

Test Report

FCC TAS COMPLIANCE

Product Name : Notebook PC
Brand Name : ASUS
Model No. : S5406M
FCC ID : MSQAX211D2

Applicant : ASUSTeK Computer, Inc
Address : 1F, No. 15, Lide Rd, Beitou, Taipei, 112 Taiwan

Date of Receipt : 2023/12/27
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Revision History

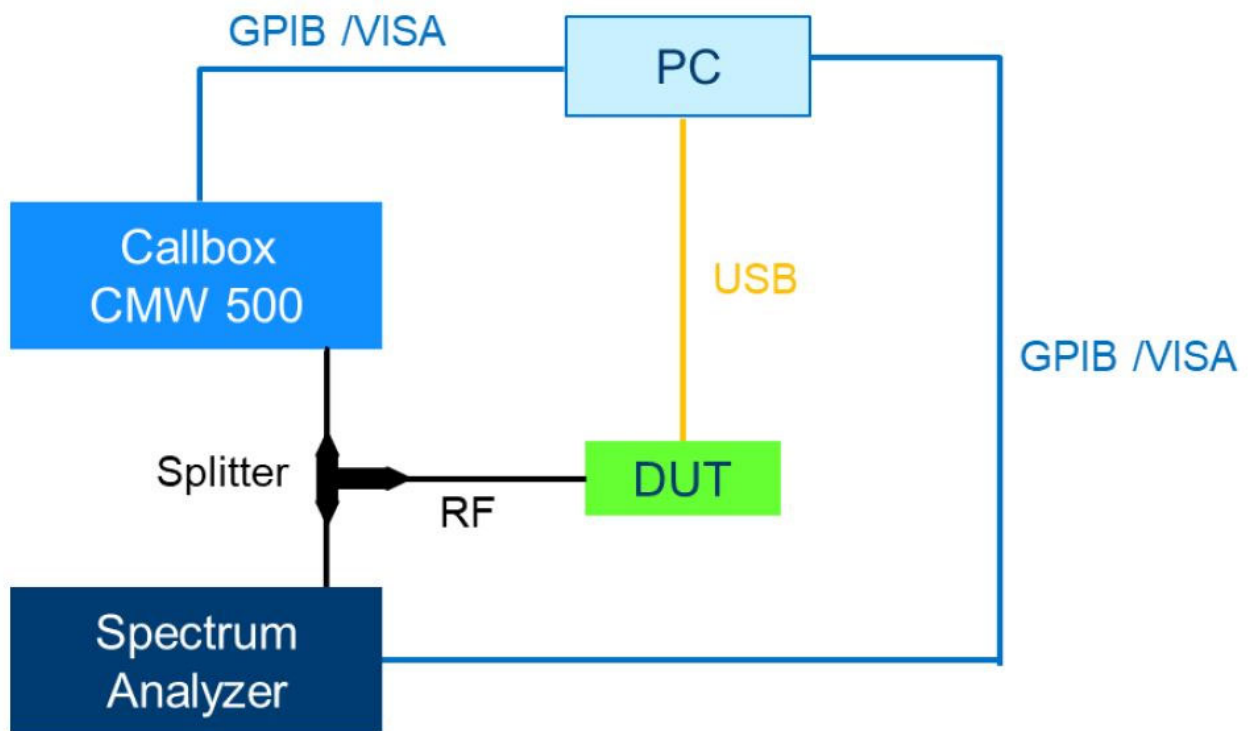
| Report No. | Version | Description | Issued Date |
|---------------------|---------|-------------------------|-------------|
| 23C0893R-SANAV07S-2 | V1.0 | Initial issue of report | 2024/02/22 |

1. Test Setup

The conducted power measurement test setup is described in the following and illustrated in Figure A.1.

- The DUT which AX211 WiFi module is installed inside Notebook PC from ASUS model S5406M.
- A control PC is used to configure the Call Box as an access point to manage the uplink and downlink data traffic.
- Uplink signal power is measured with the Spectrum Analyzer and record by the PC with a maximum time resolution of 0.3333 msec.
- Uplink signal from the module is fed through a 3 dB Power Splitter, which delivers an equal amount of signal to the Spectrum Analyzer and the Call Box. The Splitter has high isolation between the Spectrum Analyzer and the Call Box.

Figure.1 – Validation using conducted power measurement test setup.



2. Test Equipment List

| Instrument | Manufacturer | Model No. | Serial No. | Last Calibration | Next Calibration |
|-------------------------------|--------------|-----------|------------|------------------|------------------|
| Universal Radio Communication | R&S | CMW500 | 157304 | N/A | N/A |
| Spectrum Analyzer | FSV40 | 101420 | R&S | 2023/03/27 | 2024/03/26 |

3. Test Results

3.1. SAR Power in Bios Table as per SAR assessment

| Chain A | | Chain B | |
|---------------------|-----------------------|---------------------|-----------------------|
| IEEE 802.11g CH6 | IEEE 802.11a CH120 | IEEE 802.11g CH6 | IEEE 802.11a CH120 |
| 14.5 | 12.5 | 14.5 | 13 |

3.2. TAS Validation for 2.4 GHz Band on Channel 6

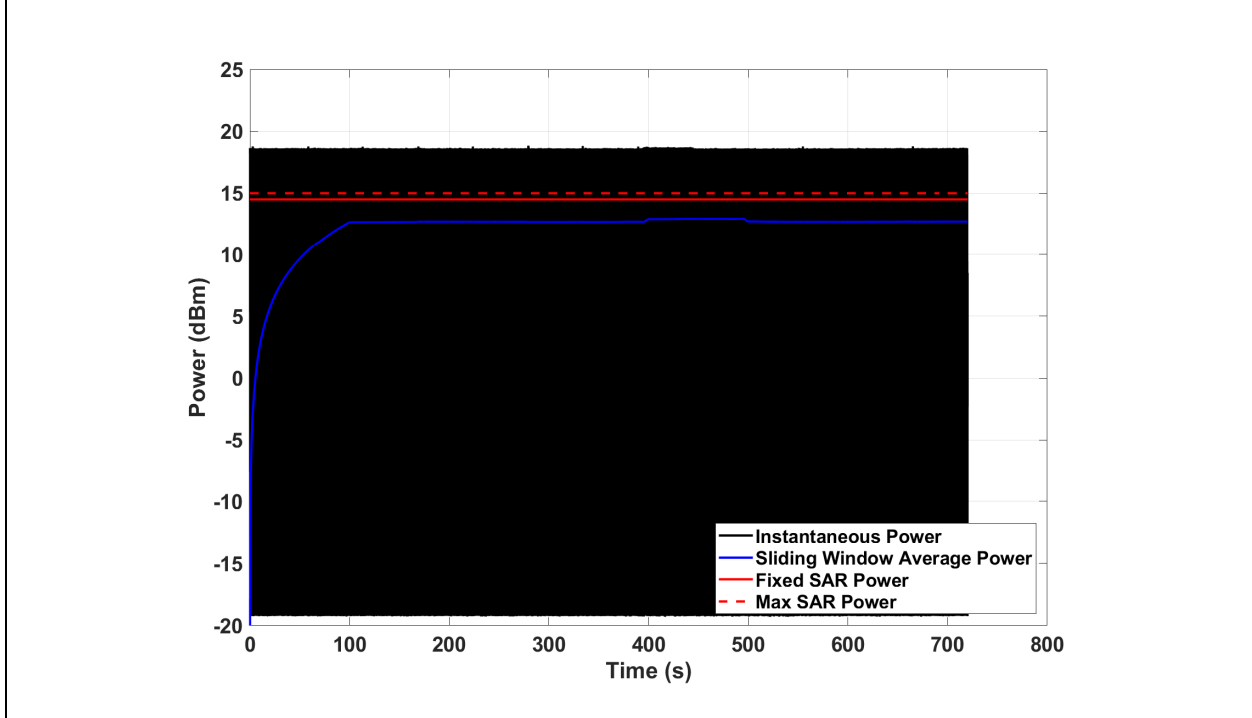
Table 1 – Test Cases for 2.4 GHz Channel 6

| Test Case # | Channel | Chain | Channel Bandwidth | Measurement Averaging Period | Measurement Time Resolution | Max Power Tune Up [dBm] | SAR Power in Bios Table [dBm] |
|-------------|---------|-------|-------------------|------------------------------|-----------------------------|-------------------------|-------------------------------|
| 1 | 6 | A | 20 MHz | 100 sec | 0.3333 msec | 21.0 | 14.5 |
| 2 | | B | 20 MHz | 100 sec | 0.3333 msec | 21.0 | 14.5 |

Results of test cases in Table 1 are shown in the following plots.

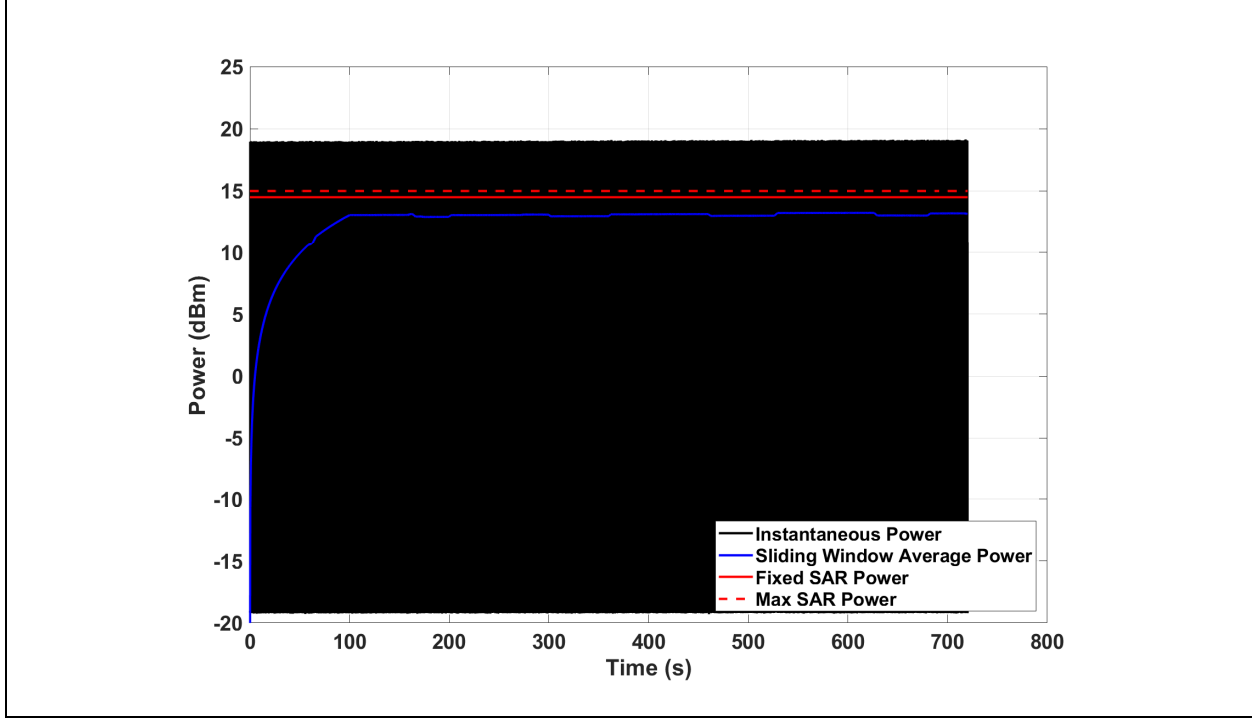
Case #1: 2.4 GHz- Ch 6 – Chain A – BW 20 MHz – Rate 12 Mbps – Averaging Period 100 sec – Tmax 720 sec

| | |
|--------------------------------|--------------------------------------|
| Max Power Tune Up [dBm] | SAR Power in Bios Table [dBm] |
| 21.0 | 14.5 |



Case #2: 2.4 GHz- Ch 6 – Chain B – BW 20 MHz – Rate 12 Mbps – Average Period 100 sec – Tmax 720 sec

| | |
|--------------------------------|--------------------------------------|
| Max Power Tune Up [dBm] | SAR Power in Bios Table [dBm] |
| 21.0 | 14.5 |



3.3. TAS Val idation for 5 GHz Band on Channel 120

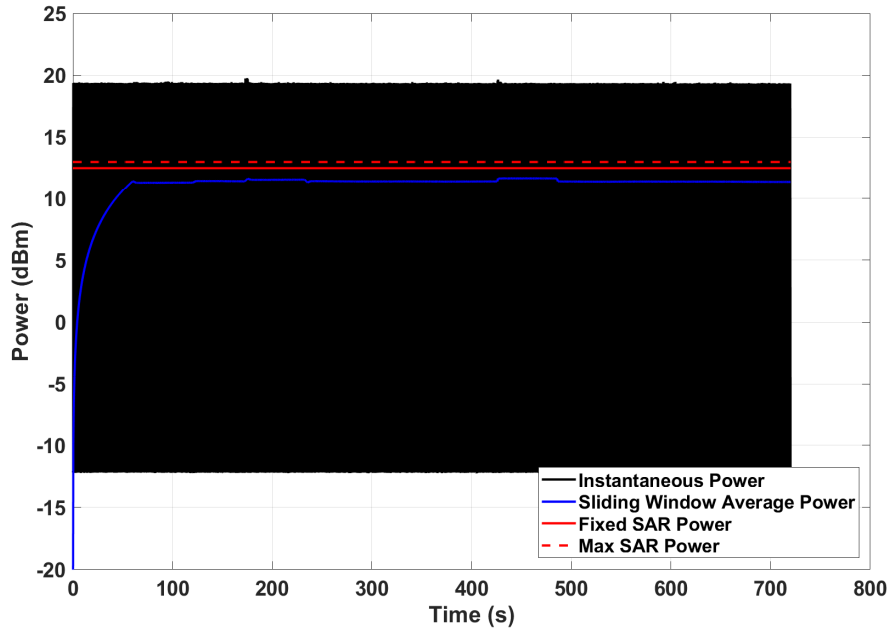
Table 2 – Test Cases for 5 GHz Channel 120

| <i>Test Case #</i> | <i>Channel</i> | <i>Chain</i> | <i>Channel Bandwidth</i> | <i>Measurement Averaging Period</i> | <i>Measurement Time Resolution</i> | <i>Max Power Tune Up [dBm]</i> | <i>SAR Power in Bios Table [dBm]</i> |
|--------------------|----------------|--------------|--------------------------|-------------------------------------|------------------------------------|--------------------------------|--------------------------------------|
| 1 | 120 | A | 20 MHz | 60 sec | 0.3333 msec | 21.0 | 12.5 |
| 2 | | B | 20 MHz | 60 sec | 0.3333 msec | 21.0 | 13 |

Results of test cases in Table 2 are shown in the following plots.

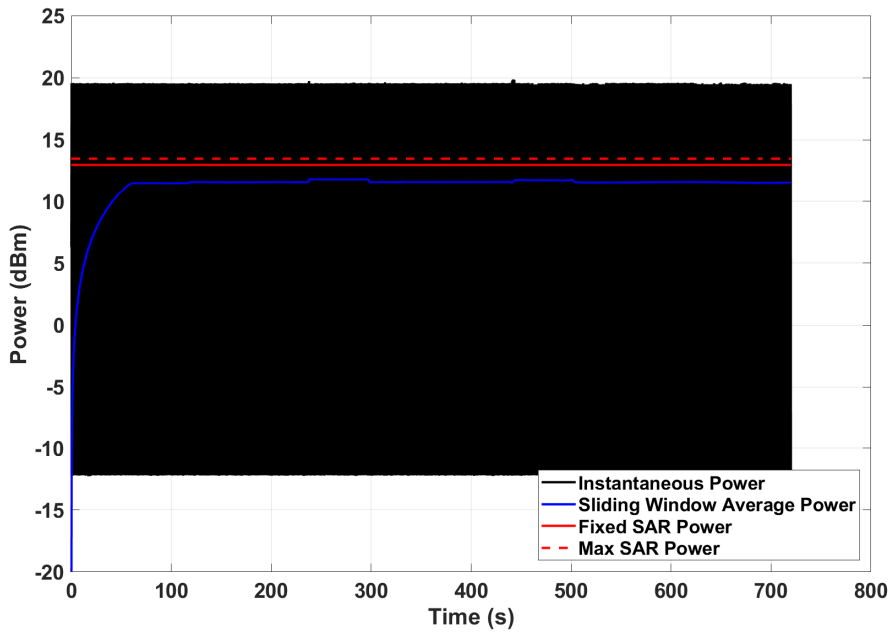
Case #1: 5 GHz- Ch 120 – Chain A – BW 20 MHz – Rate 12 Mbps – Averaging Period 60 sec – Tmax 720 sec

| | |
|--------------------------------|--------------------------------------|
| Max Power Tune Up [dBm] | SAR Power in Bios Table [dBm] |
| 21.0 | 12.5 |



Case #2: 5 GHz- Ch 120 – Chain B – BW 20 MHz – Rate 12 Mbps – Average Period 60 sec – Tmax 720 sec

| | |
|--------------------------------|--------------------------------------|
| Max Power Tune Up [dBm] | SAR Power in Bios Table [dBm] |
| 21.0 | 13 |



4. Conclusion

The TAS Intel Algorithm functionality of AX211 WiFi Module Integrated inside ASUS S5406M is tested. All test cases are compliant with SAR limit.