



SAR Exclusion Evaluation Report

KDB 447498 D01

For
SYNCUP PETS

FCC ID: 2ASXC-TMO-NBT-01
Model Name: TMUS-SUP-1

Report Number: 4789004574-US-S0-V0
Issue Date: 8/27/2019

Prepared for
T-mobile Usa, Inc.
12920 Se 38th Street
Bellevue, Washington, United States, 98006

Prepared by
Underwriters Laboratories Taiwan Co., Ltd.
Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd.,
Zhudong Township, Hsinchu County, Taiwan
TEL: +886-2-7737-3000
FAX: +886-3-583-7948
Website: www.ul.com





Revision History

Rev.	Date	Revisions	Revised By
V1	8/27/2019	Initial Issue	Sky Zhou

Table of Contents

1.	Attestation of Test Results.....	4
2.	Maximum Output Power from Tune-up Procedure and Transmission modes Output Power	5
3.	Statement of Justification and Compliance for SAR Test Exclusion.....	6

1. Attestation of Test Results

Applicant Name	T-mobile Usa, Inc.
FCC ID	2ASXC-TMO-NBT-01
Model Name	TMUS-SUP-1
Date Tested	6/21/2019
<p>Underwriters Laboratories Taiwan Co., Ltd., tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Underwriters Laboratories Taiwan Co., Ltd., based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.</p> <p>Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Underwriters Laboratories Taiwan Co., Ltd., and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Underwriters Laboratories Taiwan Co., Ltd., will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of any government. This report is written to support regulatory compliance of the applicable standards stated above.</p>	
Approved and Authorized By:	Prepared By:
	
Stanley Wu Senior Project Engineer Underwriters Laboratories Taiwan Co., Ltd.	Sky Zhou Engineer Underwriters Laboratories Taiwan Co., Ltd.

2. Maximum Output Power from Tune-up Procedure and Transmission modes Output Power

RF Air interface	Mode	Max. RF Output Power (dBm)	Transmission period Output Power (mW)
LTE Band 2	QPSK	24.0	2.5
LTE Band 4	QPSK	24.0	2.5
LTE Band 12	QPSK	25.0	3.2
LTE Band 66	QPSK	24.0	2.5

RF Air interface	Mode	Max. RF Output Power (dBm)	Transmission period Output Power (mW)
WiFi 2.4 GHz	802.11b	14.00	0.3
Bluetooth LE		1.65	0.1

- * The lost mode (on time 0.1 sec and off time 120 sec) duty cycle is <0.1% for LTE.
- * The lost mode (on time 1.5 sec and off time 121.5 sec) duty cycle is <1.22% for WiFi.
- * The Lost mode (on time 0.4 sec to do SSID, off time 75 sec) duty Cycle is 0.5% for BT.

$$(10^{(\text{Tune up power(dBm)/10})} \times 10^{-3}) \times 1000 = \text{mW}$$

$$\text{mW} \times \text{Duty Cycle} = \text{Transmission period Output Power (mW)}$$

3. Statement of Justification and Compliance for SAR Test Exclusion

According to FCC KDB 447498 D01 General RF Exposure Guidance v05r02

4.3.1. Standalone SAR test exclusion considerations

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$
 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

SAR Test Exclusion Calculations for WWAN

Antennas < 50mm to adjacent edges

Tx Interface	Frequency (MHz)	Output Power	Separation Distances (mm)	Calculated Threshold Value
		mW		
LTE Band 2	1909.9	2.5	5	0.7 -EXEMPT-
LTE Band 4	1754.9	2.5	5	0.7 -EXEMPT-
LTE Band 12	715.9	3.2	5	0.5 -EXEMPT-
LTE Band 66	1779.9	2.5	5	0.7 -EXEMPT-

Note(s):

1. For distances < 5 mm, a distance of 5mm is used to determine SAR exclusion. For distances < 50 mm the calculation must yield a value ≤ 3.0 , therefore, there is no SAR test requirement for this equipment.

SAR Test Exclusion Calculations for WLAN & BT

Antennas < 50mm to adjacent edges

Tx Interface	Frequency (MHz)	Output Power	Separation Distances (mm)	Calculated Threshold Value
		mW		
Wi-Fi 2.4 GHz	2462	0.3	5	0.1 -EXEMPT-
Bluetooth	2480	0.1	5	0 -EXEMPT-

Note(s):

1. For distances < 5 mm, a distance of 5mm is used to determine SAR exclusion. For distances < 50 mm the calculation must yield a value ≤ 3.0 , therefore, there is no SAR test requirement for this equipment.

END OF REPORT