



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 1 of 39

FCC SAR and PD TEST REPORT PART 0

Application No.: SZCR2403000767WM
Applicant: Sonim Technologies, Inc.
Manufacturer: Sonim Technologies, Inc.
EUT Description: smartphone
Model No.: X800
Type No.: S6002
Trade Mark: Sonim
FCC ID: WYPS6002
Standards: FCC 47CFR §2.1093
Date of Receipt: 2024/07/01
Date of Test: 2024/07/06 to 2024/07/10
Date of Issue: 2024/08/02

Keny Xu

Keny Xu
EMC Laboratory Manager



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712
Page: 2 of 39

REVISION HISTORY

Report Number	Revision	Description	Issue Date
SZCR240300076712	01	Original	2024/08/02

Authorized for issue by:				
		<div>Calvin Weng</div>		
		Calvin Weng/ Project Engineer		
		<div>Eric Fu</div>		
		Eric Fu / Reviewer		



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

CONTENTS

1	GENERAL INFORMATION	4
1.1	DETAILS OF CLIENT	4
1.2	TEST LOCATION	4
1.3	TEST FACILITY	5
1.4	GENERAL DESCRIPTION OF EUT	6
1.5	TIME-AVERAGING FOR SAR	9
2	SAR CHARACTERIZATION	10
2.1	DSI AND SAR DETERMINATION	10
2.2	SAR DESIGN TARGET AND UNCERTAINTY	11
2.3	SAR CHAR	12
3	POWER DENSITY CHARACTERIZATION	14
3.1	PD CHAR PROCESS	15
3.2	PD DESIGN TARGET DETERMINATION	16
3.3	EXPOSURE POSITIONS FOR PD EVALUATION	17
3.4	CODEBOOK FOR ALL BEAMS	18
3.5	SIMULATION AND MODELING VALIDATION	21
3.6	PD CHAR	22
3.6.1	Simulated input power limit for single beams	22
3.6.2	Simulated input power limit for beam pairs	22
3.6.4	PD char generation	23
3.6.5	PD char Table	25
3.6.6	Worst-case housing influence determination	28
4	MEASUREMENTS SYSTEM CONFIGURAION	33
4.1	POWER DENSITY MEASUREMENT SYSTEM	33
4.2	EUMMWVX PROBE	34
4.3	DATA ACQUISITION ELECTRONICS (DAE)	35
4.4	SCAN CONFIGURATION	36
4.5	SYSTEM VERIFICATION SOURCE	36
4.6	POWER DENSITY SYSTEM VERIFICATION	37
4.7	SYSTEM VERIFICATION RESULTS	37
5	UNCERTAINTY ASSESSMENT	38



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

1 General Information

1.1 Details of Client

Applicant:	Sonim Technologies, Inc.
Address:	4445 Eastgate Mall, Suite 200, San Diego, CA 92121, USA
Manufacturer:	Sonim Technologies, Inc.
Address:	4445 Eastgate Mall, Suite 200, San Diego, CA 92121, USA

1.2 Test Location

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
Address:	No. 1 Workshop, M-10, Middle section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China
Post code:	518057
Test engineer:	Vito Wang, Charley Yi



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgs.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

1.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

• **FCC –Designation Number: CN1336**

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

1.4 General Description of EUT

Product Name:	smartphone		
Model No.:	X800		
Trade Mark:	Sonim		
Product Phase:	production unit		
Device Type:	portable device		
Exposure Category:	uncontrolled environment / general population		
IMEI:	351348280016666,351348280016633, 351348280016880		
Hardware Version:	V1.0		
Software Version:	X80.0-01-14.0-15.26.00		
Antenna Type:	PIFA Antenna		
Device Operating Configurations:			
Modulation Mode:	GSM: GMSK,8PSK; WCDMA: QPSK,16QAM LTE: QPSK,16QAM,64QAM,256QAM, 5G NR: DET-s-OFDM(PI/2 BPSK,QPSK,16QAM,64QAM,256QAM) CP-OFDM(QPSK,16QAM,64QAM,256QAM) WIFI: DSSS,OFDM,OFDMA; BT: GFSK, $\pi/4$ DQPSK,8DPSK		
Device Class:	B		
GPRS Multi-slots Class:	33	EGPRS Multi-slots Class:	33
HSDPA UE Category:	24	HSUPA UE Category:	6
HSPA+:	14		
Power Class:	4, tested with power level 5(GSM850)		
	1, tested with power level 0(GSM1900)		
	3, tested with power control “all 1”(WCDMA Band)		
	3, tested with power control “max power”(LTE Band)		
Frequency Bands:	Band	Tx(MHz)	Rx(MHz)
	GSM850	824~849	869~894
	GSM1900	1850~1910	1930~1990
	WCDMA Band II	1850~1910	1930~1990
	WCDMA Band IV	1710~1755	2110~2155
	WCDMA Band V	824~849	869~894



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 7 of 39

LTE Band 2	1850 ~1910	1930 ~1990
LTE Band 4	1710~1755	2110~2155
LTE Band 5	824~849	869-894
LTE Band 7	2500~2570	2620~2690
LTE Band 12	699~716	729~746
LTE Band 13	777~787	746~756
LTE Band 14	787~798	758~768
LTE Band 25	1850~1915	1930~1995
LTE Band 26	814~849	859~894
LTE Band 30	2305~2315	2350~2360
LTE Band 38	2570~2620	2570~2620
LTE Band 41(Class 2/3)	2496~2690	2496~2690
LTE Band 42	3400~3600	3400~3600
LTE Band 48	3550~3700	3550~3700
LTE Band 66	1710~1780	2110~2120
LTE Band 71	663~698	617~652
NR Band n2	1850 ~1910	1930 ~1990
NR Band n5	824~849	869-894
NR Band n7	2500~2570	2620~2690
NR Band n14	787~798	758~768
NR Band n25	1850~1915	1930~1995
NR Band n26	814~849	859~894
NR Band n30	2305~2315	2350~2360
NR Band n38	2570~2620	2570~2620
NR Band n41 (Class 2/3)	2496~2690	2496~2690
NR Band n66	1710~1780	2110~2120
NR Band n70	1695~1710	1995~2020
NR Band n71	663~698	617~652
NR Band n77(Class 2/3)	3450~3550	3450~3550
	3700~3980	3700~3980
NR Band n78(Class	3450~3550	3450~3550



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 8 of 39

	2/3)	3700~3800	3700~3800
	NR Band n260	37000~40000	37000~40000
	NR Band n261	27500~28350	27500~28350
	WIFI 2.4G	2412~2462	2412~2462
	WIFI 5G	5150~5350	5150~5350
		5470~5600	5470~5600
		5650~5725	5650~5725
		5725~5850	5725~5850
	WIFI 6E	5925~6425	5925~6425
		6425~6525	6425~6525
		6525~6875	6525~6875
		6875~7125	6875~7125
BT	2402~2480	2402~2480	
NFC	13.56	13.56	
RF Cable:	<input checked="" type="checkbox"/> Provided by applicant <input type="checkbox"/> Provided by the laboratory		
Battery Information:	Model:	BAT-05000-21S	
	Normal Voltage:	4.45V	
	Rated capacity:	5000mAh	
	Manufacturer:	Shenzhen Aerospace Electronic Co., Ltd.	
<p>Note: *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information , SGS is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.</p> <p>Remark:</p> <p>As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.</p>			



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

1.5 Time-Averaging for SAR

The equipment under test (EUT) is a portable handset, it contains the Qualcomm modem supporting 2G/3G/4G/5G NR/BT/WLAN/NFC bands, but only 2G/3G/4G/5G NR are enabled with Qualcomm Smart Transmit feature to control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is in compliance with the FCC requirement, we verification the applicable cases in part2.

This report describes the procedures for the SAR char and PD char generation, and the parameters obtained from SAR and PD characterization (referred to as SAR char and PD char, respectively) will be used as input for Smart Transmit. Both SAR char and PD char will be entered via the Embedded File System (EFS) to enable the Smart Transmit Feature.

Nomenclature for Part 0 Report:

Technology	Term	Description
WWAN	P_{limit}	Power level that corresponds to the exposure design target (SAR_design_target) after accounting for all device design related uncertainties
	P_{max}	Maximum tune up output power
	SAR_design_target	Target SAR level < FCC SAR limit after accounting for all device design related uncertainties
	$SAR\ Char$	Table containing P_{limit} for all technologies and bands
	PD_design_target	The design target for PD compliance. It should be less than regulatory power density limit to account for all device design related uncertainties
	$Input.power.limit$	For a PD characterized wireless device, the input power level at antenna port(s) for each beam corresponding to PD_design_target
	$PD\ char$	The table that contains input.power.limit fed to antenna port(s) for all supported beams



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

2 SAR CHARACTERIZATION

2.1 DSI and SAR Determination

This device uses different Device State Index (DSI) to configure different time averaged power levels based on certain exposure scenarios. Depending on the detection scheme implemented in the smartphone, the worst-case SAR was determined by measurements for the relevant exposure conditions for that DSI. Detailed descriptions of the detection mechanisms are included in the operational description.

When 1g SAR and 10g SAR exposure comparison is needed, the worst-case was determined from SAR normalized to 1g or 10g SAR limit.

The device state index (DSI) conditions used in Table 1 represent different exposure scenarios.

Exposure conditions	Description	DSI
Head	Receiver is triggered	4
Body/Hotspot	Proximity sensor is triggered	1
	Proximity sensor is off	0
Limbs	Proximity sensor is triggered	1
	Proximity sensor is off	0

Table 1: DSI and Corresponding Exposure Scenarios



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

2.2 SAR Design Target And Uncertainty

SAR_design_target is determined by ensuring that it is less than FCC SAR limit after accounting for total device designed related uncertainties specified by the manufacturer.

$$\text{SAR_design_target} < \text{SAR}_{\text{regulatory_limit}} \times 10^{\frac{-\text{total uncertainty}}{10}}$$

Exposure position	Frequency band	SAR Regulatory Limit W/kg(1g)	SAR design target W/kg(1g)
Head	WWAN	1.6	0.8
Body worn/Hotsopt	WWAN	1.6	0.8
Exposure position	Frequency band	SAR Regulatory Limit W/kg(10g)	SAR design target W/kg(10g)
Limbs	WWAN	4.0	2.3



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

2.3 SAR Char

The Smart Transmit algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of SAR_design_target, below the predefined time-averaged power limit, for each characterized technology and band. Smart Transmit allows the device to transmit at higher power instantaneously, as high as P_{max} , when needed, but enforces power limiting to maintain time-averaged transmit power to P_{limit} . Below table shows P_{limit} EFS settings and maximum tune up output power P_{max} configured for this EUT for various transmit conditions (DSI: Device State Index).

P_{limit} for supported technologies and bands (actual EFS settings)

Band	Mode	Antenna	P_{max}	Uncertainty	P_{limit} (average)		
					Head Receiver on	Sensor on	Sensor off&Receive off
					DSI4	DSI1	DSI0
GSM	GSM850 2TS	ANT1	23.0	2.0	21.0	23.0	23.0
GSM	GSM1900 4TS	ANT2	21.0	2.0	17.0	21.0	21.0
WCDMA	WB2	ANT2	23.0	1.5	16.5	22.0	22.0
WCDMA	WB4	ANT2	23.0	1.5	17.0	22.5	23.0
WCDMA	WB5	ANT1	24.0	1.0	20.0	24.0	24.0
LTE	B2	ANT2	23.0	1.5	17.0	22.0	22.0
LTE	B2	ANT5	24.0	1.0	24.0	24.0	24.0
LTE	B4	ANT2	23.0	1.5	17.0	23.0	23.0
LTE	B4	ANT5	24.0	1.0	24.0	24.0	24.0
LTE	B5	ANT1	24.0	1.0	20.0	24.0	24.0
LTE	B7	ANT2	23.5	1.0	18.0	21.0	23.5
LTE	B7	ANT5	24.0	1.0	24.0	24.0	24.0
LTE	B12	ANT1	24.0	1.0	23.0	24.0	24.0
LTE	B13	ANT1	24.0	1.0	21.5	24.0	24.0
LTE	B14	ANT1	24.0	1.0	21.5	24.0	24.0
LTE	B25	ANT2	23.0	1.5	17.0	22.0	22.0
LTE	B25	ANT5	24.0	1.0	24.0	23.0	24.0
LTE	B26	ANT1	24.0	1.0	20.0	24.0	24.0
LTE	B30	ANT2	23.0	1.5	19.5	23.0	23.0
LTE	B38	ANT2	22.0	1.0	16.5	18.5	22.0
LTE	B41 PC2	ANT2	22.4	1.0	16.9	18.4	22.4
LTE	B41 PC3	ANT2	22.0	1.0	16.5	18.0	22.0
LTE	B42	ANT3	21.5	1.0	18.0	21.0	21.0
LTE	B48	ANT3	20.0	2.0	16.5	20.0	20.0
LTE	B66	ANT2	23.0	1.5	17.0	23.0	23.0
LTE	B66	ANT5	24.0	1.0	24.0	24.0	24.0
LTE	B71	ANT1	24.0	1.0	22.5	24.0	24.0
NR	N2	ANT2	23.0	2.0	15.5	20.5	20.5
NR	N5	ANT1	23.0	2.0	19.0	23.0	23.0
NR	N7	ANT2	23.0	2.0	15.5	19.5	23.0
NR	N7	ANT5	23.0	2.0	23.0	23.0	23.0
NR	N14	ANT1	23.0	2.0	20.5	23.0	23.0
NR	N25	ANT2	23.0	2.0	15.5	20.5	20.5
NR	N26	ANT1	23.0	2.0	19.0	23.0	23.0
NR	N30	ANT2	23.5	2.0	20.0	23.5	23.5
NR	N38	ANT2	23.0	2.0	14.0	18.0	23.0
NR	N41 PC2	ANT2	26.0	2.0	15.5	19.5	23.5



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgs.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 13 of 39

NR	N41 PC3	ANT2	24.0	2.0	15.5	19.5	23.5
NR	N48	ANT3	22.0	2.0	18.5	22.0	22.0
NR	N66	ANT2	23.0	2.0	16.5	21.5	21.5
NR	N70	ANT5	22.0	2.0	22.0	22.0	22.0
NR	N71	ANT1	23.0	2.0	21.5	23.0	23.0
NR	N77_3450-3550 PC2	ANT3	25.0	2.0	18.5	22.0	22.0
NR	N77_3450-3550 PC3	ANT3	23.0	2.0	18.5	22.0	22.0
NR	N77_3700-3980 PC2	ANT3	25.0	2.0	19.0	22.5	22.5
NR	N77_3700-3980 PC3	ANT3	23.0	2.0	19.0	22.5	22.5
NR	N78_3450-3550 PC2	ANT3	25.0	2.0	18.0	21.5	21.5
NR	N78_3450-3550 PC3	ANT3	23.0	2.0	18.0	21.5	21.5
NR	N78_3700-3800 PC2	ANT3	26.0	2.0	18.5	21.0	21.0
NR	N78_3700-3800 PC3	ANT3	24.0	2.0	18.5	21.0	21.0
NR	N77_3450-3550 PC2	ANT7	26.0	2.0	18.0	21.0	21.0
NR	N77_3450-3550 PC3	ANT7	24.0	2.0	18.0	21.0	21.0
NR	N77_3700-3980 PC2	ANT7	25.0	2.0	22.0	23.5	23.5
NR	N77_3700-3980 PC3	ANT7	23.0	2.0	22.0	23.0	23.0
NR	N78_3450-3550 PC2	ANT7	26.0	2.0	19.0	21.5	21.5
NR	N78_3450-3550 PC3	ANT7	24.0	2.0	19.0	21.5	21.5
NR	N78_3700-3800 PC2	ANT7	26.0	2.0	21.0	23.0	23.0
NR	N78_3700-3800 PC3	ANT7	24.0	2.0	21.0	23.0	23.0

Note:

- 1) P_{\max} is used for RF tune up procedure. The maximum allowed output power is equal to $P_{\max} + \text{Total uncertainty}$.
- 2) The max allowed output power is the $P_{\text{limit}} + \text{Total uncertainty}$, and if P_{limit} is higher than P_{\max} , the device output power will be P_{\max} instead.
- 3) Note that WLAN operations are not enabled with Smart Transmit.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

3 Power Density Characterization

The device with 5G mmW NR typically supports many beams and contains multiple mmW antenna arrays installed at different locations to achieve good coverage in the field. The power density (PD) measurement is a time-consuming test, and it is not practical to measure the power density for all the beams on all the surfaces of the device, thus a hybrid approach using electromagnetic (EM) simulation in combination with measurement is recommended for PD char generation.



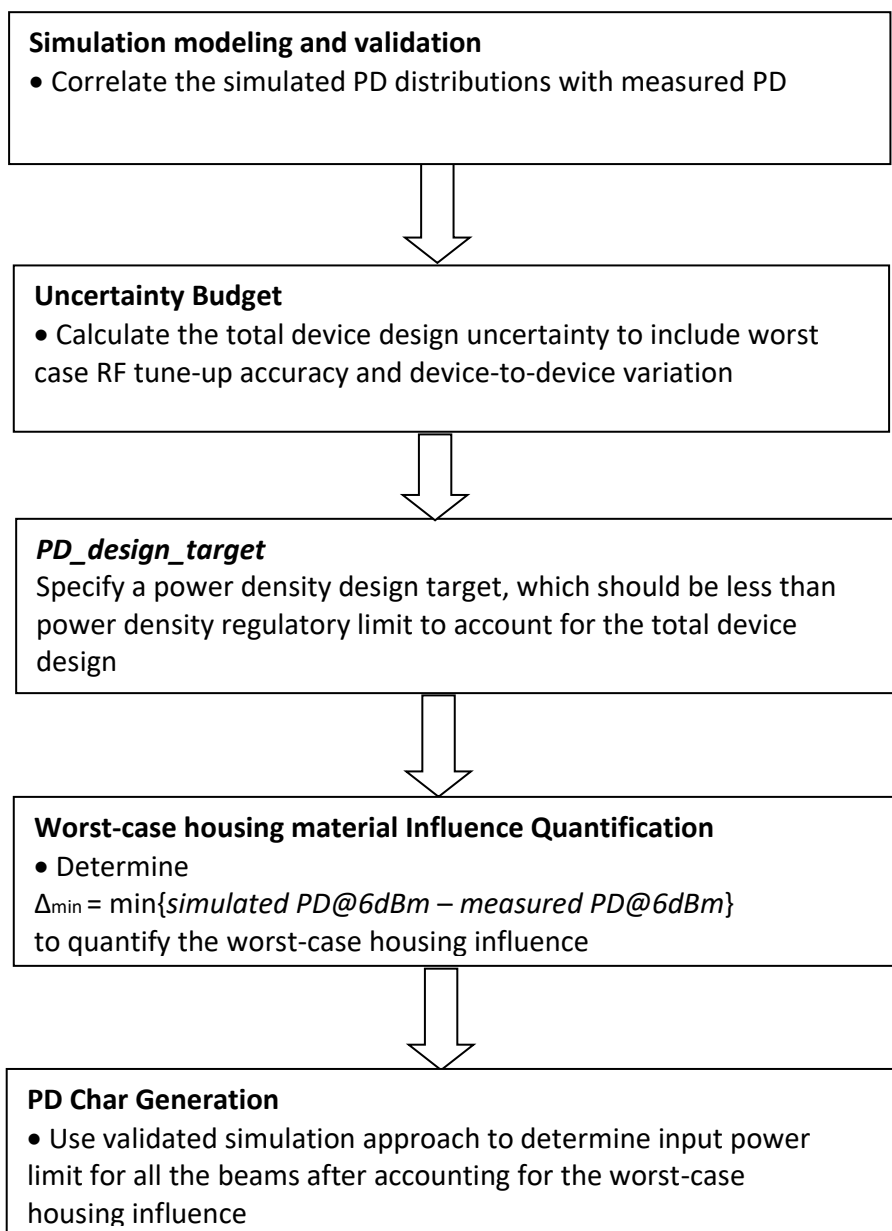
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

3.1 PD Char Process

The mmW device supports total N beams, where M out of N are single beams and the rest of (N-M) are beam pairs (where 2 single beams are excited at the same time). The following figure outlines the PD char process.



3.2 PD_design_target determination

To account for total uncertainty, PD_design_target should meet the criteria:

$$PD_design_target < PD_Regulatory_Limit \times 10^{\frac{-total\ uncertainty}{10}}$$

For this EUT, the PD design target and the uncertainty value are listed below

Frequency band	Antenna module	PD design target(W/m2)	Total Uncertainty dB (k=2)	TxAGC uncertainty (dB)
N260	Module0	6	2.1	0.5
N261	Module0	6	2.1	0.5

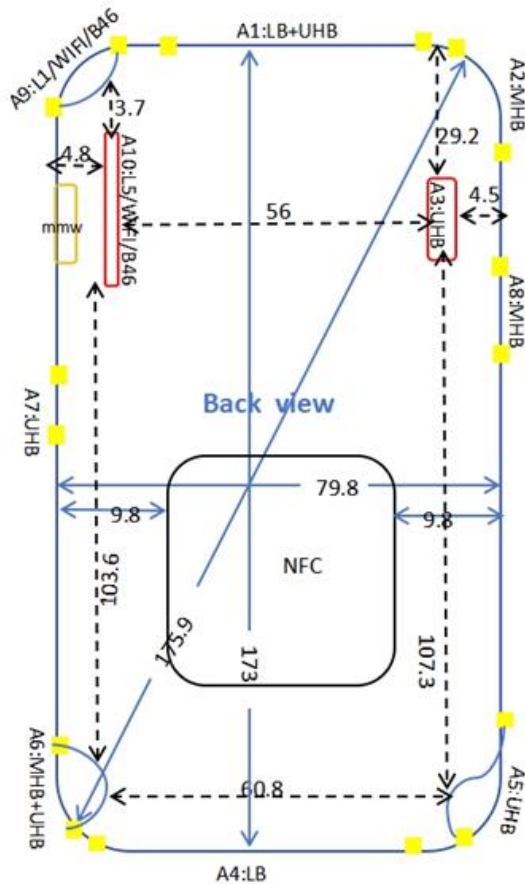


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

3.3 Exposure positions for PD evaluation



Evaluation positions

Configuration	Front side 2mm	Back side 2mm	Left side 2mm	Right side 2mm	Top side 2mm	Bottom side 2mm
N260/261 module0	√	√	×	√	√	×



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessibly at <http://www.ssgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any reproduction or translation of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443,
 or email: CN.Doccheck@sqs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgsg.china@sgs.com

Member of the SGS Group (SGS SA)

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 18 of 39

3.4 Codebook for all beams

All the beams that the device supports are specified in the pre-defined codebook. The codebook is device design specific and generated after evaluating radiation coverage from this particular device. In the field, a smartphone manages the beam selection and utilization based on this pre-defined codebook that is loaded and stored in the device.

N260

Beam ID 1	Beam ID 2	Antenna Module	n260 Simulated 4cm^2 Averaged PD at 6dBm			
			Surface 2mm			
			Front	Back	Right	Top
0		0	0.38	1.79	2.58	0.07
1		0	0.49	1.99	2.98	0.08
2		0	0.64	2.43	3.47	0.21
3		0	0.56	2.3	3.28	0.25
4		0	0.57	2.3	3.1	0.35
5		0	0.79	4.39	6.38	0.78
6		0	0.97	5.28	6.45	0.58
7		0	1.84	4.23	6.91	0.5
8		0	0.88	4.52	5.93	1.04
9		0	0.69	4.93	6.29	0.7
10		0	1.7	4.69	6.76	0.24
11		0	1.24	4.19	6.21	1.12
12		0	1.81	8.21	10.43	2.32
13		0	1.82	10.2	12.5	1.38
14		0	2.77	9.9	13.25	0.41
15		0	3.79	7.23	13.16	1.44
16		0	1.86	7.89	11.14	2.74
17		0	1.47	10.61	12.67	1.3
18		0	2.17	12.16	14.82	0.75
19		0	4.03	8.64	14.47	0.59
20		0	2.58	7.6	11.9	2.48
	128	0	0.4	1.92	2.61	0.09
	129	0	0.56	2.37	3.29	0.11
	130	0	0.75	2.53	3.72	0.18
	131	0	0.55	2.37	3.5	0.27
	132	0	0.52	2.37	3.45	0.34
	133	0	1.31	4.85	6.98	0.21
	134	0	1.45	5.18	6.82	0.47
	135	0	0.55	4.81	5.85	0.24
	136	0	1.08	3.77	6.85	0.93
	137	0	1.36	3.45	5.69	0.26
	138	0	1.3	5.12	6.53	0.32
	139	0	0.5	4.47	5.51	0.35
	140	0	2.34	8.62	12.52	1.97
	141	0	3.45	9.63	13.92	1.14
	142	0	2.65	11.48	14.83	0.5
	143	0	1.92	11.6	13.45	2.85
	144	0	2.2	7.57	12.14	2.35
	145	0	3.75	8.76	13.22	1.46
	146	0	2.84	11.15	14.22	0.95
	147	0	2.03	12.03	14.14	1.11
	148	0	1.97	8.01	11.14	2.86
0	128	0	0.92	4.2	5.85	0.21
1	129	0	1.22	4.72	6.87	0.25
2	130	0	1.51	5.62	8.12	0.56
3	131	0	1.29	5.19	7.38	0.77
4	132	0	1.32	5.03	6.95	1.04
5	133	0	2.29	10.08	14.39	1.31
6	134	0	2.89	13.54	16.79	1.72



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgs.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 19 of 39

7	135	0	2.7	9.02	11.8	0.71
8	136	0	2.34	9.32	14.06	3.11
9	137	0	2.1	8.53	11.18	1.23
10	138	0	3.58	11.28	13.98	0.65
11	139	0	1.55	7.35	8.99	1.59
12	140	0	5.79	20.54	29.18	5.88
13	141	0	6.68	25.13	33.25	3.49
14	142	0	6.21	23.43	30.43	1.28
15	143	0	8	22.27	29.21	4.97
16	144	0	4.51	17.23	25.68	7.15
17	145	0	7.28	24.3	32.94	3.98
18	146	0	5.98	26.18	32.61	1.94
19	147	0	7.69	21.56	31.63	2.23
20	148	0	6.3	21.47	27.13	7.49

N261

Beam ID 1	Beam ID 2	Antenna Module	n261 Simulated 4cm^2 Averaged PD at 6dBm			
			Surface 2mm			
			Front	Back	Right	Top
0		0	0.55	2.11	3.78	0.27
1		0	0.59	2.12	3.86	0.3
2		0	0.42	2.11	3.56	0.22
3		0	0.34	2.24	3.58	0.31
4		0	0.29	2.21	3.54	0.35
5		0	0.84	3.8	6.25	1.03
6		0	1.42	5.07	7.58	0.52
7		0	1.79	5.8	8.96	0.4
8		0	1.32	4.06	7.04	0.69
9		0	1.49	5.29	8.19	0.39
10		0	1.71	6	8.74	0.16
11		0	1.67	5.19	8.44	0.57
12		0	2.74	10.61	17.14	1.86
13		0	3.79	12.38	17.86	0.71
14		0	3.67	14.02	18.95	0.22
15		0	3.25	14.59	19.34	2.07
16		0	2.85	13.08	18.37	4.21
17		0	3.62	12.95	19.05	0.81
18		0	3.98	13.8	18.81	0.34
19		0	3.59	13.93	18.76	0.46
20		0	2.96	13.87	18.84	3.51
	128	0	0.29	2.31	3.3	0.26
	129	0	0.35	2.25	3.86	0.26
	130	0	0.66	2.18	3.93	0.14
	131	0	0.61	2.27	3.84	0.22
	132	0	0.56	2.18	3.63	0.32
	133	0	1.14	4.19	6.49	0.86
	134	0	1.87	6.01	8.85	0.18
	135	0	1.62	5.64	8.17	0.7
	136	0	0.9	3.57	6.3	0.7
	137	0	1.35	5.76	8.27	0.29
	138	0	1.03	6.16	8.36	0.24
	139	0	1.2	3.85	7.18	0.51
	140	0	3.25	14.35	19.45	1.18
	141	0	3.97	14.95	19.84	0.38
	142	0	4.55	14.62	20.14	0.21
	143	0	4.39	13.98	20.18	2.17
	144	0	2.85	8.9	16.47	3.13
	145	0	3.52	14.54	19.36	0.61
	146	0	4.18	14.72	19.93	0.34
	147	0	4.7	14.55	20.27	0.33
	148	0	3.9	12.34	19.5	3.25



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgs.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

Member of the SGS Group (SGS SA)



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 20 of 39

0	128	0	0.94	5.17	7.87	0.58
1	129	0	1.02	5.08	8.19	0.65
2	130	0	1.26	5.3	8.21	0.58
3	131	0	1	5.48	8.19	0.8
4	132	0	0.93	4.78	7.57	0.95
5	133	0	2.29	10.62	15.08	3.07
6	134	0	3.38	10.96	15.73	1.03
7	135	0	2.97	9.84	15.18	1.49
8	136	0	2.67	10.62	15.94	1.53
9	137	0	3.28	13.42	18.75	0.89
10	138	0	2.96	14.01	19.42	0.53
11	139	0	2.82	10.84	17.17	1.51
12	140	0	7.37	33.44	46	4.21
13	141	0	9.13	32.07	41.44	1.37
14	142	0	9.43	32.59	41.81	0.58
15	143	0	8.91	34.28	43.83	5.67
16	144	0	7.62	28.76	39.96	8.98
17	145	0	8.51	32.66	42.83	1.77
18	146	0	9.26	32.67	42.09	0.68
19	147	0	9.68	33.91	43.45	1.1
20	148	0	8.77	32.39	42.75	8.12



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

Member of the SGS Group (SGS SA)

3.5 Simulation and modeling validation

Power density simulations of all beams and surfaces were performed by the manufacturer. Details of these simulations and modeling validation can be found in the Power Density Simulation Report. Following Table includes a summary of the validation results to support worst-case housing influence quantification in power density characterization for this model With an input power of 6 dBm for n261 and n260 band, PD measurements are conducted for at least one single beam per antenna type and per antenna module (0,1) on worstsurface(s) . PD measurements are performed at mid channel of each mmW band and with CW modulation.

PD value will be used to determine worst-case housing influence for conservative assessment

Band	Beam 1	Beam 2	Test ch./Freq. (Mhz)	Position	Power Setting	Input power level(dBm)	Test Separation	Measured PD 4cm2 (W/m^2)	Simulated PD (W/m^2)	Delta= Sim. - Meas. (dB)
n260	18	/	2254166/38500	Front Side	60	6	2mm	1.43	2.17	1.81
n260	18	/	2254166/38500	Back Side	60	6	2mm	6.91	12.16	2.45
n260	18	/	2254166/38500	Right Side	60	6	2mm	8.83	14.82	2.25
n260	18	/	2254166/38500	Top Side	60	6	2mm	0.255	0.75	4.69
n260	/	142	2254166/38500	Front Side	60	6	2mm	1.32	2.65	3.03
n260	/	142	2254166/38500	Back Side	60	6	2mm	8.22	11.48	1.45
n260	/	142	2254166/38500	Right Side	60	6	2mm	10.4	14.83	1.54
n260	/	142	2254166/38500	Top Side	60	6	2mm	0.252	0.5	2.98
n261	15	/	2077916/27925	Front Side	60	6	2mm	1.27	3.25	4.08
n261	15	/	2077916/27925	Back Side	60	6	2mm	7.28	14.59	3.02
n261	15	/	2077916/27925	Right Side	60	6	2mm	9.75	19.34	2.97
n261	15	/	2077916/27925	Top Side	60	6	2mm	1.31	2.07	1.99
n261	/	147	2077916/27925	Front Side	60	6	2mm	0.979	4.70	6.81
n261	/	147	2077916/27925	Back Side	60	6	2mm	5.45	14.55	4.26
n261	/	147	2077916/27925	Right Side	60	6	2mm	9.4	20.27	3.34
n261	/	147	2077916/27925	Top Side	60	6	2mm	0.166	0.33	2.98



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

3.6 PD Char

3.6.1 Simulated input power limit for single beams

Perform simulation at low, mid and high channel for each mmW band supported, with a given input power per active port, *sim.input.power.per.active.port* (6 dBm for this product):

1. Obtain PDsurface value (the worst PD among all identified surfaces of the device), i.e., *sim.PDsurface*, at all three channels for all single beams (1~M) specified in *codebook_sim*.
2. Calculate scaling factors at all three channels by:

$$s(i)_{low_or_mid_or_high} = \frac{PD\ design\ target}{sim.PDsurface(i)}, i = 1, 2, \dots M \quad (4)$$

3. Determine the worst-case scaling factor among low, mid and high channels:

$$s(i) = \min\{s_{low}(i), s_{mid}(i), s_{high}(i)\}, i = 1, 2, \dots M \quad (5)$$

4. Determine the simulated input power limit, *sim.powerlimit*, for single beam i by:

$$sim.powerlimit(i)dBm = 10 * \log(s(i)) + sim.input.power.at.active.port, i = 1, 2, \dots M \quad (6)$$

3.6.2 Simulated input power limit for beam pairs

The relative phase between single beams of a beam pair is swept to find the worst case PD for beampairs operation, and PD simulation data has taken this into consideration for beam-pair operations take consideration of the variation relative phase was reported.

For beam pair, extract the E-fields and H-fields from the corresponding single beams at mid and high channel for each supported band and for all identified surfaces of the device.

For a given beam pair containing *beam_a* and *beam_b* with relative phase \varnothing and for a given channel, determine the worst-case $\varnothing_{worstcase}$ which results in the highest total PD (\varnothing) among all identified surfaces for this beam pair at this channel. When $\varnothing_{worstcase}$ is determined for all three channels, obtain the scaling factor given by the below equation for low, mid and high channels:

$$s(i)_{low_or_mid_or_high} = \frac{PD\ design\ target}{total\ PD(\varnothing(i)_{worstcase})}, i = M + 1, M + 2, \dots N \quad (8)$$

The $\varnothing_{worstcase}$ varies with channel and beam pair, the lowest scaling factor among all three channels, $s(i)$, is determined for the beam pair i:

$$s(i) = \min\{s_{low}(i), s_{mid}(i), s_{high}(i)\}, i = M + 1, M + 2, \dots N \quad (9)$$

The simulated input power limit, *sim.powerlimit*, for beam pair i can be determined by

$$sim.powerlimit(i)dBm = 10 * \log(s(i)) + sim.input.power.at.active.port, i = M + 1, M + 2, \dots N \quad (10)$$



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

3.6.4 PD char generation

Ideally, if there is no uncertainty associated with hardware as described, after accounting for the housing influence (Δ_{min}) determined in Section 3.6, Input power limit, *input.power.limit* (*i*), for beam *i* can be obtained:

$$input.power.limit(i) = sim.power_{limit}(i) + \Delta_{min}, i=1,2,\dots,N \quad (11)$$

If simulation overestimates the housing influence, then Δ_{min} (= minimum {simulated PD – measured PD}) is negative, which means that the measured PD would be higher than the simulated PD. The input power to antenna elements determined via simulation must be decreased for compliance.

Similarly, if simulation underestimates loss, then Δ_{min} is positive (measured PD would be lower than the simulated value). Input power to antenna elements determined via simulation can be increased and still be PD compliant.

In reality, the hardware design has uncertainty which must be properly considered in equation (11). In Section 3.7, the TxAGC uncertainty at reference power level (6dBm in report) is embedded in the process of Δ_{min} determination and should be removed to avoid double counting this uncertainty.

If -TxAGC uncertainty at reference power level < Δ_{min} < TxAGC uncertainty at reference power level,

$$input.power.limit(i) = sim.power_{limit}(i), i = 1, 2, \dots, N \quad (12)$$

else if Δ_{min} < -TxAGC uncertainty at reference power level,

$$input.power.limit(i) = sim.power_{limit}(i) + (\Delta_{min} + \text{TxAGC uncertainty at reference power level}), \\ i = 1, 2, \dots, N \quad (13)$$

else if Δ_{min} > TxAGC uncertainty at reference power level,

$$input.power.limit(i) = sim.power_{limit}(i) + (\Delta_{min} - \text{TxAGC uncertainty at reference power level}), \\ i = 1, 2, \dots, N \quad (14)$$



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 24 of 39

The input power limit is derived and listed in the table below

Band	Ant Polarization	Δ_{min} (dB)	TxAGC uncertainty (dB)	Input.power.limit (dBm)
n260	0	1.45	0.5	$6 + 10 * \log(s(i)) - 0.95$
n261	0	1.99	0.5	$6 + 10 * \log(s(i)) - 1.49$



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

Member of the SGS Group (SGS SA)

3.6.5 PD char Table

Combining the information in previous sections, PD char is derived and listed below

N260 module0

Beam ID 1	Beam ID 2	Input power limit (dBm)
0		10.15
1		9.57
2		8.76
3		9.51
4		9.30
5		6.44
6		6.16
7		6.08
8		6.79
9		6.39
10		6.05
11		6.77
12		3.86
13		3.08
14		2.97
15		2.62
16		4.17
17		3.32
18		2.61
19		2.62
20		3.54
	128	10.18
	129	9.53
	130	8.66
	131	8.96
	132	8.98
	133	6.06
	134	6.02
	135	6.91
	136	6.22
	137	7.01
	138	6.10
	139	7.11
	140	3.62
	141	2.84
	142	2.56
	143	3.04
	144	3.89
	145	2.73
	146	2.69
	147	2.93
	148	4.01
0	128	6.60
1	129	6.11
2	130	5.32
3	131	5.76
4	132	5.87
5	133	2.81
6	134	2.33



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 26 of 39

7	135	3.67
8	136	2.92
9	137	3.79
10	138	2.95
11	139	4.87
12	140	-0.27
13	141	-0.81
14	142	-0.52
15	143	-0.57
16	144	0.17
17	145	-0.96
18	146	-0.74
19	147	-0.53
20	148	0.23



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

Member of the SGS Group (SGS SA)

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 27 of 39

N261 module1

Beam ID 1	Beam ID 2	Input power limit (dBm)
0		9.47
1		9.31
2		9.73
3		9.71
4		9.78
5		7.31
6		6.34
7		5.59
8		6.79
9		6.14
10		5.66
11		5.92
12		2.93
13		2.68
14		2.39
15		2.35
16		2.63
17		2.47
18		2.39
19		2.43
20		2.49
	128	10.08
	129	9.40
	130	9.18
	131	9.31
	132	9.53
	133	7.07
	134	5.61
	135	5.97
	136	7.28
	137	6.09
	138	6.02
	139	6.71
	140	2.38
	141	2.15
	142	2.13
	143	2.22
	144	3.10
	145	2.40
	146	2.19
	147	2.16
	148	2.37
0	128	6.31
1	129	6.14
2	130	6.06
3	131	6.14
4	132	6.44
5	133	3.48
6	134	3.09
7	135	3.39
8	136	3.24
9	137	2.54
10	138	2.32
11	139	2.92
12	140	-1.36



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

13	141	-0.99
14	142	-0.99
15	143	-1.15
16	144	-0.76
17	145	-1.05
18	146	-1.04
19	147	-1.11
20	148	-1.06

3.6.6 Worst-case housing influence determination

Referring to the PD simulation report for PD simulation data for all beams . For non-metal material, the material property cannot be accurately characterized at mmW frequencies. The estimated material property for the device housing is used in the simulation model, which could impact the accuracy in simulation for PD amplitude

quantification. Since the housing influence on PD could vary from surface to surface where the EM field propagates through, the most underestimated surface is used to quantify the worst-case housing influence for conservative assessment.

Referring to the PD simulation report for PD simulation data for all beams, and the worst beams are selected to be tested Power density simulation for all The mmW antenna modules are placed at different locations and only surrounding material/housing has impact on EM field propagation and in turn power density, and depending on the type of antenna array the nature of EM field propagation in the near field is different. Therefore, the worst-case housing influence is determined per antenna module and per antenna type.

For this DUT, the procedure to determine worst-case housing influence, denoted as Δ_{min} :

1. Based on PD simulation, determine one or more worst-surface(s) that contains all the highest 4cm^2 -averaged PD for each of the beams, per antenna module and per antenna type in the mid channel of each band.
2. For identified worst surface(s) per antenna module and per antenna type group,
 - a. First determine Δ_{min} based on identified worst surface(s) in Step 1, and then follow the procedures described in Section 3.6 to derive *input.power.limit* corresponding to *PD_design_target* for all the beams
 - b. Then prove all other surface(s) near-by the mmW module, i.e., surface(s) not selected in Step 1, is not required for housing material loss quantification (in other words, these non-evaluated surfaces have no influence on the determined *input.power.limit*) by:
 - i. Scale the simulated 4cm^2 -averaged PD values for all single beams to correspond to their *sim.powerlimit*, and identify the worst-PD beam per each non-selected surface.
 - ii. Measure 4cm^2 -averaged PD at *input.power.limit* (determined in Section 3.6) for the identified worst-PD beam at each non-selected surface
 - iii. Demonstrate all measured 4cm^2 -averaged PD values are below *PD_design_target*.
3. If any of the above surface(s) in Step (2.b.iii) have measured 4cm^2 -averaged PD $\geq PD_design_target$, then those surfaces must be included in the Δ_{min} determination in Step (2.a), and follow the procedures in Section 4.6 to re-evaluate *input.power.limit* with these added surfaces.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 29 of 39

Therefore, when comparing a simulated 4cm²-averaged PD and measured 4cm²-averaged PD for the above identified surfaces, the worst errors introduced when using the estimated material property in the simulation per module and per antenna type (worst out of both polarizations) is highlighted in bolded numbers in section 3.5.

Thus, the worst-case housing influence, denoted as Δ_{min} (= minimum of (sim.PD - meas.PD) for the same antenna type of each module), is determined as:



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 30 of 39

Band	Antenna Module	Δ_{min} (dB)
n260	0	1.45
n261	0	1.99

Δ_{min} represents the worst case where RF exposure is underestimated the most by simulation upon using the estimated material property for glass/plastics of the housing. For conservative assessment, the Δ_{min} is used as the worst case correction and applied to each corresponding beam group to determine power limits in PD char for compliance (see Section 3.6 for details).

Simulated 4cm²-averaged PD at *input.power.limit*

Determine the worst beam for each of non-selected surface(s)

N260

Beam ID 1	Beam ID 2	Antenna Module	Front	Back	Top
0		0	0.79	3.74	0.15
1		0	0.90	3.64	0.15
2		0	0.97	3.68	0.32
3		0	1.01	4.14	0.45
4		0	0.98	3.95	0.60
5		0	0.70	3.90	0.69
6		0	0.81	4.41	0.48
7		0	1.50	3.46	0.41
8		0	0.85	4.35	1.00
9		0	0.61	4.34	0.62
10		0	1.38	3.81	0.19
11		0	1.19	4.02	1.07
12		0	0.89	4.03	1.14
13		0	0.75	4.18	0.57
14		0	1.11	3.96	0.16
15		0	1.40	2.67	0.53
16		0	0.98	4.16	1.44
17		0	0.64	4.60	0.56
18		0	0.80	4.47	0.28
19		0	1.49	3.19	0.22
20		0	1.18	3.47	1.13
	128	0	0.84	4.04	0.19
	129	0	1.02	4.30	0.20
	130	0	1.11	3.75	0.27
	131	0	0.87	3.76	0.43
	132	0	0.83	3.78	0.54
	133	0	1.07	3.95	0.17
	134	0	1.17	4.18	0.38
	135	0	0.55	4.77	0.24
	136	0	0.91	3.19	0.79
	137	0	1.38	3.50	0.26
	138	0	1.07	4.21	0.26
	139	0	0.52	4.63	0.36
	140	0	1.09	4.00	0.91
	141	0	1.34	3.74	0.44
	142	0	0.96	4.17	0.18
	143	0	0.78	4.71	1.16
	144	0	1.09	3.74	1.16
	145	0	1.42	3.31	0.55
	146	0	1.07	4.18	0.36
	147	0	0.81	4.77	0.44
	148	0	1.00	4.07	1.45



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 31 of 39

N261

Beam ID 1	Beam ID 2	Antenna Module	Front	Back	Top
0		0	0.87	3.33	0.43
1		0	0.90	3.23	0.46
2		0	0.70	3.54	0.37
3		0	0.57	3.73	0.52
4		0	0.49	3.75	0.59
5		0	0.81	3.65	0.99
6		0	1.09	3.90	0.40
7		0	1.16	3.75	0.26
8		0	1.13	3.46	0.59
9		0	1.09	3.88	0.29
10		0	1.12	3.94	0.11
11		0	1.16	3.62	0.40
12		0	0.96	3.71	0.65
13		0	1.25	4.09	0.23
14		0	1.13	4.33	0.07
15		0	1.00	4.48	0.63
16		0	0.93	4.27	1.37
17		0	1.14	4.08	0.26
18		0	1.23	4.27	0.11
19		0	1.12	4.35	0.14
20		0	0.94	4.39	1.11
	128	0	0.53	4.20	0.47
	129	0	0.54	3.50	0.40
	130	0	0.98	3.22	0.21
	131	0	0.93	3.46	0.34
	132	0	0.90	3.49	0.51
	133	0	1.04	3.81	0.78
	134	0	1.21	3.90	0.12
	135	0	1.14	3.98	0.49
	136	0	0.86	3.40	0.67
	137	0	0.98	4.18	0.21
	138	0	0.73	4.39	0.17
	139	0	1.00	3.22	0.43
	140	0	1.00	4.43	0.36
	141	0	1.16	4.37	0.11
	142	0	1.33	4.26	0.06
	143	0	1.31	4.16	0.65
	144	0	1.04	3.24	1.14
	145	0	1.09	4.50	0.19
	146	0	1.24	4.35	0.10
	147	0	1.38	4.26	0.10
	148	0	1.20	3.80	1.00



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 32 of 39

4cm²-averaged PD for the selected beams on **non-selected surfaces** for Δ_{min} determination

Band	Beam 1	Beam 2	Test ch./Freq. (Mhz)	Position	Power Setting	Input power level(dBm)	Test Separation	Measured PD (W/m ²)
n260	7	/	2254166/38500	Front Side	61	6.08	2mm	1.05
n260	/	147	2254166/38500	Back Side	30	2.93	2mm	3.33
n260	/	148	2254166/38500	Top Side	40	4.01	2mm	1.02
n261	/	147	2077916/27925	Front Side	22	2.16	2mm	0.964
n261	/	145	2077916/27925	Back Side	24	2.40	2mm	3.15
n261	16	/	2077916/27925	Top Side	26	2.63	2mm	0.965



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

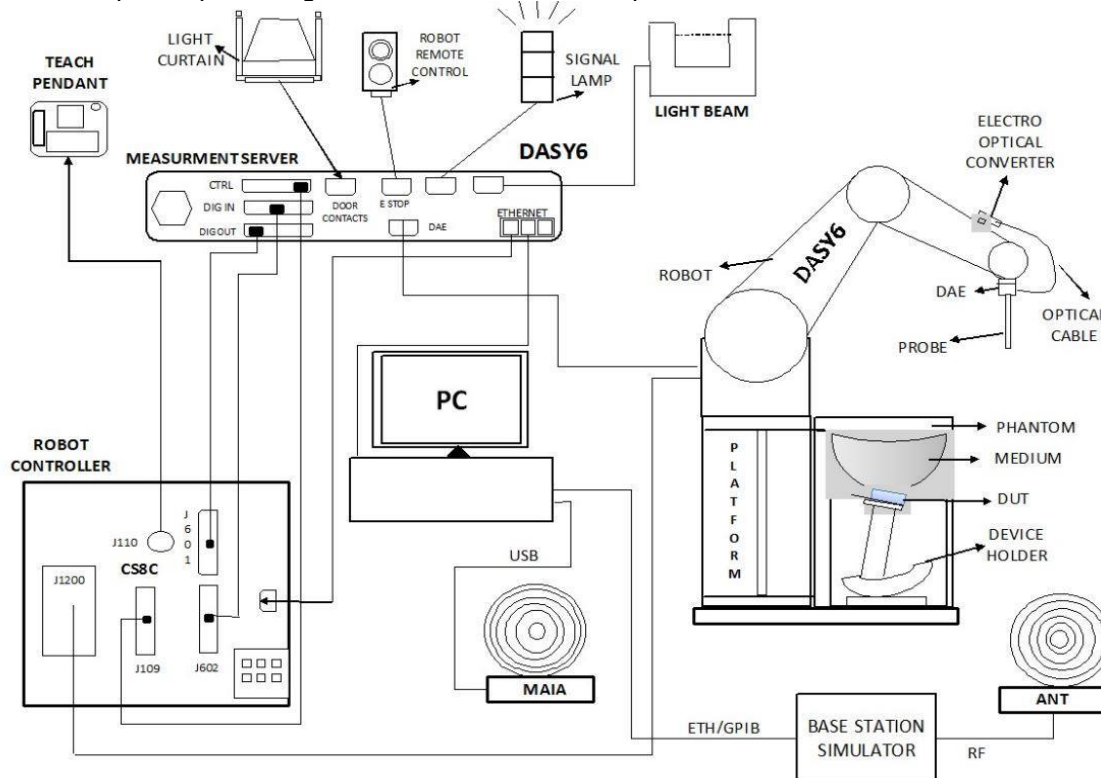
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

4 Measurements System Configuraion

4.1 Power density measurement system

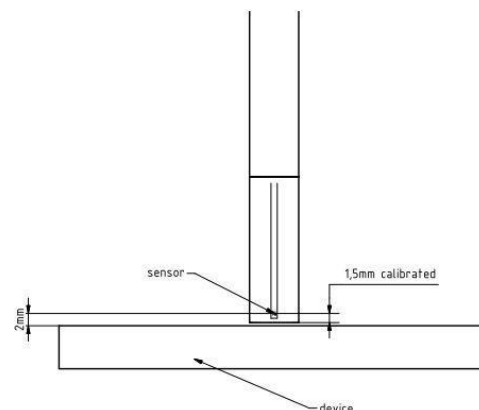
Power density measurements for mmWave frequencies were performed using SPEAG DASY6 with cDASY6 5G module. The DASY6 included a high precision robotics system (Staubli), robot controller, desktop computer, near-field probe, probe alignment sensor, and the 5G phantom cover.



4.2 E UmmWVx probe

The E UmmWVx probe is based on the pseudo-vector probe design, which not only measures the field magnitude but also derives its polarization ellipse. The design entails two small 0.8mm dipole sensors mechanically protected by high-density foam, printed on both sides of a 0.9mm wide and 0.12mm thick glass substrate. The body of the probe is specifically constructed to minimize distortion by the scattered fields. The probe consists of two sensors with different angles (1 and 2) arranged in the same plane in the probe axis. Three or more measurements of the two sensors are taken for different probe rotational angles to derive the amplitude and polarization information. The probe design allows measurements at distances as small as 2mm from the sensors to the surface of the device under test (DUT). The typical sensor to probe tip distance is 1.5 mm. The exact distance is calibrated.

Frequency	750 MHz – 110 GHz
Probe Overall Length	320 mm
Probe Body Diameter	8.0 mm
Tip Length	23.0 mm
Tip Diameter	8.0 mm
Probe's two dipoles length	0.9 mm – Diode loaded
Dynamic Range	< 20 V/m - 10000 V/m with PRE-10 (min < 50 V/m - 3000 V/m)
Position Precision	< 0.2 mm
Distance between diode sensors and probe's tip	1.5 mm
Minimum Mechanical separation between probe tip and a Surface	0.5 mm
Applications	E-field measurements of 5G devices and other mm-wave transmitters operating above 10GHz in < 2 mm distance from device (free-space) Power density, H-field and far-field analysis using total field reconstruction.
Compatibility	cDASY6 + 5G-Module SW1.0 and higher



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

4.3 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock. The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

4.4 Scan configuration

Fine-resolution scans on 2 different planes are performed to reconstruct the E- and H-fields as well as the power density; the z-distance between the 2 planes is set to $\lambda/4$. The (x, y) grid step is also set $\lambda/4$, the grid extent is set to sufficiently large to identify the field pattern and the peak.

4.5 System Verification Source

The System Verification sources at 30 GHz and above comprise horn-antennas and very stable signal generators.

Model	Ka-band horn antenna
Calibrated frequency:	30 GHz at 10mm from the case surface
Frequency accuracy	± 100 MHz
E-field polarization	linear
Harmonics	-20 dBc
Total radiated power	14 dBm
Power stability	0.05 dB
Power consumption	5 W
Size	100 x 100 x 100 mm
Weight	1 kg



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

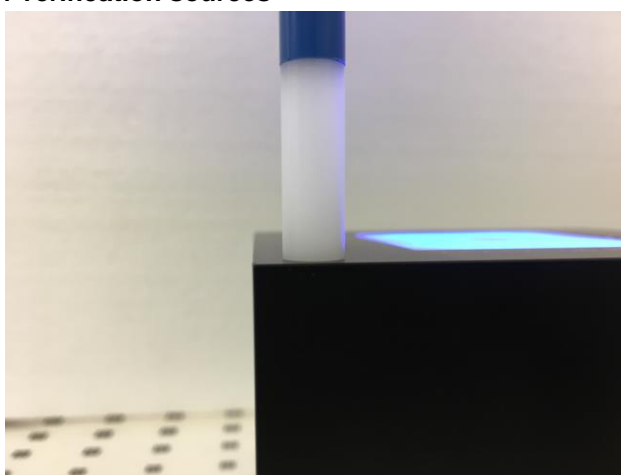
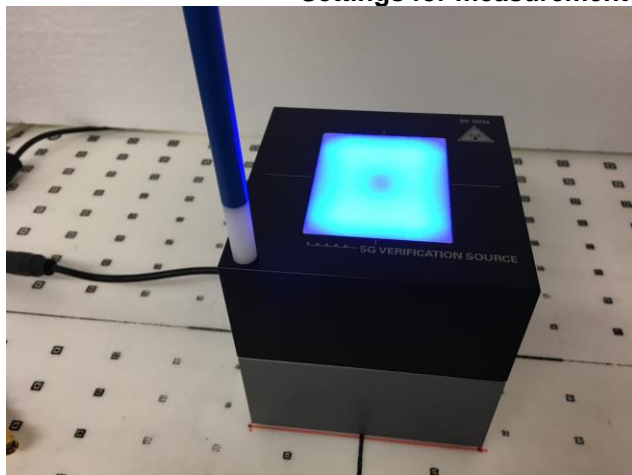
4.6 Power Density System Verification

The system performance check verifies that the system operates within its specifications.

The EUT is replaced by a calibrated source, the same spatial resolution, measurement region and the test separation used in the calibration was applied to system check. Through visual inspection into the measured power density distribution, both spatially (shape) and numerically (level) have no noticeable difference. The measured results should be within 0.66B of the calibrated targets.

Frequency [GHz]	Grid step	Grid extent X/Y [mm]	Measurement points
10	0.25 ($\frac{\lambda}{4}$)	120/120	16 × 16
30	0.25 ($\frac{\lambda}{4}$)	60/60	24 × 24
60	0.25 ($\frac{\lambda}{4}$)	32.5/32.5	26 × 26
90	0.25 ($\frac{\lambda}{4}$)	30/30	36 × 36

Settings for measurement of verification sources



4.7 System Verification Results

Frequency	Measured PD W/m ² 4cm ²	Target PD W/m ² 4cm ²	Circular Deviation (Within ±0.66dB) 4cm ²	Test Date
30GHz Source	34.70	33.3	0.18	2024/7/6
30GHz Source	33.90	33.3	0.08	2024/7/7
30GHz Source	36.70	33.3	0.42	2024/7/8
30GHz Source	33.50	33.3	0.03	2024/7/10



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

5 Uncertainty Assessment

The budget is valid for evaluation distances $> \lambda/2\pi$. For specific tests and configurations, the Uncertainty could be considerably smaller.

a	b	c	d	e	f=b*e/d	g
Error Description	Uncertainty Value (\pm dB)	Probability	Div.	Ci	Standard Uncertainty (\pm dB)	Vi (Veff)
Probe Calibration	0.49	N	1	1	0.49	∞
Probe correction	0.00	R	1.732	1	0.00	∞
Frequency response (BW \leq 1 GHz)	0.20	R	1.732	1	0.12	∞
Sensor cross coupling	0.00	R	1.732	1	0.00	∞
Isotropy	0.50	R	1.732	1	0.29	∞
Linearity	0.20	R	1.732	1	0.12	∞
Probe scattering	0.00	R	1.732	1	0.00	∞
Probe positioning offset	0.30	R	1.732	1	0.17	∞
Probe positioning repeatability	0.04	R	1.732	1	0.02	∞
Sensor mechanical offset	0.00	R	1.732	1	0.00	∞
Probe spatial resolution	0.00	R	1.732	1	0.00	∞
Field impedance dependance	0.00	R	1.732	1	0.00	∞
Amplitude and phase drift	0.00	R	1.732	1	0.00	∞
Amplitude and phase noise	0.04	R	1.732	1	0.02	∞
Measurement area truncation	0.00	R	1.732	1	0.00	∞
Data acquisition	0.03	N	1	1	0.03	∞
Sampling	0.00	R	1.732	1	0.00	∞
Field reconstruction	2.00	R	1.732	1	1.15	∞
Forward transformation	0.00	R	1.732	1	0.00	∞
Power density scaling	0.00	R	1.732	1	0.00	∞
Spatial averaging	0.10	R	1.732	1	0.06	∞
System detection limit	0.04	R	1.732	1	0.02	∞
Probe coupling with DUT	0.00	R	1.732	1	0.00	∞
Modulation response	0.40	R	1.732	1	0.23	∞
Integration time	0.00	R	1.732	1	0.00	∞
Response time	0.00	R	1.732	1	0.00	∞
Device holder influence	0.10	R	1.732	1	0.06	∞
DUT alignment	0.00	R	1.732	1	0.00	∞
RF ambient conditions	0.04	R	1.732	1	0.02	∞
Ambient reflections	0.04	R	1.732	1	0.02	∞
Immunity / secondary reception	0.00	R	1.732	1	0.00	∞
Drift of the DUT		R	1.732	1	0.00	∞
Combined Std. Uncertainty					1.33	
Expanded STD Uncertainty (95%), K=2					2.67	



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR240300076712

Page: 39 of 39

---END---



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com

Member of the SGS Group (SGS SA)