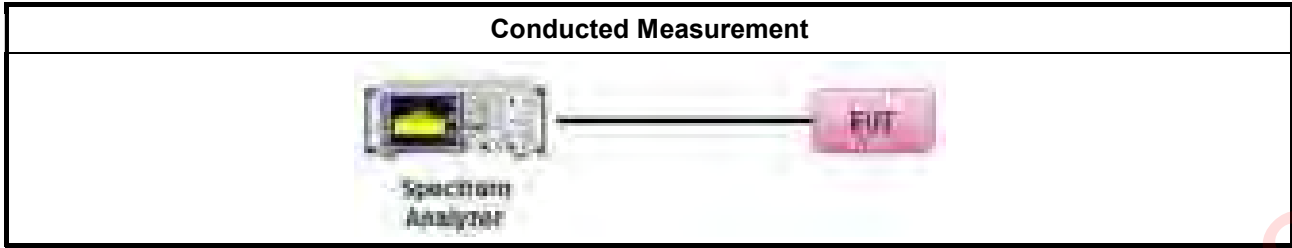


3.3.3 Test Procedures

| Test Method   |  |
|---|--|
| <ul style="list-style-type: none"> <li>Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:</li> </ul> |  |
| <input type="checkbox"/>  | Refer as FCC KDB 789033 D02, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth   |
| [duty cycle ≥ 98% or external video / power trigger]  |  |
| <input checked="" type="checkbox"/>   | Refer as FCC KDB 789033 D02, clause E Method SA-1 (spectral trace averaging).  |
| <input type="checkbox"/>  | Refer as FCC KDB 789033 D02, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)   |
| duty cycle < 98% and average over on/off periods with duty factor   |  |
| <input checked="" type="checkbox"/>   | Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).  |
| <input type="checkbox"/>  | Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)   |
| <input checked="" type="checkbox"/> For conducted measurement.  |  |
| <ul style="list-style-type: none"> <li>If the EUT supports multiple transmit chains using options given below:</li> </ul>   |  |
| <input checked="" type="checkbox"/>   | Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace. |
| <input type="checkbox"/>  | Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,   |
| <input type="checkbox"/>  | Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.  |
| <ul style="list-style-type: none"> <li>If multiple transmit chains, EIRP PPSD calculation could be following as methods:<br/> <math>PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n</math><br/> (calculated in linear unit [mW] and transfer to log unit [dBm])<br/> <math>EIRP_{total} = PPSD_{total} + DG</math> </li> </ul>  |  |
| <input type="checkbox"/> For radiated measurement.  |  |
| <ul style="list-style-type: none"> <li>Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"</li> <li>Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li> <li>Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.</li> </ul>   |  |



**3.3.4 Test Setup**



**3.3.5 Test Result of Power Spectral Density**

Refer as Appendix C

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### 3.4 Unwanted Emissions

#### 3.4.1 Transmitter Unwanted Emissions Limit

| Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit |                       |                         |                      |
|---|-----------------------|-------------------------|----------------------|
| Frequency Range (MHz)   | Field Strength (uV/m) | Field Strength (dBuV/m) | Measure Distance (m) |
| 0.009~0.490   | 2400/F(kHz)           | 48.5 - 13.8             | 300                  |
| 0.490~1.705   | 24000/F(kHz)          | 33.8 - 23               | 30                   |
| 1.705~30.0  | 30                    | 29                      | 30                   |
| 30~88   | 100                   | 40                      | 3                    |
| 88~216  | 150                   | 43.5                    | 3                    |
| 216~960   | 200                   | 46                      | 3                    |
| Above 960   | 500                   | 54                      | 3                    |

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.



| Un-restricted band emissions above 1GHz Limit       |   |
|---|---|
| Operating Band                                      | Limit   |
| <input checked="" type="checkbox"/> 5.15 - 5.25 GHz | e.i.r.p. -27 dBm [68.2 dBuV/m@3m]   |
| <input type="checkbox"/> 5.25 - 5.35 GHz            | e.i.r.p. -27 dBm [68.2 dBuV/m@3m]   |
| <input type="checkbox"/> 5.47 - 5.725 GHz           | e.i.r.p. -27 dBm [68.2 dBuV/m@3m]   |
| <input type="checkbox"/> 5.725 - 5.85 GHz           | all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. |

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

### 3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

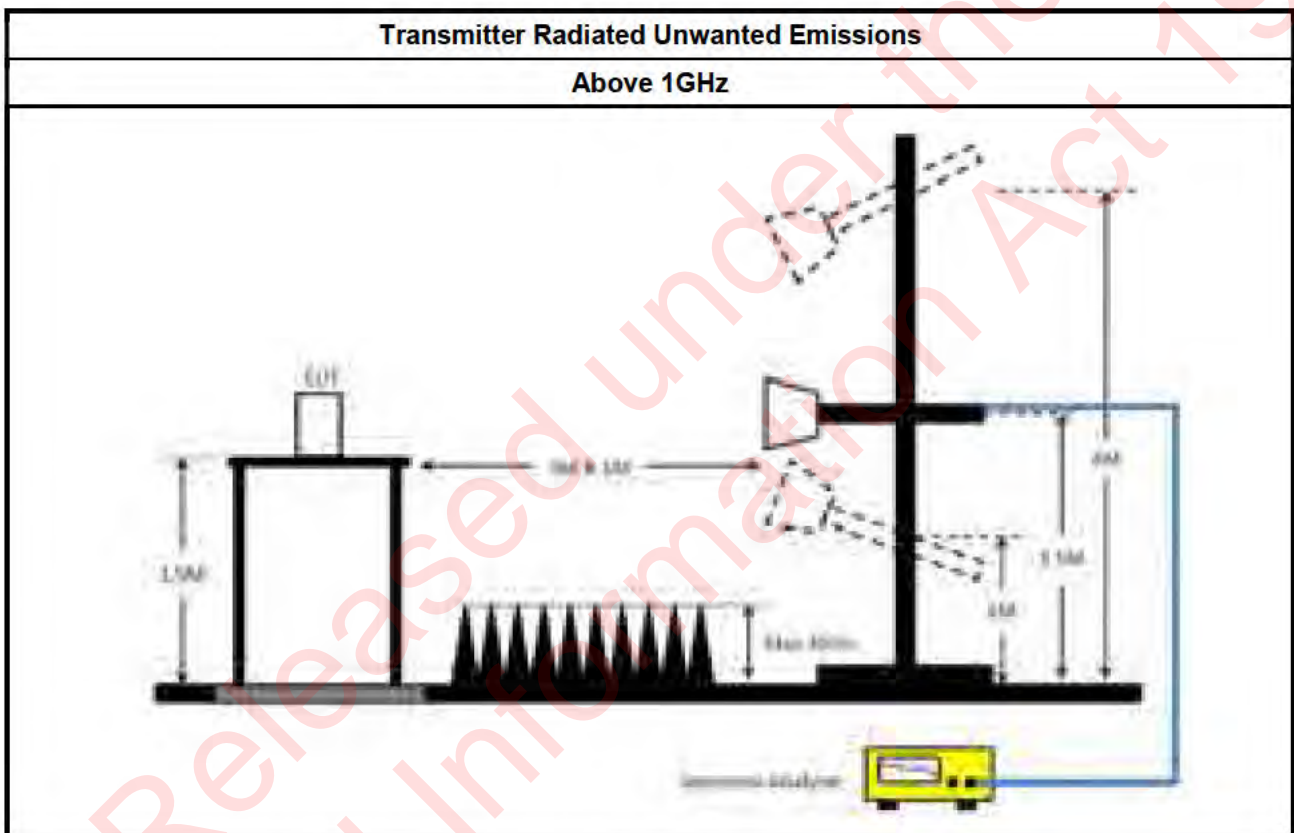
### 3.4.3 Test Procedures

| Test Method   |  |
|---|--|
| <ul style="list-style-type: none"> <li>Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).</li> </ul>  |  |
| <ul style="list-style-type: none"> <li>The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].</li> </ul>  |  |
| <ul style="list-style-type: none"> <li>For the transmitter unwanted emissions shall be measured using following options below:             <ul style="list-style-type: none"> <li>Refer as FCC KDB 789033 D02, clause G)2) for unwanted emissions into non-restricted bands.</li> <li>Refer as FCC KDB 789033 D02, clause G)1) for unwanted emissions into restricted bands.                 <ul style="list-style-type: none"> <li><input type="checkbox"/> Refer as FCC KDB 789033 D02, G)6) Method AD (Trace Averaging).</li> <li><input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02, G)6) Method VB (Reduced VBW).</li> <li><input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.</li> <li><input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.</li> <li><input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02, clause G)5) measurement procedure peak limit.</li> <li><input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.</li> </ul> </li> </ul> </li> </ul> |  |



- For radiated measurement.
  - Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
  - Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
  - Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
- The any unwanted emissions level shall not exceed the fundamental emission level.
- All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

### 3.4.4 Test Setup



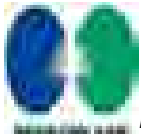
### 3.4.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = Level.

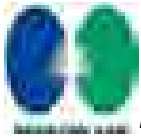
### 3.4.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix D



## 4 Test Equipment and Calibration Data

| Instrument                    | Brand          | Model No.           | Serial No.          | Characteristics      | Calibration Date | Calibration Due Date | Remark                   |
|-------------------------------|----------------|---------------------|---------------------|----------------------|------------------|----------------------|--------------------------|
| 3m Semi Anechoic Chamber VSWR | TDK            | SAC-3M              | 03CH03-CB           | 1GHz~18GHz<br>3m     | May 03, 2024     | May 02, 2025         | Radiation<br>(03CH03-CB) |
| Horn Antenna                  | ETS · Lindgren | 3115                | 6821                | 750MHz~<br>18GHz     | Jan. 24, 2024    | Jan. 23, 2025        | Radiation<br>(03CH03-CB) |
| Horn Antenna                  | SCHWARZBECK    | BBHA 9170           | BBHA9170507         | 15GHz ~ 40GHz        | Jul. 09, 2024    | Jul. 08, 2025        | Radiation<br>(03CH03-CB) |
| Pre-Amplifier                 | Agilent        | 8449B               | 3008A02097          | 1GHz ~<br>26.5GHz    | Jun. 29, 2024    | Jun. 28, 2025        | Radiation<br>(03CH03-CB) |
| Pre-Amplifier                 | SGH            | SGH184              | 20221107-3          | 18GHz ~ 40GHz        | Nov. 24, 2023    | Nov. 23, 2024        | Radiation<br>(03CH03-CB) |
| Spectrum Analyzer             | R&S            | FSP40               | 100019              | 9kHz ~ 40GHz         | Jun. 11, 2024    | Jun. 10, 2025        | Radiation<br>(03CH03-CB) |
| RF Cable-high                 | Woken          | RG402               | High<br>Cable-20+29 | 1GHz ~ 18GHz         | Feb. 29, 2024    | Feb. 28, 2025        | Radiation<br>(03CH03-CB) |
| RF Cable-high                 | Woken          | RG402               | High Cable-29       | 1GHz ~ 18GHz         | Feb. 29, 2024    | Feb. 28, 2025        | Radiation<br>(03CH03-CB) |
| High Cable                    | Woken          | WCA0929M            | 40G#5+6             | 1GHz ~ 40GHz         | Jan. 11, 2024    | Jan. 10, 2025        | Radiation<br>(03CH03-CB) |
| Test Software                 | SPORTON        | SENSE-15407<br>_NII | V5.11.19            | 5.15GHz-<br>7.115GHz | N.C.R.           | N.C.R.               | Radiation<br>(03CH03-CB) |
| 3m Semi Anechoic Chamber NSA  | TDK            | SAC-3M              | 03CH05-CB           | 30MHz ~ 1GHz         | Aug. 01, 2024    | Jul. 31, 2025        | Radiation<br>(03CH05-CB) |
| 3m Semi Anechoic Chamber VSWR | TDK            | SAC-3M              | 03CH05-CB           | 1GHz~18GHz<br>3m     | Sep. 29, 2023    | Sep. 28, 2024        | Radiation<br>(03CH05-CB) |
| 3m Semi Anechoic Chamber VSWR | TDK            | SAC-3M              | 03CH05-CB           | 1GHz~18GHz<br>3m     | Sep. 28, 2024    | Sep. 27, 2025        | Radiation<br>(03CH05-CB) |
| Horn Antenna                  | SCHWARZBECK    | BBHA9120D           | BBHA 9120<br>D-1291 | 1GHz~18GHz           | Jun. 20, 2024    | Jun. 19, 2025        | Radiation<br>(03CH05-CB) |
| Horn Antenna                  | SCHWARZBECK    | BBHA 9170           | BBHA9170507         | 15GHz ~ 40GHz        | Jul. 09, 2024    | Jul. 08, 2025        | Radiation<br>(03CH05-CB) |
| Pre-Amplifier                 | EMCI           | EMC12630SE          | 980287              | 1GHz -<br>26.5GHz    | Jun. 29, 2024    | Jun. 28, 2025        | Radiation<br>(03CH05-CB) |
| Pre-Amplifier                 | SGH            | SGH184              | 20221107-3          | 18GHz ~ 40GHz        | Nov. 24, 2023    | Nov. 23, 2024        | Radiation<br>(03CH05-CB) |
| Spectrum Analyzer             | R&S            | FSP40               | 100304              | 9kHz ~ 40GHz         | Apr. 17, 2024    | Apr. 16, 2025        | Radiation<br>(03CH05-CB) |
| RF Cable-high                 | Woken          | RG402               | High Cable-28       | 1GHz~18GHz           | Oct. 02, 2023    | Oct. 01, 2024        | Radiation<br>(03CH05-CB) |



| Instrument        | Brand   | Model No.        | Serial No.       | Characteristics  | Calibration Date | Calibration Due Date | Remark                |
|-------------------|---------|------------------|------------------|------------------|------------------|----------------------|-----------------------|
| RF Cable-high     | Woken   | RG402            | High Cable-28    | 1GHz~18GHz       | Oct. 01, 2024    | Sep. 30, 2025        | Radiation (03CH05-CB) |
| RF Cable-high     | Woken   | RG402            | High Cable-04+28 | 1GHz~18GHz       | Oct. 02, 2023    | Oct. 01, 2024        | Radiation (03CH05-CB) |
| RF Cable-high     | Woken   | RG402            | High Cable-04+28 | 1GHz~18GHz       | Oct. 01, 2024    | Sep. 30, 2025        | Radiation (03CH05-CB) |
| High Cable        | Woken   | WCA0929M         | 40G#5+6          | 1GHz ~ 40GHz     | Jan. 11, 2024    | Jan. 10, 2025        | Radiation (03CH05-CB) |
| Test Software     | SPORTON | SENSE-15407_NII  | V5.11.19         | 5.15GHz-7.115GHz | N.C.R.           | N.C.R.               | Radiation (03CH05-CB) |
| Spectrum analyzer | R&S     | FSV40            | 100979           | 9kHz~40GHz       | May 27, 2024     | May 26, 2025         | Conducted (TH01-CB)   |
| Band Rejector     | MTJ     | 6G Band Rejector | 6G-BRJ-01        | 1 ~ 18GHz        | Oct. 03, 2023    | Oct. 02, 2024        | Conducted (TH01-CB)   |
| Band Rejector     | MTJ     | 6G Band Rejector | BRJ-01           | 1 ~ 18GHz        | Oct. 02, 2024    | Oct. 01, 2025        | Conducted (TH01-CB)   |
| Band Rejector     | MTJ     | 6G Band Rejector | 6G-BRJ-02        | 1~ 18GHz         | Oct. 03, 2023    | Oct. 02, 2024        | Conducted (TH01-CB)   |
| Band Rejector     | MTJ     | 6G Band Rejector | BRJ-02           | 1~ 18GHz         | Oct. 02, 2024    | Oct. 01, 2025        | Conducted (TH01-CB)   |
| Switch            | SPTCB   | SP-SWI           | SWI-01           | 1~26.5GHz        | Oct. 03, 2023    | Oct. 02, 2024        | Conducted (TH01-CB)   |
| Switch            | SPTCB   | SP-SWI           | SWI-01           | 1~18GHz          | Oct. 02, 2024    | Oct. 01, 2025        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402            | High Cable-06    | 1GHz – 18GHz     | Oct. 02, 2023    | Oct. 01, 2024        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402            | High Cable-06    | 1GHz – 18GHz     | Oct. 01, 2024    | Sep. 30, 2025        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402            | High Cable-07    | 1GHz – 18GHz     | Oct. 02, 2023    | Oct. 01, 2024        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402            | High Cable-07    | 1GHz – 18GHz     | Oct. 01, 2024    | Sep. 30, 2025        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402            | High Cable-08    | 1GHz – 18GHz     | Oct. 02, 2023    | Oct. 01, 2024        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402            | High Cable-08    | 1GHz – 18GHz     | Oct. 01, 2024    | Sep. 30, 2025        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402            | High Cable-09    | 1GHz – 18GHz     | Oct. 02, 2023    | Oct. 01, 2024        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402            | High Cable-09    | 1GHz – 18GHz     | Oct. 01, 2024    | Sep. 30, 2025        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402            | High Cable-10    | 1GHz – 18GHz     | Oct. 02, 2023    | Oct. 01, 2024        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402            | High Cable-10    | 1GHz – 18GHz     | Oct. 01, 2024    | Sep. 30, 2025        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402            | High Cable-30    | 1GHz – 18GHz     | Oct. 02, 2023    | Oct. 01, 2024        | Conducted (TH01-CB)   |



# RADIO TEST REPORT

Report No. : FR470407-01AA

| Instrument    | Brand   | Model No.       | Serial No. | Characteristics   | Calibration Date | Calibration Due Date | Remark              |
|---------------|---------|-----------------|------------|-------------------|------------------|----------------------|---------------------|
| Cable 9k-18G  | Woken   | RG402           | Cable-95   | 9 kHz –18 GHz     | Oct. 01, 2024    | Sep. 30, 2025        | Conducted (TH01-CB) |
| Power Sensor  | Agilent | E9327A          | US40442088 | 50MHz~18GHz       | Mar. 01, 2024    | Feb. 28, 2025        | Conducted (TH01-CB) |
| Power Meter   | Agilent | E4416A          | MY45100745 | 50MHz~18GHz       | Jul. 12, 2024    | Jul. 11, 2025        | Conducted (TH01-CB) |
| Test Software | SPORTON | SENSE-15407_NII | V5.11.19   | 5.15GHz-7.115 GHz | N.C.R.           | N.C.R.               | Conducted (TH01-CB) |

Note: Calibration Interval of instruments listed above is one year.

NCR means Non-Calibration required.

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Summary

| Mode                  | Max-N dB<br>(Hz) | Max-OBW<br>(Hz) | ITU-Code | Min-N dB<br>(Hz) | Min-OBW<br>(Hz) |
|-----------------------|------------------|-----------------|----------|------------------|-----------------|
| 5.15-5.25GHz          | -                | -               | -        | -                | -               |
| QPSK5_5MHz_Nss1_2TX   | 5.06M            | 4.607M          | 4M61G7D  | 4.758M           | 4.575M          |
| QPSK10_10MHz_Nss1_2TX | 9.983M           | 9.228M          | 9M23G7D  | 9.79M            | 9.184M          |
| QPSK15_15MHz_Nss1_2TX | 15.51M           | 13.832M         | 13M8G7D  | 14.479M          | 13.764M         |
| QPSK20_20MHz_Nss1_2TX | 20.075M          | 18.525M         | 18M5G7D  | 19.085M          | 18.372M         |
| QPSK30_30MHz_Nss1_2TX | 30.608M          | 27.715M         | 27M7G7D  | 28.463M          | 27.591M         |
| QPSK40_40MHz_Nss1_2TX | 39.16M           | 37.051M         | 37M1G7D  | 38.61M           | 36.777M         |

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Max-OBW = Maximum 99% occupied bandwidth;  
Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Min-OBW = Minimum 99% occupied bandwidth

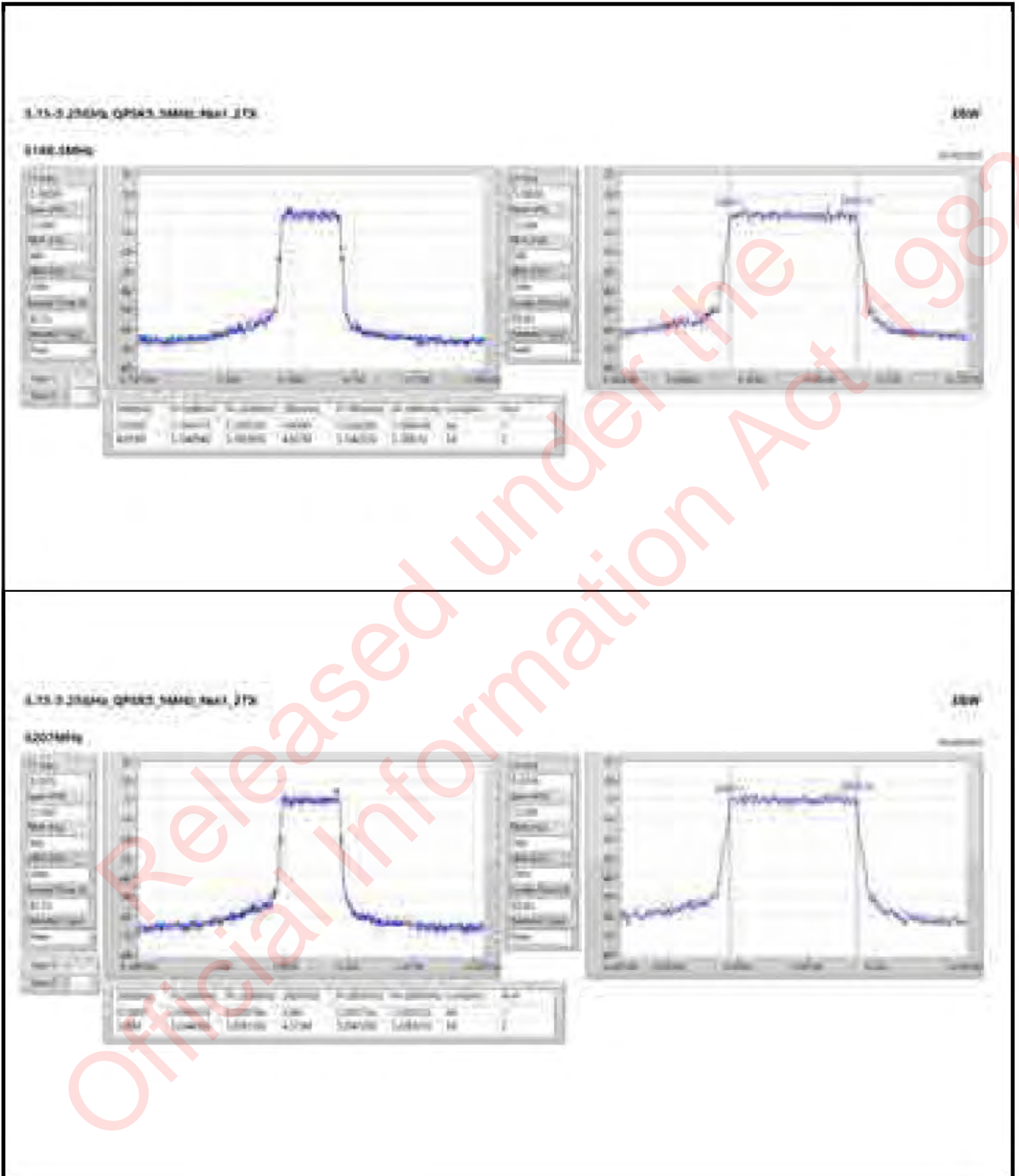
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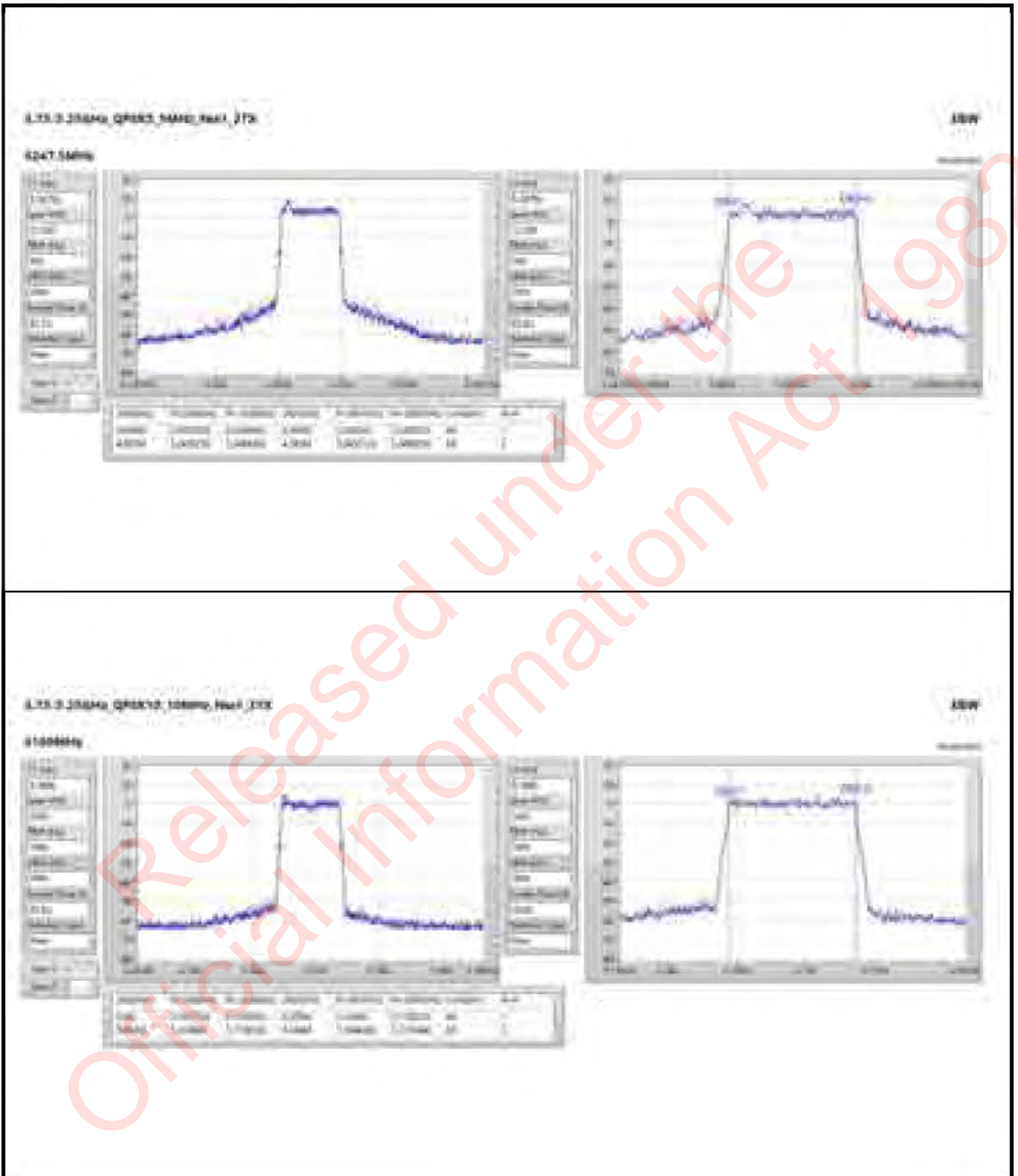


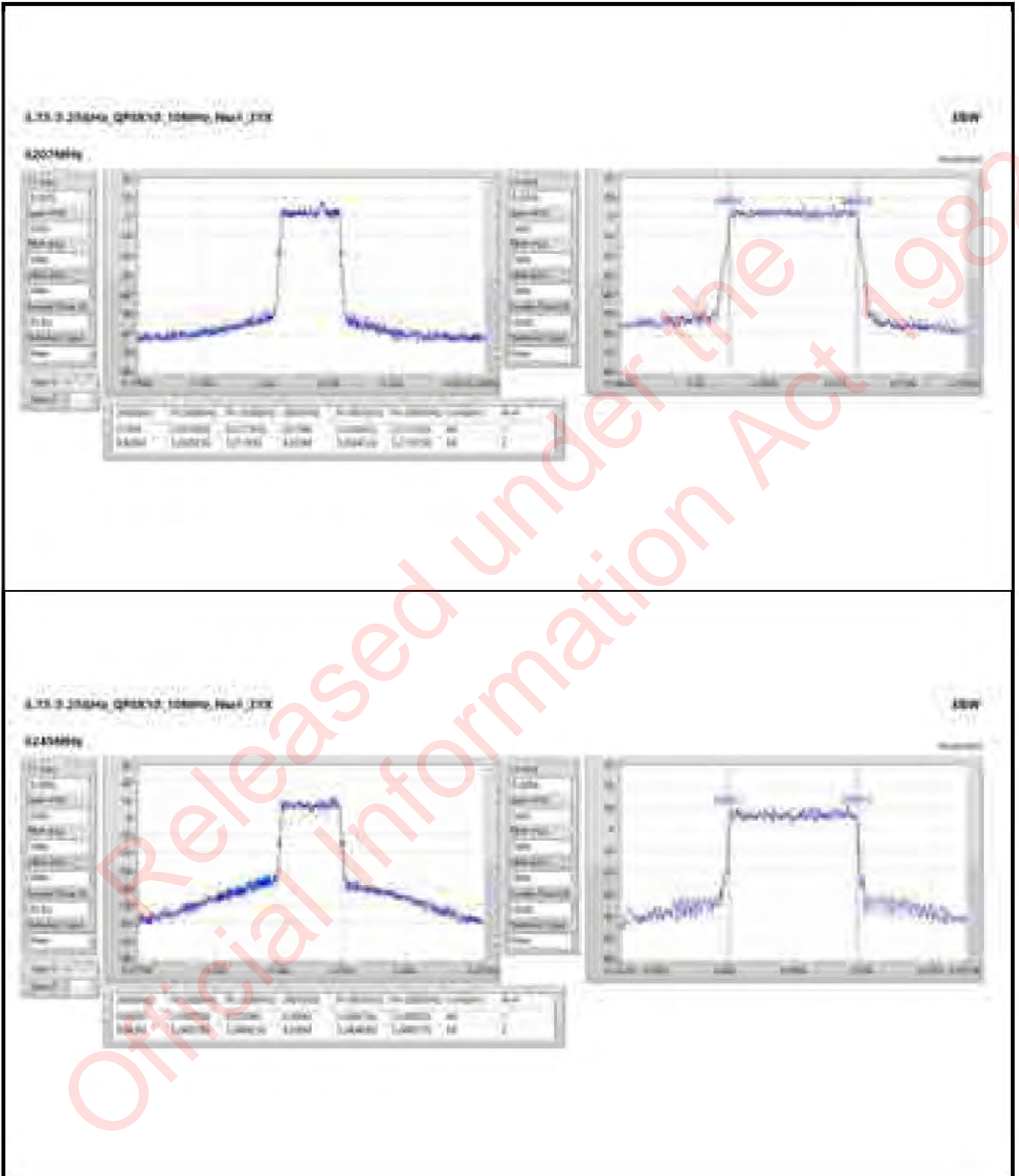
Result

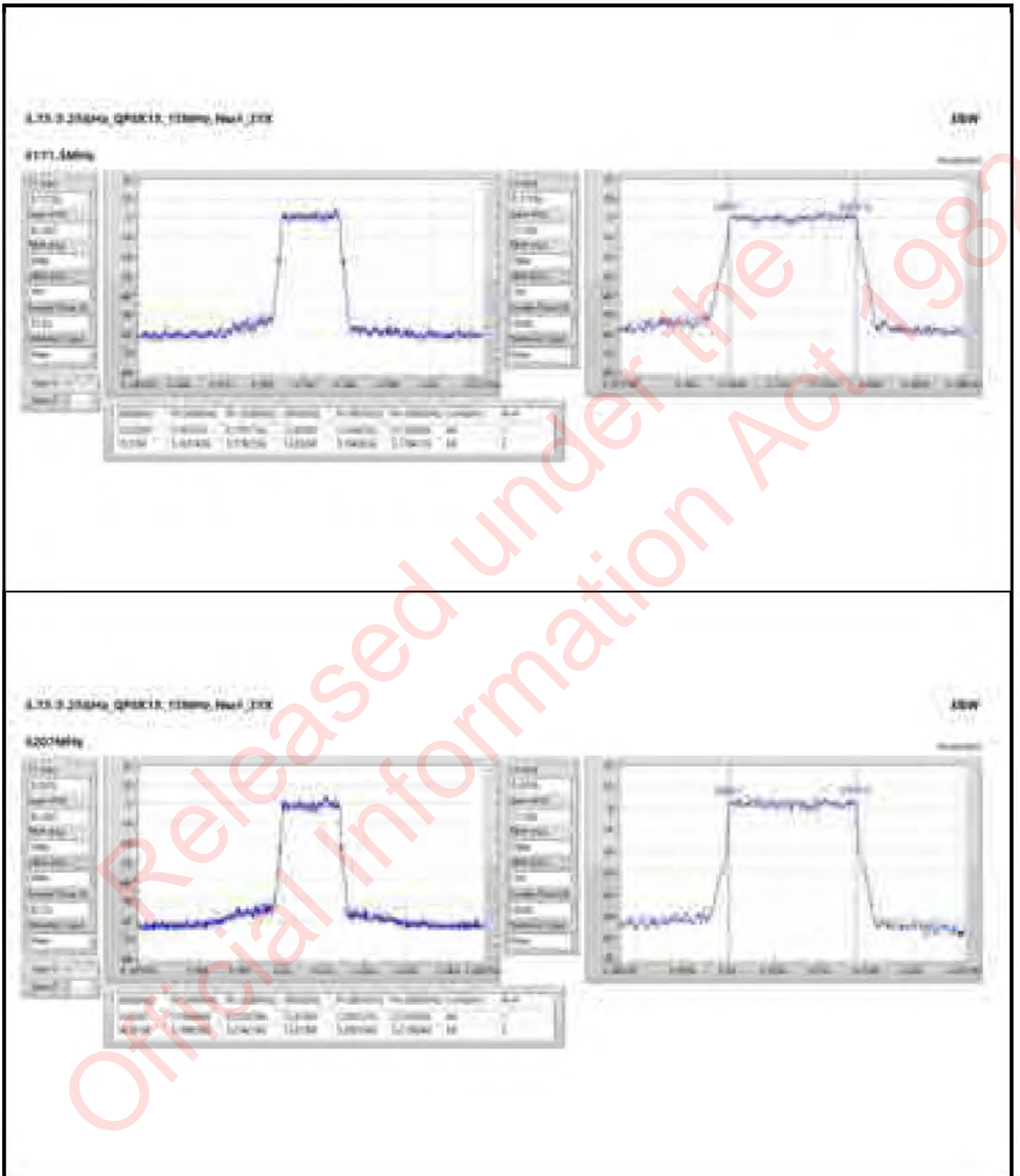
| Mode                  | Result | Limit (Hz) | Port 1-N dB (Hz) | Port 1-OBW (Hz) | Port 2-N dB (Hz) | Port 2-OBW (Hz) |
|-----------------------|--------|------------|------------------|-----------------|------------------|-----------------|
| QPSK5_5MHz_Nss1_2TX   | -      | -          | -                | -               | -                | -               |
| 5166.5MHz             | Pass   | Inf        | 5.005M           | 4.606M          | 4.895M           | 4.607M          |
| 5207MHz               | Pass   | Inf        | 4.758M           | 4.6M            | 5.06M            | 4.575M          |
| 5247.5MHz             | Pass   | Inf        | 4.854M           | 4.593M          | 4.881M           | 4.593M          |
| QPSK10_10MHz_Nss1_2TX | -      | -          | -                | -               | -                | -               |
| 5169MHz               | Pass   | Inf        | 9.9M             | 9.228M          | 9.983M           | 9.184M          |
| 5207MHz               | Pass   | Inf        | 9.79M            | 9.213M          | 9.928M           | 9.203M          |
| 5245MHz               | Pass   | Inf        | 9.983M           | 9.206M          | 9.845M           | 9.208M          |
| QPSK15_15MHz_Nss1_2TX | -      | -          | -                | -               | -                | -               |
| 5171.5MHz             | Pass   | Inf        | 15.263M          | 13.832M         | 15.51M           | 13.832M         |
| 5207MHz               | Pass   | Inf        | 14.52M           | 13.815M         | 14.561M          | 13.815M         |
| 5242.5MHz             | Pass   | Inf        | 14.479M          | 13.764M         | 14.561M          | 13.772M         |
| QPSK20_20MHz_Nss1_2TX | -      | -          | -                | -               | -                | -               |
| 5174MHz               | Pass   | Inf        | 20.075M          | 18.385M         | 19.8M            | 18.458M         |
| 5207MHz               | Pass   | Inf        | 19.085M          | 18.506M         | 19.47M           | 18.525M         |
| 5240MHz               | Pass   | Inf        | 19.745M          | 18.478M         | 19.8M            | 18.372M         |
| QPSK30_30MHz_Nss1_2TX | -      | -          | -                | -               | -                | -               |
| 5179MHz               | Pass   | Inf        | 30.608M          | 27.66M          | 29.7M            | 27.715M         |
| 5207MHz               | Pass   | Inf        | 29.865M          | 27.643M         | 30.36M           | 27.666M         |
| 5235MHz               | Pass   | Inf        | 28.463M          | 27.616M         | 29.948M          | 27.591M         |
| QPSK40_40MHz_Nss1_2TX | -      | -          | -                | -               | -                | -               |
| 5184MHz               | Pass   | Inf        | 38.94M           | 37.051M         | 39.16M           | 36.864M         |
| 5207MHz               | Pass   | Inf        | 38.61M           | 36.799M         | 39.05M           | 36.777M         |
| 5230MHz               | Pass   | Inf        | 38.83M           | 36.829M         | 39.05M           | 36.877M         |

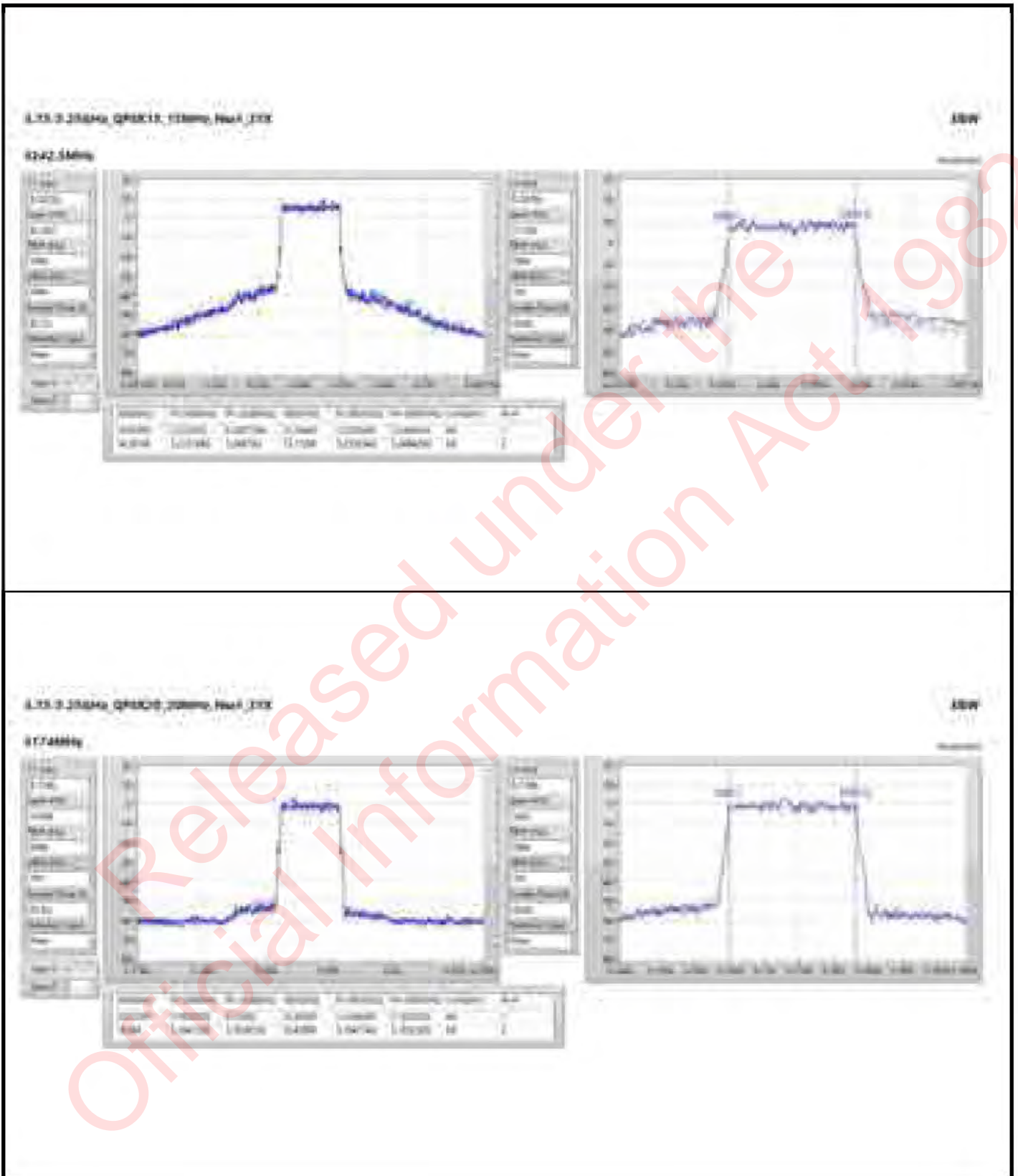
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band  
 Port X-OBW = Port X 99% occupied bandwidth

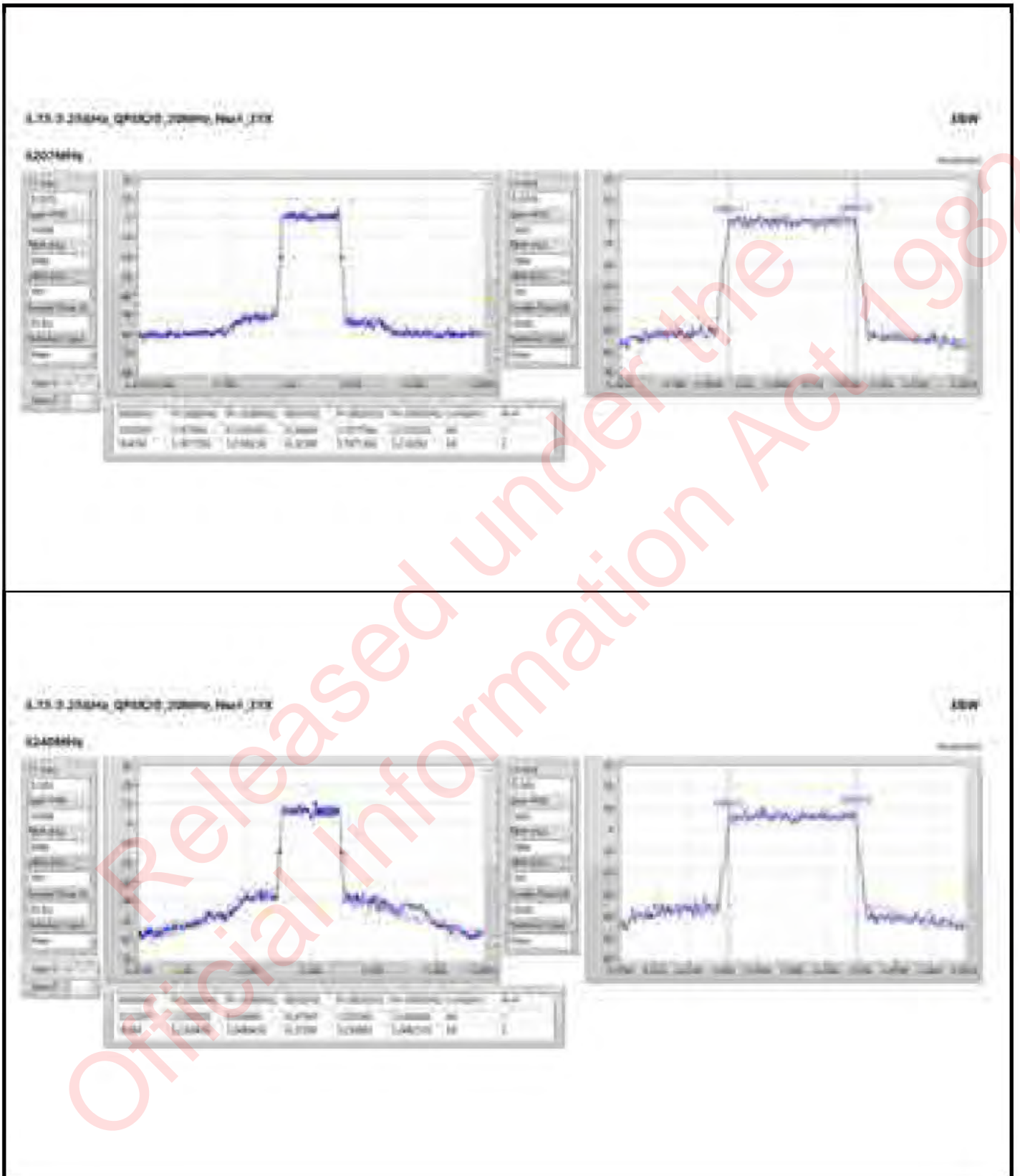


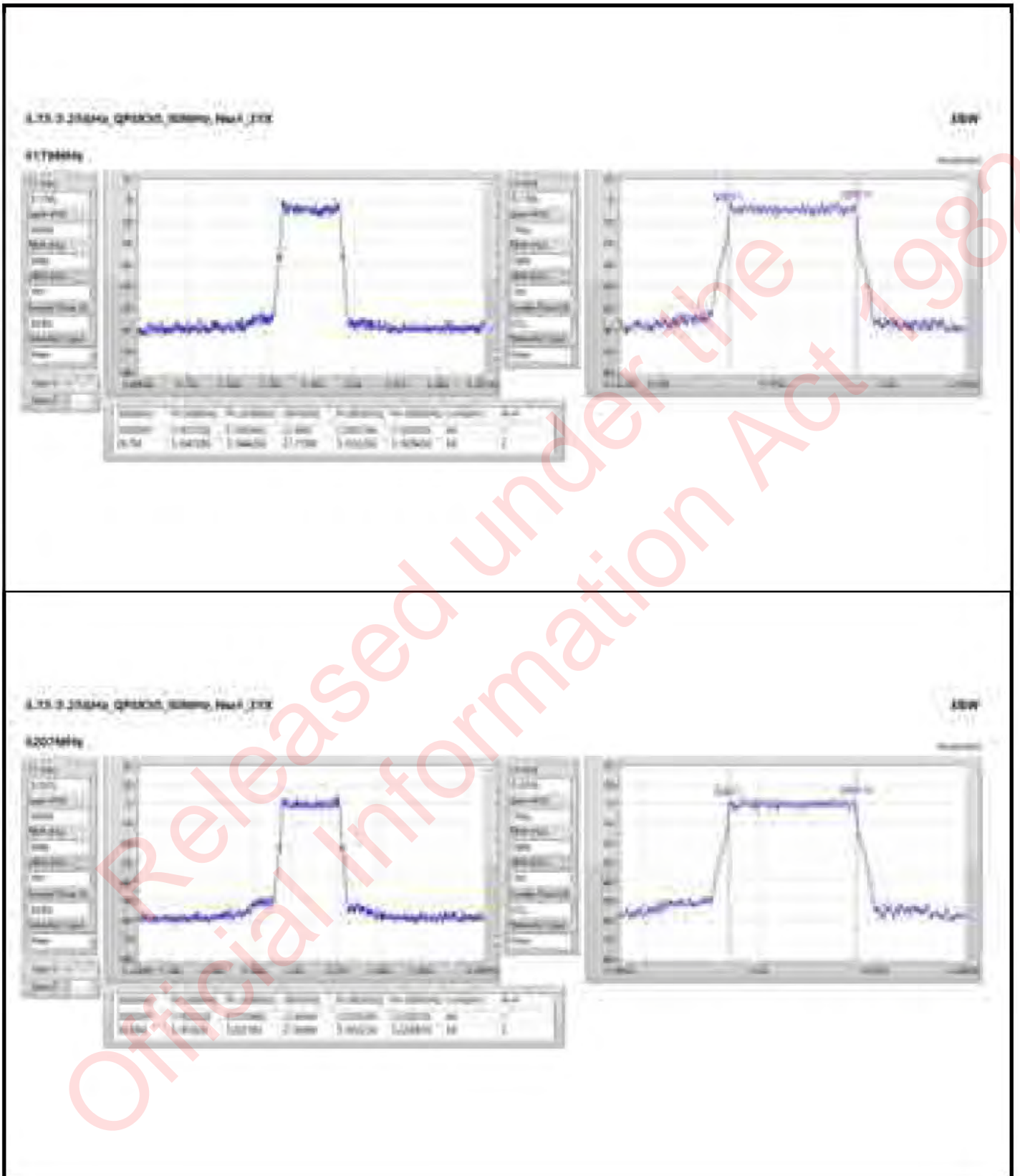


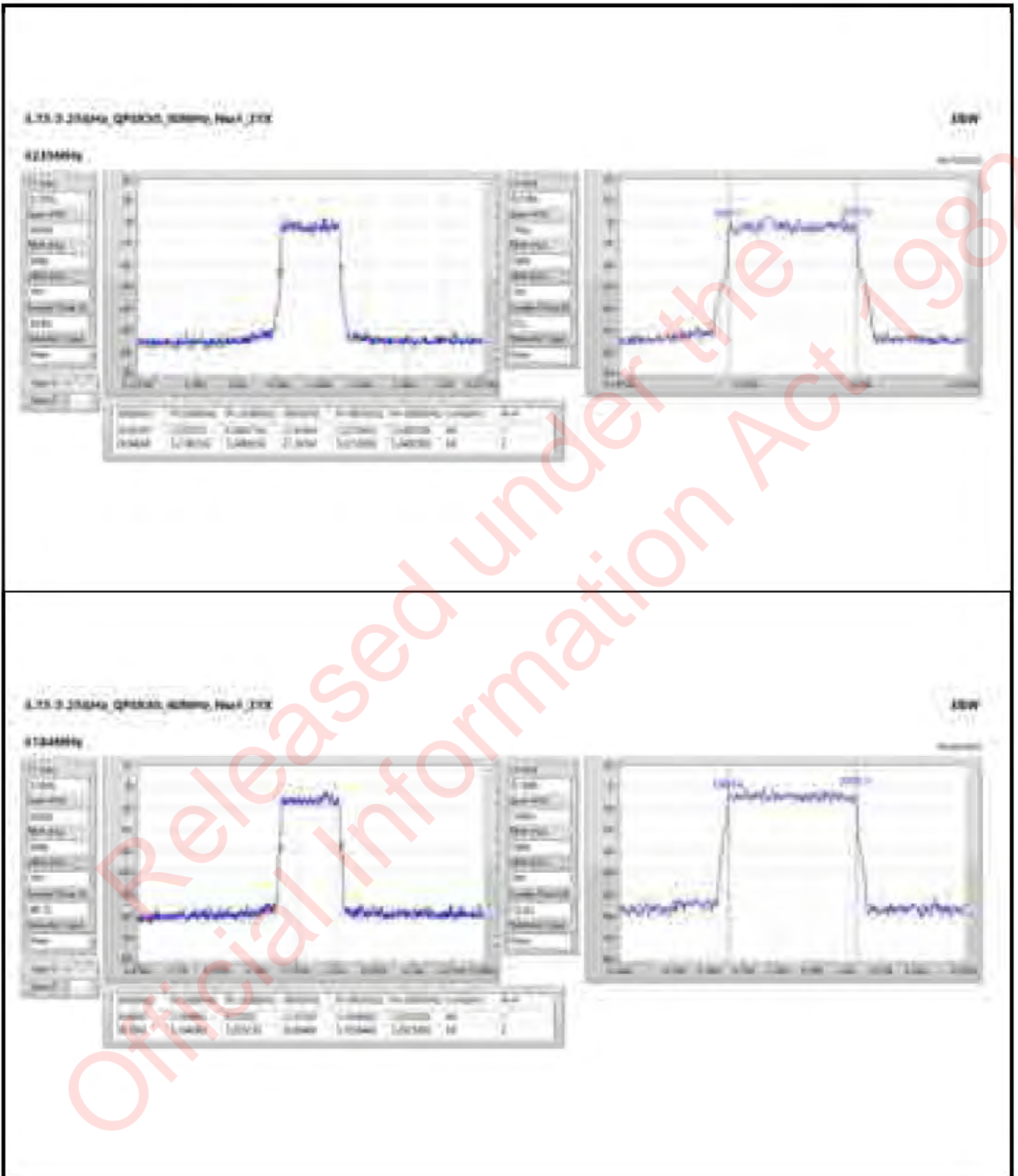


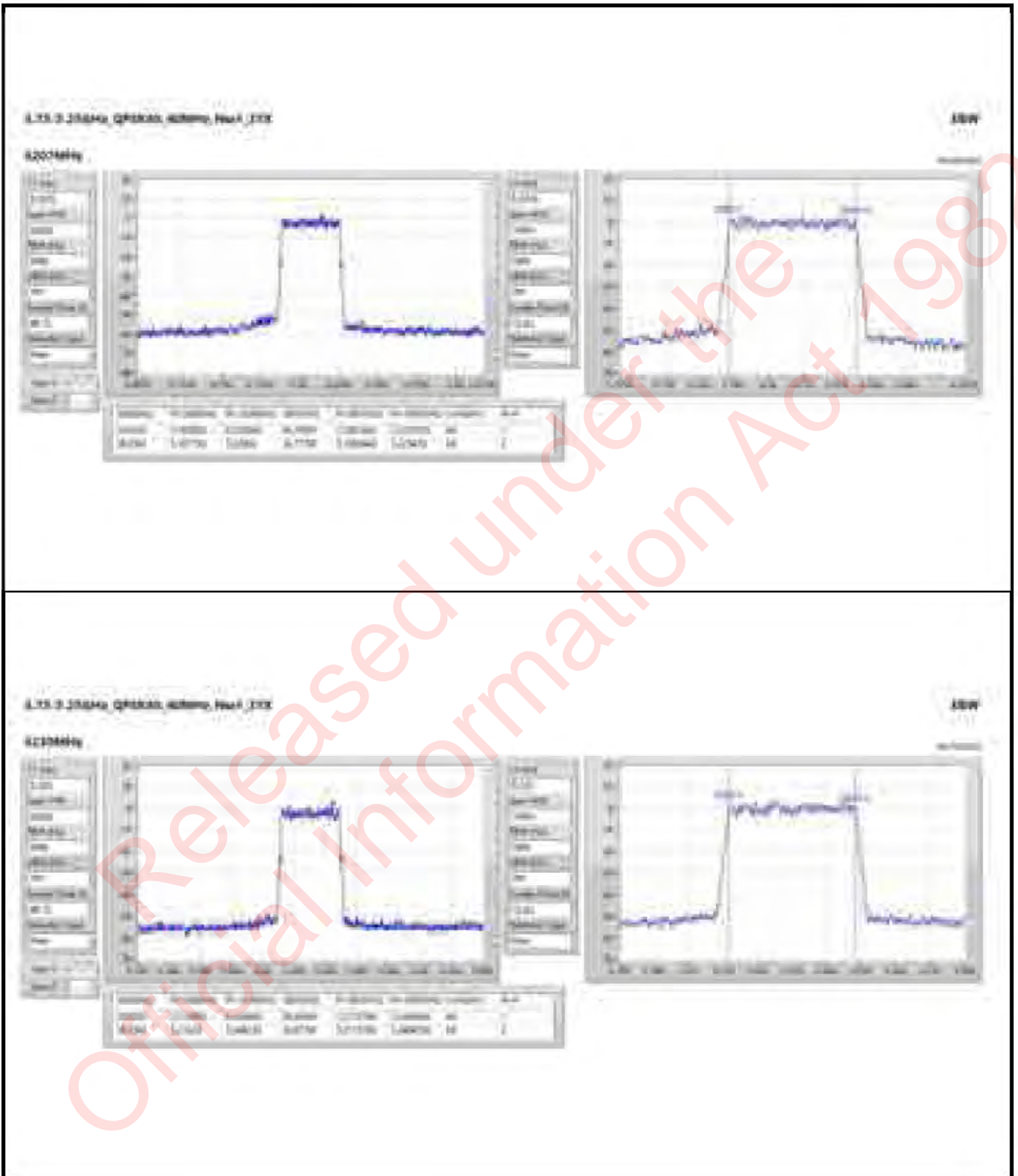














Summary

| Mode                     | Max-N dB (Hz) | Max-OBW (Hz) | ITU-Code | Min-N dB (Hz) | Min-OBW (Hz) |
|--------------------------|---------------|--------------|----------|---------------|--------------|
| 5.15-5.25GHz             | -             | -            | -        | -             | -            |
| QPSK40+40_80MHz_Nss1_2TX | 85.36M        | 82.635M      | 82M6G7D  | 79.42M        | 76.633M      |

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Max-OBW = Maximum 99% occupied bandwidth;  
Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Min-OBW = Minimum 99% occupied bandwidth

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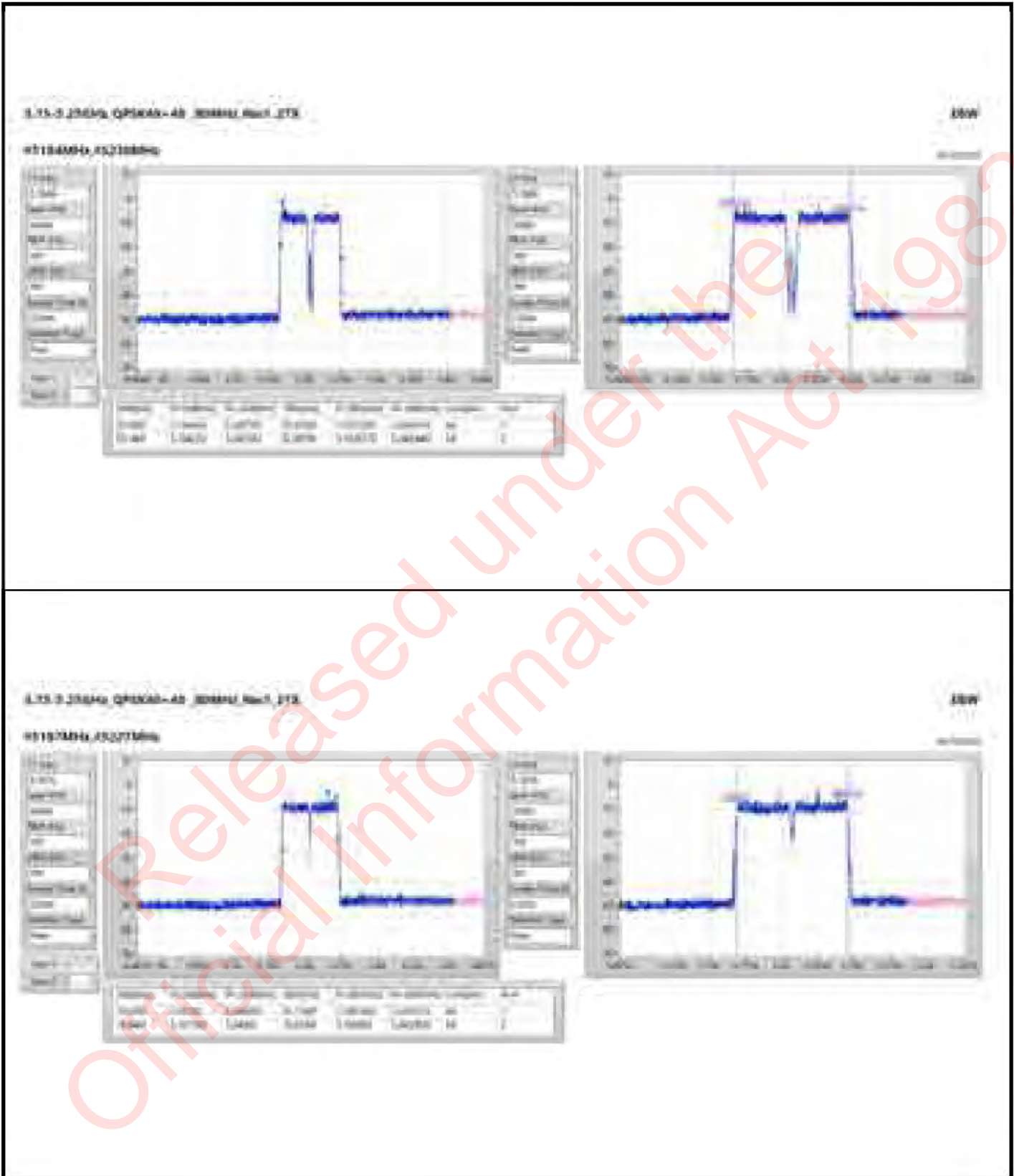


Result

| Mode                     | Result | Limit (Hz) | Port 1-N dB (Hz) | Port 1-OBW (Hz) | Port 2-N dB (Hz) | Port 2-OBW (Hz) |
|--------------------------|--------|------------|------------------|-----------------|------------------|-----------------|
| QPSK40+40_80MHz_Nss1_2TX | -      | -          | -                | -               | -                | -               |
| #5184MHz,#5230MHz        | Pass   | Inf        | 85.36M           | 82.635M         | 85.14M           | 82.607M         |
| #5187MHz,#5227MHz        | Pass   | Inf        | 79.42M           | 76.716M         | 79.64M           | 76.633M         |

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band  
Port X-OBW = Port X 99% occupied bandwidth

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Summary

| Mode                  | Total Power (dBm) | Total Power (W) |
|-----------------------|-------------------|-----------------|
| 5.15-5.25GHz          | -                 | -               |
| QPSK5_5MHz_Nss1_2TX   | 21.10             | 0.12882         |
| QPSK10_10MHz_Nss1_2TX | 24.07             | 0.25527         |
| QPSK15_15MHz_Nss1_2TX | 24.22             | 0.26424         |
| QPSK20_20MHz_Nss1_2TX | 23.81             | 0.24044         |
| QPSK30_30MHz_Nss1_2TX | 17.04             | 0.05058         |
| QPSK40_40MHz_Nss1_2TX | 16.65             | 0.04624         |

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Result

| Mode                  | Result | DG (dBi) | Port 1 (dBm) | Port 2 (dBm) | Total Power (dBm) | Power Limit (dBm) |
|-----------------------|--------|----------|--------------|--------------|-------------------|-------------------|
| QPSK5_5MHz_Nss1_2TX   | -      | -        | -            | -            | -                 | -                 |
| 5166.5MHz             | Pass   | 26.00    | 17.43        | 17.21        | 20.33             | 27.00             |
| 5207MHz               | Pass   | 26.00    | 18.12        | 18.05        | 21.10             | 27.00             |
| 5247.5MHz             | Pass   | 26.00    | 18.33        | 17.70        | 21.04             | 27.00             |
| QPSK10_10MHz_Nss1_2TX | -      | -        | -            | -            | -                 | -                 |
| 5169MHz               | Pass   | 26.00    | 13.85        | 14.15        | 17.01             | 27.00             |
| 5207MHz               | Pass   | 26.00    | 16.01        | 15.94        | 18.99             | 27.00             |
| 5245MHz               | Pass   | 26.00    | 21.22        | 20.89        | 24.07             | 27.00             |
| QPSK15_15MHz_Nss1_2TX | -      | -        | -            | -            | -                 | -                 |
| 5171.5MHz             | Pass   | 26.00    | 13.12        | 13.09        | 16.12             | 27.00             |
| 5207MHz               | Pass   | 26.00    | 15.06        | 15.00        | 18.04             | 27.00             |
| 5242.5MHz             | Pass   | 26.00    | 21.41        | 20.99        | 24.22             | 27.00             |
| QPSK20_20MHz_Nss1_2TX | -      | -        | -            | -            | -                 | -                 |
| 5174MHz               | Pass   | 26.00    | 12.90        | 12.71        | 15.82             | 27.00             |
| 5207MHz               | Pass   | 26.00    | 14.79        | 14.60        | 17.71             | 27.00             |
| 5240MHz               | Pass   | 26.00    | 20.91        | 20.68        | 23.81             | 27.00             |
| QPSK30_30MHz_Nss1_2TX | -      | -        | -            | -            | -                 | -                 |
| 5179MHz               | Pass   | 26.00    | 9.33         | 9.97         | 12.67             | 27.00             |
| 5207MHz               | Pass   | 26.00    | 14.08        | 13.97        | 17.04             | 27.00             |
| 5235MHz               | Pass   | 26.00    | 12.68        | 12.53        | 15.62             | 27.00             |
| QPSK40_40MHz_Nss1_2TX | -      | -        | -            | -            | -                 | -                 |
| 5184MHz               | Pass   | 26.00    | 9.00         | 8.75         | 11.89             | 27.00             |
| 5207MHz               | Pass   | 26.00    | 12.90        | 12.61        | 15.77             | 27.00             |
| 5230MHz               | Pass   | 26.00    | 13.79        | 13.49        | 16.65             | 27.00             |

DG = Directional Gain; Port X = Port X output power  
Inf = There's no restriction for the limit.



Summary

| Mode                     | Total Power (dBm) | Total Power (W) |
|--------------------------|-------------------|-----------------|
| 5.15-5.25GHz             | -                 | -               |
| QPSK40+40_80MHz_Nss1_2TX | 7.07              | 0.00509         |

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Result

| Mode                     | Result | DG (dBi) | Port 1 (dBm) | Port 2 (dBm) | Total Power (dBm) | Power Limit (dBm) |
|--------------------------|--------|----------|--------------|--------------|-------------------|-------------------|
| QPSK40+40_80MHz_Nss1_2TX | -      | -        | -            | -            | -                 | -                 |
| #5184MHz,#5230MHz        | Pass   | 26.00    | 4.45         | 3.62         | 7.07              | 27.00             |
| #5187MHz,#5227MHz        | Pass   | 26.00    | 3.42         | 2.68         | 6.08              | 27.00             |

DG = Directional Gain; Port X = Port X output power  
Inf = There's no restriction for the limit.

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Summary

| Mode                  | PD<br>(dBm/RBW) |
|-----------------------|-----------------|
| 5.15-5.25GHz          | -               |
| QPSK5_5MHz_Nss1_2TX   | 13.50           |
| QPSK10_10MHz_Nss1_2TX | 13.81           |
| QPSK15_15MHz_Nss1_2TX | 12.40           |
| QPSK20_20MHz_Nss1_2TX | 10.68           |
| QPSK30_30MHz_Nss1_2TX | 2.48            |
| QPSK40_40MHz_Nss1_2TX | 1.01            |

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

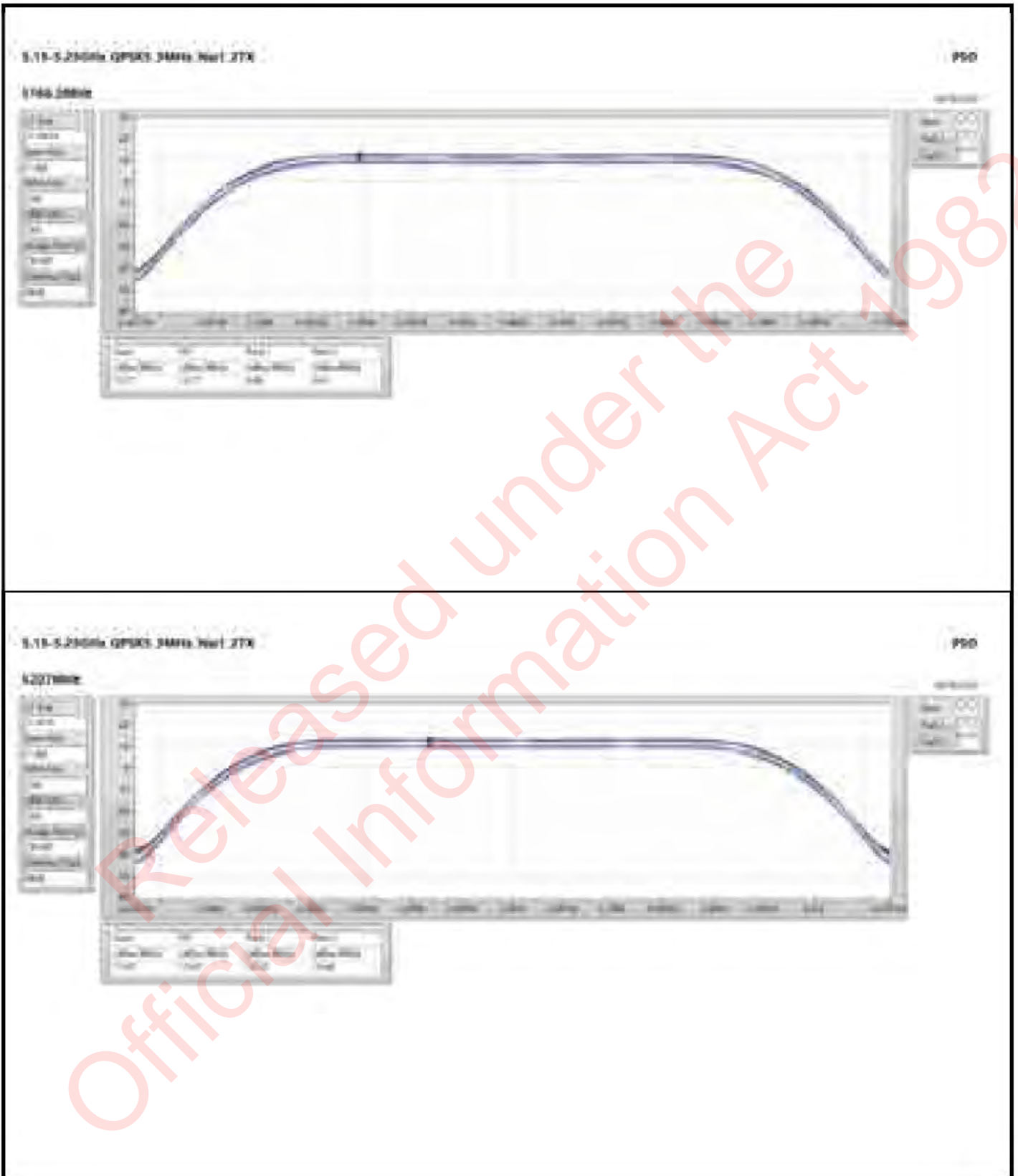
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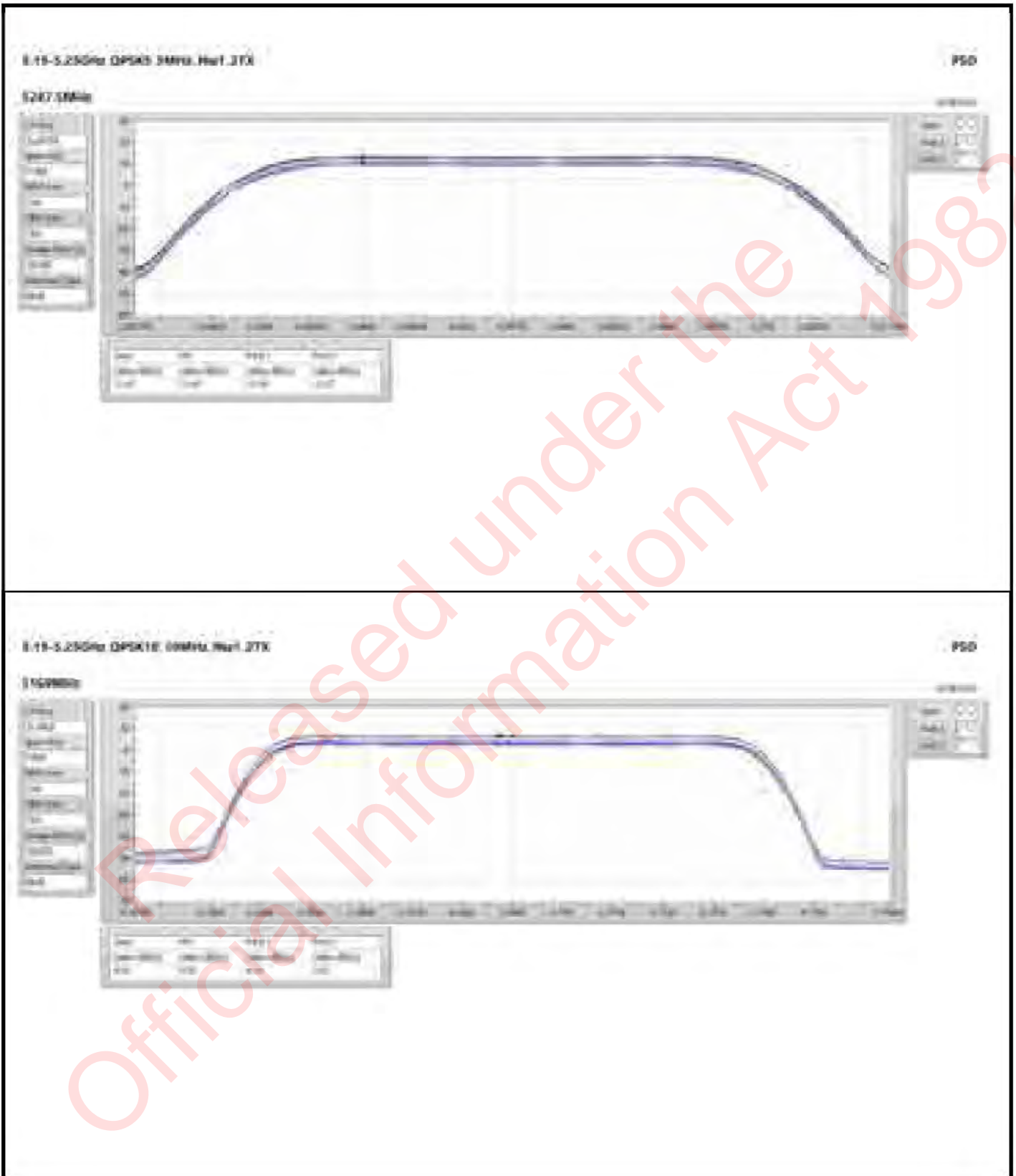


Result

| Mode                  | Result | DG (dBi) | Port 1 (dBm/RBW) | Port 2 (dBm/RBW) | PD (dBm/RBW) | PD Limit (dBm/RBW) |
|-----------------------|--------|----------|------------------|------------------|--------------|--------------------|
| QPSK5_5MHz_Nss1_2TX   | -      | -        | -                | -                | -            | -                  |
| 5166.5MHz             | Pass   | 26.00    | 9.88             | 9.61             | 12.71        | 14.00              |
| 5207MHz               | Pass   | 26.00    | 10.52            | 10.46            | 13.50        | 14.00              |
| 5247.5MHz             | Pass   | 26.00    | 10.74            | 10.27            | 13.47        | 14.00              |
| QPSK10_10MHz_Nss1_2TX | -      | -        | -                | -                | -            | -                  |
| 5169MHz               | Pass   | 26.00    | 4.14             | 3.82             | 6.95         | 14.00              |
| 5207MHz               | Pass   | 26.00    | 5.81             | 5.67             | 8.73         | 14.00              |
| 5245MHz               | Pass   | 26.00    | 11.02            | 10.60            | 13.81        | 14.00              |
| QPSK15_15MHz_Nss1_2TX | -      | -        | -                | -                | -            | -                  |
| 5171.5MHz             | Pass   | 26.00    | 1.73             | 1.36             | 4.55         | 14.00              |
| 5207MHz               | Pass   | 26.00    | 3.49             | 3.32             | 6.41         | 14.00              |
| 5242.5MHz             | Pass   | 26.00    | 9.67             | 9.24             | 12.40        | 14.00              |
| QPSK20_20MHz_Nss1_2TX | -      | -        | -                | -                | -            | -                  |
| 5174MHz               | Pass   | 26.00    | -0.02            | -0.42            | 2.71         | 14.00              |
| 5207MHz               | Pass   | 26.00    | 1.78             | 1.57             | 4.64         | 14.00              |
| 5240MHz               | Pass   | 26.00    | 7.89             | 7.62             | 10.68        | 14.00              |
| QPSK30_30MHz_Nss1_2TX | -      | -        | -                | -                | -            | -                  |
| 5179MHz               | Pass   | 26.00    | -3.89            | -4.22            | -1.20        | 14.00              |
| 5207MHz               | Pass   | 26.00    | -0.12            | -0.39            | 2.48         | 14.00              |
| 5235MHz               | Pass   | 26.00    | -1.84            | -1.89            | 1.02         | 14.00              |
| QPSK40_40MHz_Nss1_2TX | -      | -        | -                | -                | -            | -                  |
| 5184MHz               | Pass   | 26.00    | -6.11            | -6.68            | -3.44        | 14.00              |
| 5207MHz               | Pass   | 26.00    | -2.31            | -2.75            | 0.49         | 14.00              |
| 5230MHz               | Pass   | 26.00    | -1.84            | -2.00            | 1.01         | 14.00              |

DG = Directional Gain; RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;  
 PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;  
 Inf = There's no restriction for the limit.

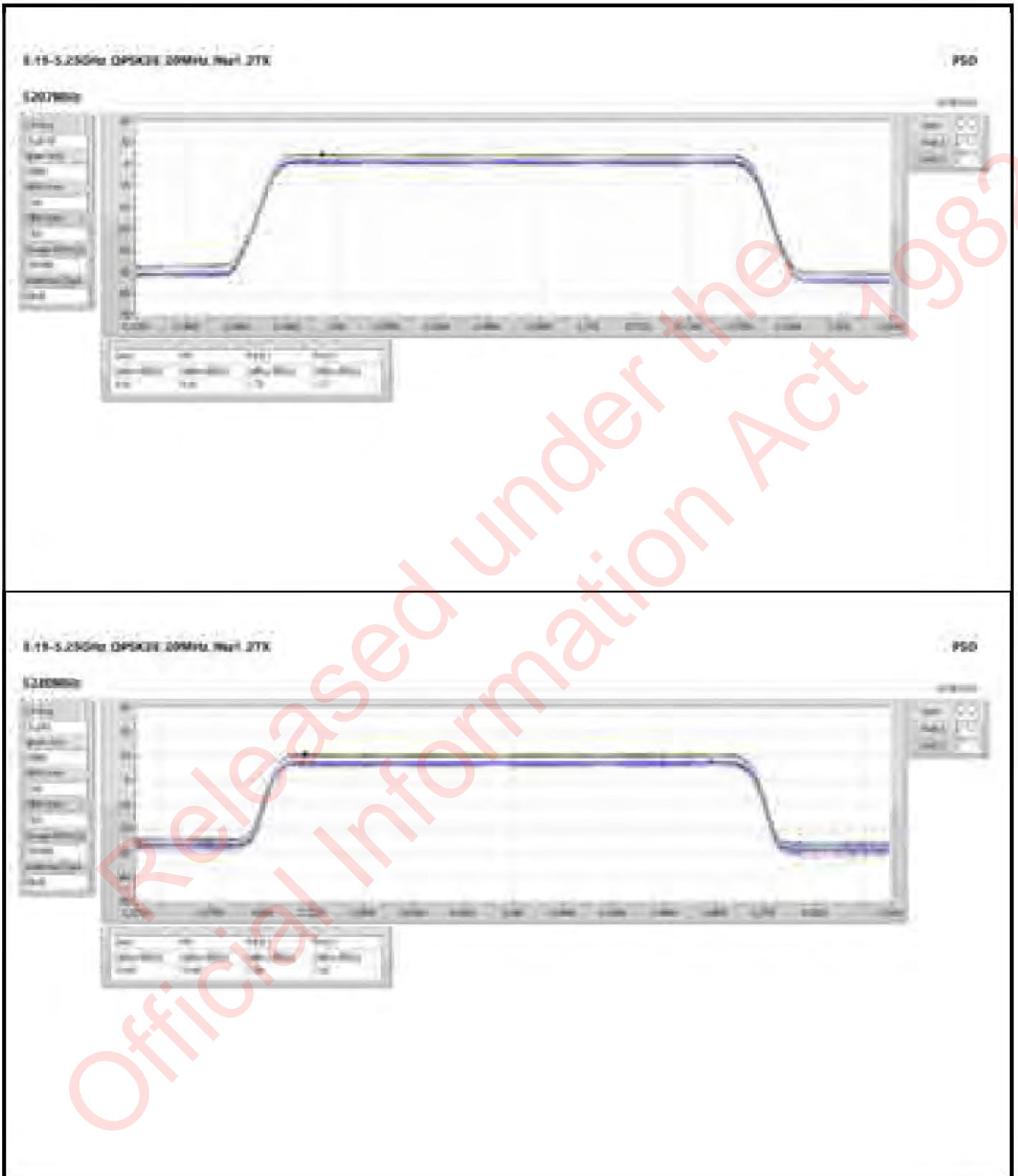


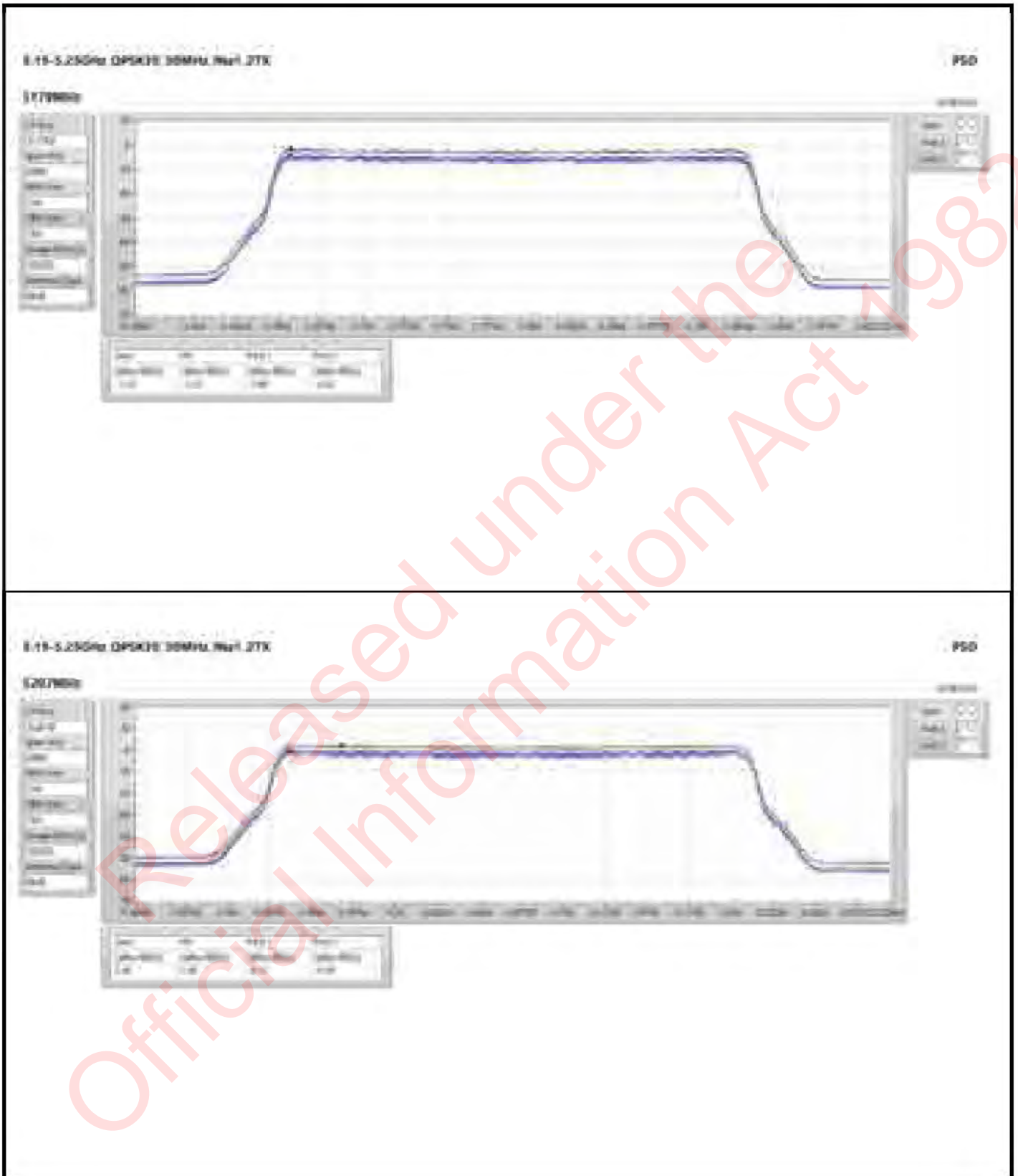


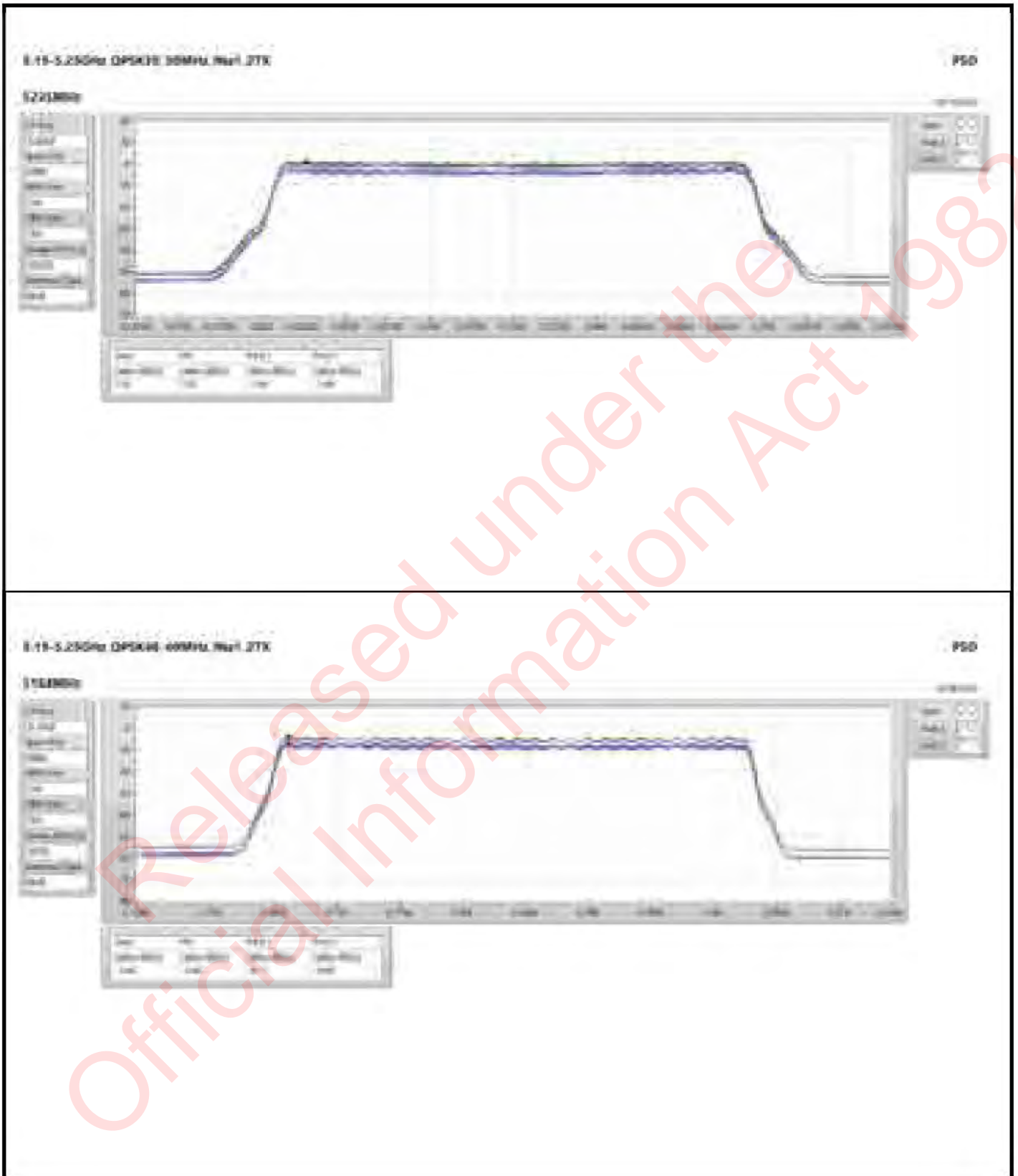
















Summary

| Mode                     | PD<br>(dBm/RBW) |
|--------------------------|-----------------|
| 5.15-5.25GHz             | -               |
| QPSK40+40_80MHz_Nss1_2TX | -12.71          |

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

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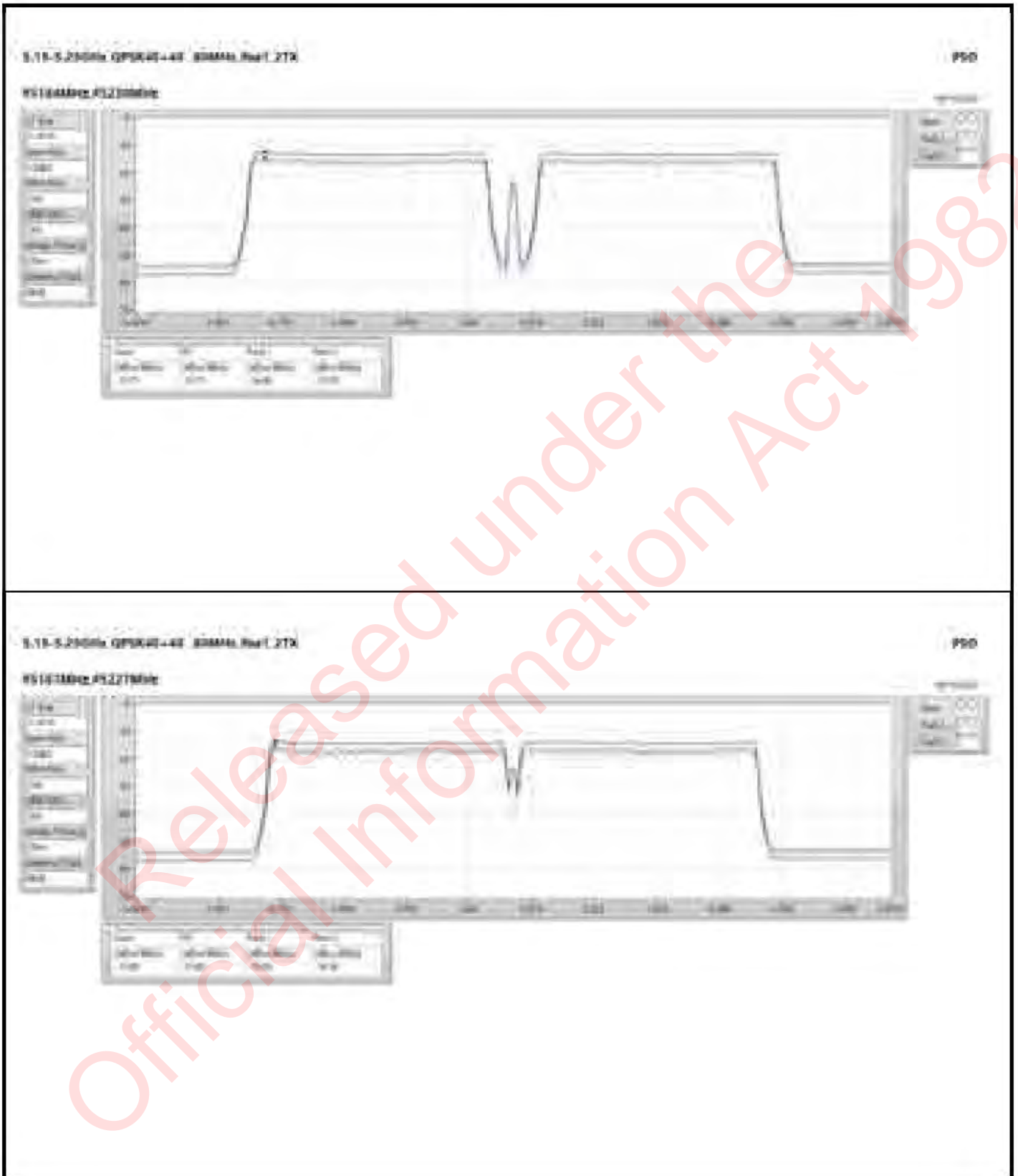


Result

| Mode                     | Result | DG (dBi) | Port 1 (dBm/RBW) | Port 2 (dBm/RBW) | PD (dBm/RBW) | PD Limit (dBm/RBW) |
|--------------------------|--------|----------|------------------|------------------|--------------|--------------------|
| QPSK40+40_80MHz_Nss1_2TX | -      | -        | -                | -                | -            | -                  |
| #5184MHz,#5230MHz        | Pass   | 26.00    | -14.66           | -15.78           | -12.71       | 14.00              |
| #5187MHz,#5227MHz        | Pass   | 26.00    | -15.94           | -16.54           | -13.89       | 14.00              |

DG = Directional Gain; RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;  
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;  
Inf = There's no restriction for the limit.

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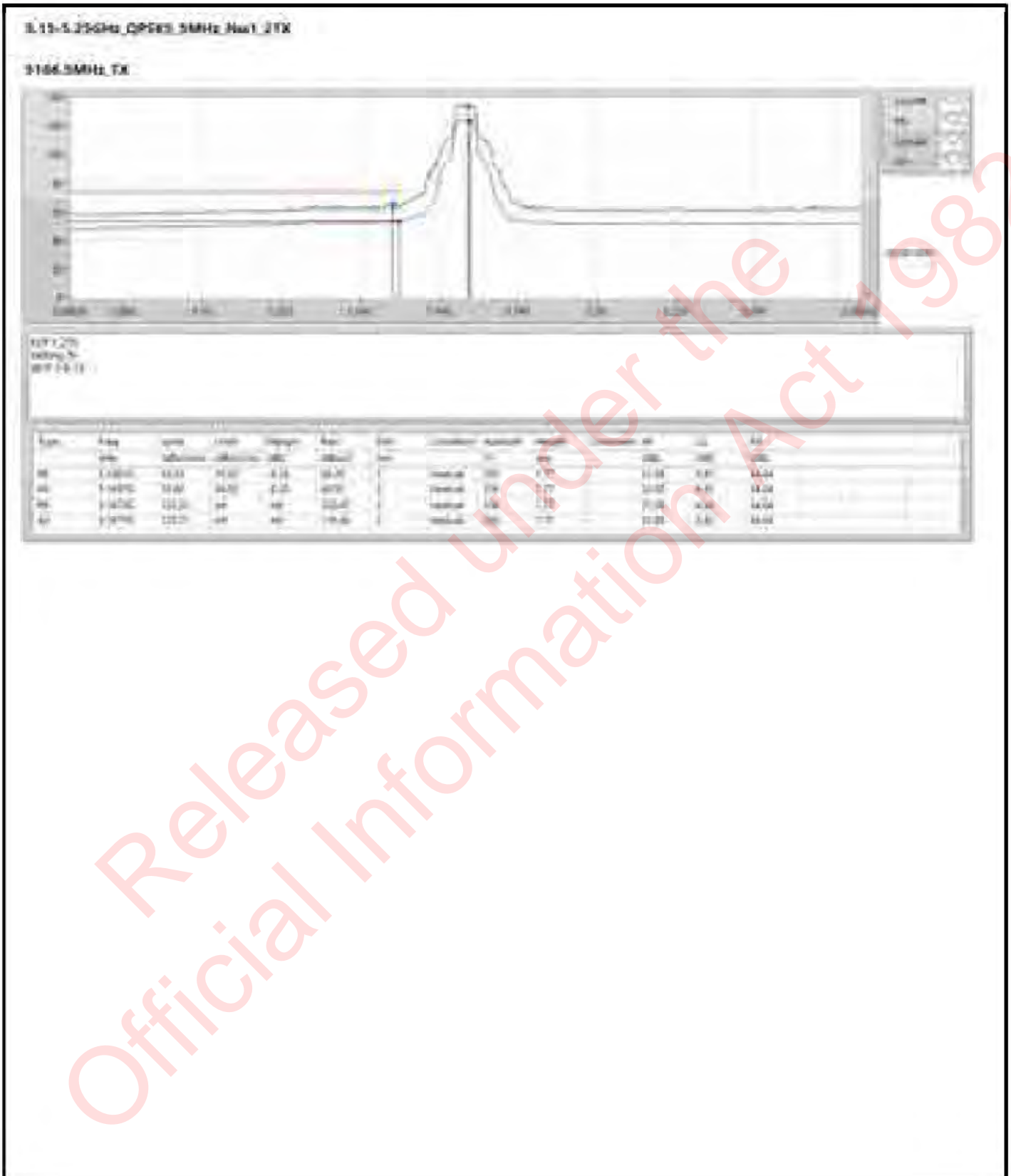




Summary

| Mode                  | Result | Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Dist (m) | Condition  | Azimuth (°) | Height (m) | Comments |
|-----------------------|--------|------|-----------|----------------|----------------|-------------|----------|------------|-------------|------------|----------|
| 5.15-5.25GHz          | -      | -    | -         | -              | -              | -           | -        | -          | -           | -          | -        |
| QPSK10_10MHz_Nss1_2TX | Pass   | AV   | 5.149G    | 53.94          | 54.00          | -0.06       | 3        | Horizontal | 356         | 1.80       | -        |

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Summary

| Mode                     | Result | Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Dist (m) | Condition | Azimuth (°) | Height (m) | Comments |
|--------------------------|--------|------|-----------|----------------|----------------|-------------|----------|-----------|-------------|------------|----------|
| 5.15-5.25GHz             | -      | -    | -         | -              | -              | -           | -        | -         | -           | -          | -        |
| QPSK40+40_80MHz_Nss1_2TX | Pass   | AV   | 5.129G    | 53.97          | 54.00          | -0.03       | 3        | Vertical  | 360         | 1.80       | -        |

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# 1. Photographs of Radiated Emissions Test Configuration

Test Configuration: Above 1GHz

FRONT VIEW



REAR VIEW





## 2. Photographs of RF Conducted Test Configuration

FRONT VIEW



—THE END—