

Part 0 SAR Char Report



The following samples were submitted and identified on behalf of the client as:

Product Name	Qualcomm WiFi 7/BT Combo module
Brand Name	Qualcomm
Model No.	QCNCM825
Host Information	Product Type: Notebook PC Brand Name: ASUS Model Name: S5507Q, S5507QA, S5507QAD, K5507Q, V5507Q, P5507CQ All models are electrically identical, different model names are for marketing purpose.
Applicant	ASUSTeK COMPUTER INC. 1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan
FCC ID	MSQ-QCNCM825
Date of EUT Receipt	Mar. 26, 2024
Date of Test(s)	Apr. 15, 2024 ~ Apr. 21, 2024
Date of Issue	Jul. 12, 2024

In the configuration tested, the EUT complied with the standards specified above.

Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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Signed on behalf of SGS

Clerk / Kimmy Chiou	PM / Kiki Lin	Approved By / John Yeh

Date: Jul. 12, 2024

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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2403000152ES	00	Initial creation of document	Jul. 12, 2024	Kimmy Chiou	

Note:

- The mark " * " is the revised version of the report due to comments submitted by the certification.
- Variant information of model numbers is provided by the applicant, test results of this report are applicable to the sample EUT(s) received.
And are assessed as electrically identical in RF characteristics, therefore, no further assessment required for the variant(s).

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1 INTRODUCTION

Qualcomm® FastConnect™ WIFI Time Averaged SAR (TAS) operates based on a power limit obtained from this SAR and PD compliance test Note characterization report completed on a device. The power limit and other FastConnect WIFI TAS parameters produced in this characterization report must be entered into the board data file (BDF) to enable the FastConnect WIFI TAS feature.

Terminologies in this report

Plimit	The time-averaged RF power which corresponds to SAR_design_target.
Pmax	Maximum target power level
SAR_design_target:	The design target for SAR compliance. It should be less than regulatory power density limit to account for all device design related uncertainties.
SAR char	Plimit for all the technologies/bands

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2 SAR CHARACTERIZATION

The design target (denoted as RFE_xtarget) for RF exposure compliance (1g SAR or 10g SAR or PD) must be specified for FastConnect WIFI TAS WLAN before determining the power level required to meet the RFE_xtarget for each radio configuration and usage case supported. The SAR characterization procedure is defined in the section 3.3 of Qualcomm FastConnect document No.:80-39282-3.

2.1 SAR design target and uncertainty

Definitions of the parameters :		
	Total Uncertainty (dBm)	1.5
	1g SAR_{design_target} (W/Kg)	0.71

To account for total uncertainty, SAR_{design_target} should be determined as:

$$\text{SAR}_{\text{design_target}} < \text{SAR}_{\text{regulatory limit}} \times 10^{\frac{-\text{total uncertainty}}{10}}$$

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2.2 SAR Char Table

Remark:

1. Pmax is used for RF tune up procedure. The maximum allowed output power is equal to Pmax + TXAGC uncertainty.
2. The Plimit values, corresponding to SAR_design_target.

<Plimit for supported technologies and bands (Plimit in BDF file)>

DSI	Band / Mode	Antenna	Channel	Frequency (MHz)	Modulation	P _{test}	P _{lim} determination for TAS BDF (Power setting in 0.25 step)
DSI 0 (Laptop Mode)	2.4GHz SISO	ANT 0 (Aux_01)	1	2412	11b / 1Mbps	13.5	15.50
		ANT 0 (Aux_01)	6	2437		13.5	
		ANT 0 (Aux_01)	11	2462		13.5	
		ANT 0 (Aux_01)	1	2412		13.5	
		ANT 0 (Aux_01)	6	2437		13.5	
		ANT 0 (Aux_01)	11	2462		13.5	
		ANT 1 (Main_10)	1	2412		13.5	
		ANT 1 (Main_10)	6	2437		13.5	
		ANT 1 (Main_10)	11	2462		13.5	
	ANT 1 (Main_10)	1	2412	13.5		15.75	
	ANT 1 (Main_10)	6	2437	13.5			
	ANT 1 (Main_10)	11	2462	13.5			
	ANT 1 (Main_10)	1	2412	13.5			
	ANT 1 (Main_10)	6	2437	13.5			
	ANT 1 (Main_10)	11	2462	13.5			
	ANT 0 (Aux_01)	1	2412	13.5			
	ANT 0 (Aux_01)	6	2437	13.5			
	ANT 0 (Aux_01)	11	2462	13.5			
DSI 0 (Laptop Mode)	2.4GHz MIMO	ANT 0 (Aux_01)	1	2412	11b / 1Mbps	13.5	15.50
		ANT 0 (Aux_01)	6	2437		13.5	
		ANT 0 (Aux_01)	11	2462		13.5	
		ANT 0 (Aux_01)	1	2412		13.5	
		ANT 0 (Aux_01)	6	2437		13.5	
		ANT 0 (Aux_01)	11	2462		13.5	
		ANT 1 (Main_10)	1	2412		13.5	
		ANT 1 (Main_10)	6	2437		13.5	
		ANT 1 (Main_10)	11	2462		13.5	
	ANT 0 (Aux_01)	1	2412	13.5		15.50	
	ANT 0 (Aux_01)	6	2437	13.5			
	ANT 0 (Aux_01)	11	2462	13.5			
	ANT 0 (Aux_01)	1	2412	13.5			
	ANT 0 (Aux_01)	6	2437	13.5			
	ANT 0 (Aux_01)	11	2462	13.5			
	ANT 1 (Main_10)	1	2412	13.5			
	ANT 1 (Main_10)	6	2437	13.5			
	ANT 1 (Main_10)	11	2462	13.5			
DSI 0 (Laptop Mode)	5.2GHz MIMO	ANT 0 (Aux_01)	42	5210	11ac(80) / VHT0	13.5	11.25
		ANT 1 (Main_10)	42	5210		13.5	
		ANT 0 (Aux_01)	42	5210		13.5	
DSI 0 (Laptop Mode)	5.3GHz MIMO	ANT 0 (Aux_01)	58	5290	11ac(80) / VHT0	13.5	10.00
		ANT 1 (Main_10)	58	5290		13.5	
		ANT 0 (Aux_01)	58	5290		13.5	
DSI 0 (Laptop Mode)	5.6GHz MIMO	ANT 0 (Aux_01)	106	5530	11ac(80) / VHT0	13.5	9.50
		ANT 1 (Main_10)	106	5530		13.5	
		ANT 0 (Aux_01)	122	5610		13.5	
		ANT 1 (Main_10)	122	5610		13.5	
		ANT 0 (Aux_01)	138	5690		13.5	
		ANT 1 (Main_10)	138	5690		13.5	
		ANT 0 (Aux_01)	106	5530		13.5	
		ANT 1 (Main_10)	106	5530		13.5	
		ANT 0 (Aux_01)	122	5610		13.5	
		ANT 1 (Main_10)	122	5610		13.5	
		ANT 0 (Aux_01)	138	5690		13.5	
		ANT 1 (Main_10)	138	5690		13.5	
DSI 0 (Laptop Mode)	5.8GHz MIMO	ANT 0 (Aux_01)	155	5775	11ac(80) / VHT0	13.5	8.75
		ANT 1 (Main_10)	155	5775		13.5	
		ANT 0 (Aux_01)	155	5775		13.5	
DSI 0 (Laptop Mode)	5.9GHz MIMO	ANT 0 (Aux_01)	171	5855	11ac(80) / VHT0	13.5	10.00
		ANT 1 (Main_10)	171	5855		13.5	
		ANT 0 (Aux_01)	171	5855		13.5	
DSI 0 (Laptop Mode)	6.2GHz MIMO (SP)	ANT 0 (Aux_01)	31	6105	11be(320) / EHT0	12.5	11.00
		ANT 1 (Main_10)	31	6105		12.5	
		ANT 0 (Aux_01)	63	6265		12.5	
		ANT 1 (Main_10)	63	6265		12.5	
		ANT 0 (Aux_01)	31	6105		12.5	
		ANT 1 (Main_10)	31	6105		12.5	
DSI 0 (Laptop Mode)	6.5GHz MIMO (LPI)	ANT 0 (Aux_01)	95	6425	11be(320) / EHT0	12.5	11.75
		ANT 1 (Main_10)	95	6425		12.5	
		ANT 0 (Aux_01)	95	6425		12.5	
		ANT 1 (Main_10)	95	6425		12.5	
DSI 0 (Laptop Mode)	6.7GHz MIMO (SP)	ANT 0 (Aux_01)	127	6585	11be(320) / EHT0	12.5	10.75
		ANT 1 (Main_10)	127	6585		12.5	
		ANT 0 (Aux_01)	159	6745		12.5	
		ANT 1 (Main_10)	159	6745		12.5	
		ANT 0 (Aux_01)	127	6585		12.5	
		ANT 1 (Main_10)	127	6585		12.5	
		ANT 0 (Aux_01)	159	6745		12.5	
		ANT 1 (Main_10)	159	6745		12.5	
DSI 0 (Laptop Mode)	7GHz MIMO (LPI)	ANT 0 (Aux_01)	191	6905	11be(320) / EHT0	12.5	11.25
		ANT 1 (Main_10)	191	6905		12.5	
		ANT 0 (Aux_01)	191	6905		12.5	
		ANT 1 (Main_10)	191	6905		12.5	

- End of report -

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