AUTHENTICS 300

Altavoz portátil de diseño retro, con Wi-Fi, Bluetooth y asistentes de voz.

PRODUCTO JBL AUTHENTICS 300 (en todas sus versiones de colores)

Información comercial del equipo y del fabricante o importador en Chile:

- **Fecha: 22 – FEBRERO - 2026**
- **Nombre comercial del equipo: JBL AUTHENTICS 300**
- **Fabricante**: Harman International Industries Inc.
- **Importador o representante en Chile**: Intcomex Chile -
- **Correo electrónico de contacto:** consultas@intcomex.com
- **Sitio web:** https://store.intcomex.com/es-xcl/home

	Información	Página / Documento
Tipo de equipo	Altavoz / Parlante portátil con Wifi y Bluetooth	
Marca	JBL	
Modelo	AUTHENTICS 300	
Tecnología o modulación	Wifi IEEE 802.11 a/b/g/n/ ac/ax (2,4GHz / 5GHz) / Bluetooth® 5.3 A2DP 1.2.3, AVRCP 1.5	2 -10
Frecuencias	Wi-Fi 5G: 5,15 ~ 5,35GHz, 5,470 ~ 5,725 GHz, 5,725 ~ 5,825 GHz / Wifi 2,4 G: 2412 – 2472MHz (banda ISM 2,4GHz) Bluetooth 2400 MHz – 2483,5 MHz	2-10
Ganancia de Antena (dBi)	Wifi 5 GHz: Antena 1: 3.16 dBi, Antena 2: 3.78 dBi / Wifi 2.5 G: Antena 1: 3.9 dBi, Antena 2: 2.94 dBi / Bluetooth Antena PFC 2.04 dBi	- DSS_SZCR230200047806-FCC ID MPE RPT - DSS_SZCR230200047802-FCC ID BT - DSS_SZCR230200047803-FCC ID BLE - DSS_SZCR230200047804-FCC ID 2.4G WIFI - SZCR230200047805-FCC ID 5G WIFI
P.I.R.E	Wifi 5G: 5,15 – 5,25GHz, 5,25 – 5,35GHz y 5,470 – 5,725 GHz <23 dBm, 5,725 – 5,825GHz <14 dBm / Wifi 2,4G: <20 dBm / Bluetooth < 13 dBm	
Módulos	Wifi 5G: 802.11 a/n OFDM (BPSK, QPSK, 16 QAM, 64 QAM), 802.11 ac OFDM (BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM), 802.11 ax OFDMA (BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM,1024 QAM) / Wifi 2,4 G: DSSS (DBPSK, DQPSK, CCK),OFDM (BPSK, QPSK, 16 QAM, 64 QAM), OFDMA(BPSK, QPSK, 16QAM, 64QAM,256 QAM, 1024 QAM) Bluetooth: GFSK, π/4 DQPSK, 8 DPSK	
Test Report	Informe de ensayo o test report	Documentos adjuntos TestReports-JBLAuthentics300

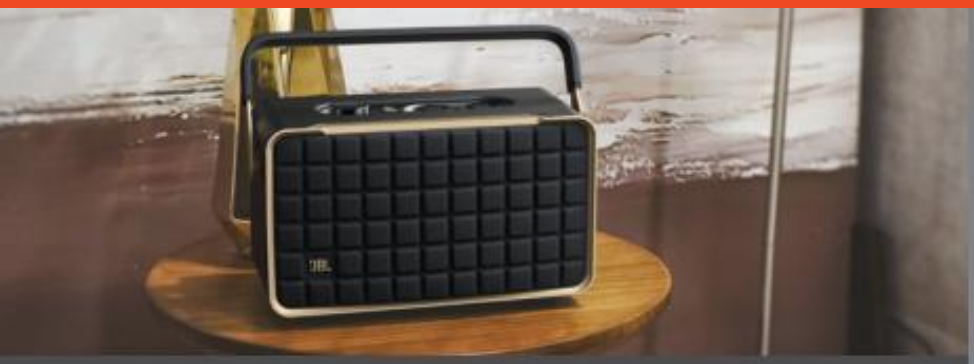
Declaración de conformidad:

Por este medio se declara que el equipo previamente individualizado cumple con las disposiciones establecidas en la Norma Técnica de Equipos de alcance reducido, aprobada por la resolución exenta N° 1.985, de 2017 y resolución exenta N° 737 de 2025, de la Subsecretaría de Telecomunicaciones, se anexan ensayos de laboratorio y la documentación asociada.

Santiago de Chile
Febrero 2026.-

AUTHENTICS 300

Altavoz portátil de diseño retro, con Wi-Fi, Bluetooth y asistentes de voz.



Características y ventajas

Magnífico rendimiento sonoro
Llena cualquier habitación de la casa con un sonido estéreo. Un par de altavoces de agudos de 25mm resaltarán los detalles de tu música, mientras que el altavoz de graves de 5,25 mm y el radiador pasivo de 6,5 mm ofrecen unos magníficos graves profundos. Estos componentes de primera calidad garantizan un equilibrio de audio perfecto, independientemente del tipo de música que estés escuchando.

Con un diseño de inspiración retro
JBL Authentics 300 ofrece un estilo icónico inspirado en los diseños retro clásicos de JBL, en un altavoz portátil que queda genial en cualquier entorno. Llenará fácilmente cualquier espacio con un sonido JBL superior, por grande o pequeño que sea. Además, la práctica asa de aluminio premium del altavoz, el receptáculo de piel personalizado y la rejilla Quadrex reinventada muestran la atención que prestamos a cada detalle visual, hasta el patrón especial característico de JBL que rodea el radiador pasivo de proyección descendente.

Batería incorporada
Disfruta en cualquier momento gracias a las 8 horas de reproducción, la batería integrada y el asa de transporte integrada que te permite llevar tu audio a cualquier parte.

Servicios de transmisión de música a través de Wi-Fi integrada
Disfruta de todo tu contenido, desde podcasts hasta radio por Internet, en una impresionante alta definición. O transmite tu música a través de AirPlay, Alexa Multi-Room Music (MRM), Chromecast built-in™ y Spotify Connect y sal de la habitación o haz llamadas sin interrumpir la música. La conexión Wi-Fi garantiza que el altavoz reciba actualizaciones automáticas de software y funciones.

Varios asistentes de voz* activos de manera simultánea en un dispositivo.
Google Assistant y Amazon Alexa están disponibles simultáneamente*. Ofrece a los clientes la mayor libertad y comodidad para controlar más dispositivos para casa inteligentes, reproducir más servicios de streaming de música y obtener ayuda manos libres de cualquiera de los asistentes en cualquier momento.

Conexión por Bluetooth perfecta
Comparte listas de reproducción sin problemas al conectar JBL Authentics 300 con cualquier dispositivo Bluetooth.

Controles intuitivos y aplicación JBL One
Personaliza tu audio con los controles intuitivos del altavoz, que ajustan el volumen, los graves y los niveles de agudos. Usa Alexa o Google Assistant para controlar el dispositivo con tu voz. O utiliza la aplicación JBL One para tener aún más opciones para personalizar el ecualizador y los ajustes y encontrar tu nueva canción favorita con los servicios de música integrados.

Reproducción en varias salas
Coloca varios altavoces JBL Authentics en toda tu casa para tu próxima quedada. Con la aplicación Google Home o Amazon Alexa, puedes establecer el ambiente que quieras en todas las habitaciones conectando dos o más altavoces a una sola lista de reproducción y haciendo que todo el mundo se mueva al mismo ritmo

Ajuste automático
Consigue un sonido siempre excelente y donde quieras. El altavoz calibra y optimiza automáticamente el rendimiento del audio para cada ubicación y cada vez que lo enciendes.

Elaborado en parte con tejido 100 % reciclado, plástico reciclado al 85 % y aluminio reciclado al 50 %
El altavoz Authentics 300 está fabricado con tejido 100 % reciclado, plástico reciclado al 85 % y aluminio reciclado al 50 %, y viene en una caja de cartón con certificación FSC impresa con tinta de soja.

*Amazon Alexa y Google Assistant no están disponibles en determinados países e idiomas. La disponibilidad, las características y la funcionalidad pueden variar.

Comprueba aquí tu país/idioma: https://www.jbl.com/services-availability.html

Especificaciones técnicas

Especificaciones generales
- Modelo: Authentics 300
- Sistema de sonido: Stereo 2.0
- Fuente de alimentación: 100 - 240 V, ~ 50/60 Hz
- Salida de potencia total del altavoz (máx. 1 % THD): 100 W
- Transductor: 2 altavoces de agudos de 25 mm + altavoz de 5,25 pulgadas
- Potencia de la red en espera: < 2,0 W
- Temperatura de funcionamiento: 0 °C - 45 °C
- Batería de litio: 3,6 V, 4800 mAh
- Tiempo de carga de la batería: < 3,5 horas
- Tiempo de reproducción de música: hasta 8 horas (en función del nivel de volumen y el contenido de audio)

Especificaciones de audio
- Respuesta de frecuencia: 45 - 20 kHz (-6 dB)
- Entrada de sonido: 1 entrada de audio, Bluetooth/WIFI, Ethernet, USB (la reproducción USB está disponible en la versión para EE. UU. Para otras versiones, el USB es solo para servicio).

Especificaciones de USB
- Puerto USB: Tipo C
- Valor nominal de la entrada USB: 5 V CC, 0,5 A
- Formato de archivo compatible: mp3, WAV
- MP3 Codec: MPEG 1 Capa 2/3, MPEG 2 Capa 3, MPEG 2.5 Capa 3
- Frecuencia de muestreo de MP3: 16 - 48 kHz
- Velocidad de bits de MP3: 80 - 320 kpbs

Especificaciones de conexión inalámbrica
- Versión Bluetooth: 5.3
- Perfil Bluetooth: A2DP 1.3.2, AVRCP 1.5
- Rango de frecuencias del transmisor Bluetooth: 2400 MHz - 2483.5 MHz
- Potencia del transmisor Bluetooth: < 13 dBm (EIRP)
- Red Wi-Fi: IEEE 802.11 a/b/g/n/ac/ax (2,4 GHz/5 GHz)
- Rango de frecuencia del transmisor wifi 2,4 G: 2412 - 2472 MHz (banda ISM 2,4 GHz, 11 canales en EE. UU. y otros 13 canales en Europa)
- Potencia del transmisor Wi-Fi 2,4G: < 20 dBm (EIRP)
- Rango de frecuencia del transmisor wifi 5G: 5,15 - 5,35 GHz, 5,470 - 5,725 GHz, 5,725 - 5,825 GHz
- Potencia del transmisor Wi-Fi 5G: 5,15 - 5,25 GHz <23 dBm, 5,25 - 5,35 GHz y 5,470 - 5,725 GHz <23 dBm, 5,725 - 5,825 GHz <14 dBm (EIRP)

Especificaciones de las dimensiones
- Dimensiones (an. x al. x pr.): 342 x 195,6 x 180, mm
- Peso:4,9 kg
- Dimensiones del embalaje (An x Al x P): 403 x 272 x 272 mm
- Peso del embalaje: 6,64 kg

Contenido de la caja

1 JBL Authentics 300
1 cable de alimentación
1 guía de inicio rápido
1 hoja de seguridad
1 tarjeta de garantía

TCB

GRANT OF EQUIPMENT AUTHORIZATION

TCB

Certification
Issued Under the Authority of the
Federal Communications Commission
By:

SGS North America, Inc.
620 Old Peachtree Road NW Suite 100
Suwanee, GA 30024

Date of Grant: 06/06/2023
Application Dated: 06/06/2023

Harman International Industries, Inc
8500 Balboa Boulevard
Northridge, CA 91329

Attention: Terry Shi , Prin.Engineer,Regulatory Compliance, Quality

NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

FCC IDENTIFIER: APIAUTH300
Name of Grantee: Harman International Industries, Inc
Equipment Class: Part 15 Spread Spectrum Transmitter
Notes: Wireless Speaker

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
CC	15C	2402.0 - 2480.0	0.0171		

Power Output listed is conducted. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and not be co-located with any other transmitters except in accordance with FCC multi-transmitter product procedures. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

CC: This device is certified pursuant to two different Part 15 rules sections.

TCB

GRANT OF EQUIPMENT AUTHORIZATION

Certification

Issued Under the Authority of the

Federal Communications Commission

By:

TCB

SGS North America, Inc.
620 Old Peachtree Road NW Suite 100
Suwanee, GA 30024

Date of Grant: 06/06/2023

Application Dated: 06/06/2023

Harman International Industries, Inc
8500 Balboa Boulevard
Northridge, CA 91329

Attention: Terry Shi , Prin.Engineer,Regulatory Compliance, Quality

NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

FCC IDENTIFIER: APIAUTH300
Name of Grantee: Harman International Industries, Inc
Equipment Class: Digital Transmission System
Notes: Wireless Speaker

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
CC	15C	2402.0 - 2480.0	0.0052		
CC MO	15C	2412.0 - 2462.0	0.0807		
CC MO	15C	2422.0 - 2452.0	0.0439		

Power Output listed is conducted. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and not be co-located with any other transmitters except in accordance with FCC multi-transmitter product procedures. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance. This device supports 20MHz and 40MHz bandwidth modes.

CC: This device is certified pursuant to two different Part 15 rules sections.

MO: This Multiple Input Multiple Output (MIMO) device was evaluated for multiple transmitted signals as indicated in the filing.

TCB

GRANT OF EQUIPMENT AUTHORIZATION

Certification

Issued Under the Authority of the

Federal Communications Commission

By:

TCB

SGS North America, Inc.
620 Old Peachtree Road NW Suite 100
Suwanee, GA 30024

Date of Grant: 06/06/2023

Application Dated: 06/06/2023

Harman International Industries, Inc
8500 Balboa Boulevard
Northridge, CA 91329

Attention: Terry Shi , Prin.Engineer,Regulatory Compliance, Quality

NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

FCC IDENTIFIER: APIAUTH300
Name of Grantee: Harman International Industries, Inc
Equipment Class: Unlicensed National Information Infrastructure TX
Notes: Wireless Speaker

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
CC MO	15E	5180.0 - 5240.0	0.0562		
CC MO	15E	5190.0 - 5230.0	0.0569		
CC MO	15E	5210.0 - 5210.0	0.0302		
CC MO	15E	5260.0 - 5320.0	0.0634		
CC MO	15E	5270.0 - 5310.0	0.0624		
CC MO	15E	5290.0 - 5290.0	0.0361		
CC MO	15E	5500.0 - 5700.0	0.0573		
CC MO	15E	5510.0 - 5670.0	0.057		
CC MO	15E	5530.0 - 5610.0	0.0384		
CC MO	15E	5745.0 - 5825.0	0.054		
CC MO	15E	5755.0 - 5795.0	0.0482		
CC MO	15E	5775.0 - 5775.0	0.0357		

Power Output listed is conducted. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and not be co-located with any other transmitters except in accordance with FCC multi-transmitter product procedures. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.
This device supports 20MHz, 40MHz, 80MHz bandwidth modes.

CC: This device is certified pursuant to two different Part 15 rules sections.

MO: This Multiple Input Multiple Output (MIMO) device was evaluated for multiple transmitted signals as indicated in the filing.

SGS

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

SZEMC-TRF-01 Rev. A/0 Aug01,2022

Report No.: SZCR230200047801
Page: 1 of 42

TEST REPORT

Application No.:	SZCR2302000478AT
Applicant:	Harman International Industries, Inc.
Address of Applicant:	8500 Balboa Boulevard, Northridge, California, 91329, United States
Manufacturer:	Harman International Industries, Inc.
Address of Manufacturer:	8500 Balboa Boulevard, Northridge, California, 91329, United States
Equipment Under Test (EUT):	
EUT Name:	Wireless Speaker
Model No.:	Authentics 300
Trade Mark:	JBL
Standard(s) :	47 CFR Part 15, Subpart B
Date of Receipt:	2023-02-24
Date of Test:	2023-03-23 to 2023-05-04
Date of Issue:	2023-05-12
Test Result:	**Pass***

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

Keny Xu
EMC Laboratory Manager

No.1 Workshop, M-101, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 2601 2053 f (86-755) 2671 0594 www.sgsgroup.com.cn
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SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/0 Aug01,2022

Report No.: SZCR230200047802
Page: 1 of 95

TEST REPORT

Application No.:	SZCR2302000478AT
Applicant:	Harman International Industries, Inc.
Address of Applicant:	8500 Balboa Boulevard, Northridge, California, 91329, United States
Manufacturer:	Harman International Industries, Inc.
Address of Manufacturer:	8500 Balboa Boulevard, Northridge, California, 91329, United States
Equipment Under Test (EUT):	
EUT Name:	Wireless Speaker
Model No.:	Authentics 300
Trade Mark:	JBL
FCC ID:	APIAUTH300
Standard(s) :	47 CFR Part 15, Subpart C 15.247
Date of Receipt:	2023-02-24
Date of Test:	2023-03-23 to 2023-05-04
Date of Issue:	2023-05-12
Test Result:	**Pass***

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

Keny Xu
EMC Laboratory Manager

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
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SZEMC-TRF-01 Rev. A/0 Aug01,2022

Report No.: SZCR230200047803
Page: 1 of 77

TEST REPORT

Application No.:	SZCR2302000478AT
Applicant:	Harman International Industries, Inc.
Address of Applicant:	8500 Balboa Boulevard, Northridge, California, 91329, United States
Manufacturer:	Harman International Industries, Inc.
Address of Manufacturer:	8500 Balboa Boulevard, Northridge, California, 91329, United States
Equipment Under Test (EUT):	
EUT Name:	Wireless Speaker
Model No.:	Authentics 300
Trade Mark:	JBL
FCC ID:	APIAUTH300
Standard(s) :	47 CFR Part 15, Subpart C 15.247
Date of Receipt:	2023-02-24
Date of Test:	2023-03-23 to 2023-05-04
Date of Issue:	2023-05-12
Test Result:	**Pass***

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

Kenny. xu

Keny Xu
EMC Laboratory Manager

No.1 Workshop, M-101, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
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SZEMC-TRF-01 Rev. A/0 Aug01,2022

Report No.: SZCR230200047804
Page: 1 of 352

TEST REPORT

Application No.:	SZCR2302000478AT
Applicant:	Harman International Industries, Inc.
Address of Applicant:	8500 Balboa Boulevard, Northridge, California, 91329, United States
Manufacturer:	Harman International Industries, Inc.
Address of Manufacturer:	8500 Balboa Boulevard, Northridge, California, 91329, United States
Equipment Under Test (EUT):	
EUT Name:	Wireless Speaker
Model No.:	Authentics 300
Trade Mark:	JBL
FCC ID:	APIAUTH300
Standard(s) :	47 CFR Part 15, Subpart C 15.247
Date of Receipt:	2023-02-24
Date of Test:	2023-03-23 to 2023-05-04
Date of Issue:	2023-05-12
Test Result:	**Pass***

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

Keny Xu
EMC Laboratory Manager

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

SZEMC-TRF-01 Rev. A/0 Aug01,2022

Report No.: SZCR230200047805
Page: 1 of 1027

TEST REPORT

Application No.:	SZCR2302000478AT
Applicant:	Harman International Industries, Inc.
Address of Applicant:	8500 Balboa Boulevard, Northridge, California, 91329, United States
Manufacturer:	Harman International Industries, Inc.
Address of Manufacturer:	8500 Balboa Boulevard, Northridge, California, 91329, United States
Equipment Under Test (EUT):	
EUT Name:	Wireless Speaker
Model No.:	Authentics 300
Trade Mark:	JBL
FCC ID:	APIAUTH300
Standard(s) :	47 CFR Part 15, Subpart E 15.407
Date of Receipt:	2023-02-24
Date of Test:	2023-03-23 to 2023-05-04
Date of Issue:	2023-05-12
Test Result:	**Pass***

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

Keny Xu
EMC Laboratory Manager

SGS

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

RF EXPOSURE EVALUATION REPORT

Application No.:	SZCR2302000478AT
Applicant:	Harman International Industries, Inc.
Address of Applicant:	8500 Balboa Boulevard, Northridge, California, 91329, United States
Manufacturer:	Harman International Industries, Inc.
Address of Manufacturer:	8500 Balboa Boulevard, Northridge, California, 91329, United States
Equipment Under Test (EUT):	
EUT Name:	Wireless Speaker
Model No.:	Authentics 300
Trade Mark:	JBL
FCC ID:	APIAUTH300
Standard(s) :	FCC Rules 47 CFR §2.1091
	KDB 447498 D04 interim General RF Exposure Guidance v01
Date of Receipt:	2023-02-24
Date of Evaluation:	2023-03-23 to 2023-05-04
Date of Issue:	2023-05-12
Evaluation Result:	**Pass***

* In the configuration evaluated, the EUT complied with the standards specified above.

Kenny Xu
EMC Laboratory Manager

Revision Record				
Version	***Chapter***	***Date***	***Modifier***	***Remark***
01		*2023-05-12*		*Original*

Authorized for issue by:				
		Charlie Dai		
		Charlie Dai/Project Engineer		
		Eric Fu		
		Eric Fu/Reviewer		

2 Contents

3 General Information

3.1 General Description of E.U.T.

Product Type:	☐ Portable device
	☒ Mobile device
	☐ Fixed device

3.2 Details of E.U.T.

Power supply:	Lithium-ion rechargeable battery (DC 3.6V 4800mAh) which can be charged from AC port. AC 100-240V 50/60Hz
Cable(s):	AC cable 210cm unshielded without ferrite core
For BT:	
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.3 Dual mode
Modulation Type:	GFSK, pi/4DQPSK, 8DPSK
Number of Channels:	79
Channel Spacing:	1MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)
Antenna Type:	FPC Antenna
Antenna Gain:	2.04dBi
For BLE:	
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.3 Dual mode
Modulation Type:	GFSK
Data Rate:	1Mbps, 2Mbps
Number of Channels:	40
Channel Spacing:	2MHz
Antenna Type:	FPC Antenna
Antenna Gain:	2.04dBi
For 2.4G WIFI	
Operation Frequency:	802.11b/g/n(HT20)/ax(HEW20): 2412MHz to 2462MHz; 802.11n(HT40)/ax(HEW40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK); 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK); 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Number of Channels:	802.11b/g/n(HT20)/ax(HEW20):11; 802.11n(HT40)/ax(HEW40):7

Channel Spacing:	5MHz
Antenna Type:	FPC Antenna
Antenna Gain:	Antenna 1: 3.9dBi, Antenna 2: 2.94dBi Directional gain: 6.44dBi
For 5G WIFI	
Operation Frequency/Number of channels (20MHz):	U-NII-1: 5180-5240MHz (4 Channels); U-NII-2A: 5260-5320MHz (4 Channels); U-NII-2C: 5500-5700MHz (11 Channels); U-NII-3: 5745-5825MHz (5 Channels)
Operation Frequency/Number of channels/(40MHz):	U-NII-1: 5190-5230MHz (2 Channels); U-NII-2A: 5270-5310MHz (2 Channels); U-NII-2C: 5510-5670MHz (5 Channels); U-NII-3: 5755-5795MHz (2 Channels)
Operation Frequency/Number of channels (80MHz):	U-NII-1: 5210MHz (1 Channel); U-NII-2A: 5290MHz (1 Channels); U-NII-2C: 5530-5610MHz (2 Channels); U-NII-3: 5775MHz (1 Channel)
Modulation Type:	802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM); 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Channel Spacing:	802.11a/n(HT20)/ac(VHT20)/ax(HEW20): 20MHz; 802.11n(HT40)/ac(VHT40)/ax(HEW40): 40MHz; 802.11ac(VHT80)/ax(HEW80): 80MHz
DFS Function:	Slave without Radar detection
TPC Function:	Support TPC function
Antenna Type:	FPC Antenna
Antenna Gain:	Antenna 1: 3.16dBi, Antenna 2: 3.78dBi Directional gain: 6.49dBi

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

3.3 Separation Distance

Minimum test separation distance:	20cm
Remark: This minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander.	

3.4 Test Location

All tests were performed at:

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

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

3.5 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 EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336

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

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

• Innovation, Science and Economic Development Canada

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

CAB identifier: CN0006.

IC#: 4620C.

3.6 Deviation from Standards

None

3.7 Abnormalities from Standard Conditions

None

4 FCC Radiofrequency radiation exposure limits

Test exemptions apply for devices used in general population/uncontrolled exposure environments, according to the SAR-based, or MPE-based exemption thresholds.

4.1 Blanket 1 mW Blanket Exemption

The 1 mW Blanket Exemption of §1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

The 1-mW blanket exemption applies at separation distances less than 0.5 cm, including where there is no separation. This exemption shall not be used in conjunction with other exemption criteria other than those for multiple RF sources in paragraph §1.1307(b)(3)(ii)(A).

The 1-mW exemption is independent of service type and covers the full range of 100 kHz to 100 GHz, but it shall not be used in conjunction with other exemption criteria or in devices with higher-power transmitters operating in the same time-averaging period. Exposure from such higher-power transmitters would invalidate the underlying assumption that exposure from the lower-power transmitter is the only contributor to SAR in the relevant volume of tissue.

4.2 MPE-based Exemption

General frequency and separation-distance dependent MPE-based effective radiated power (ERP) thresholds are in Table B.1 [Table 1 of §1.1307(b)(1)(i)(C)] to support an exemption from further evaluation from 300 kHz through 100 GHz.

Table B.1—Thresholds For Single RF Sources Subject to Routine Environmental Evaluation

RF Source Frequency			Minimum Distance			Threshold ERP
f_L MHz		f_H MHz	$\lambda_L / 2\pi$		$\lambda_H / 2\pi$	W
0.3	–	1.34	159 m	–	35.6 m	1,920 R^2
1.34	–	30	35.6 m	–	1.6 m	3,450 R^2/f^2
30	–	300	1.6 m	–	159 mm	3.83 R^2
300	–	1,500	159 mm	–	31.8 mm	0.0128 R^2f
1,500	–	100,000	31.8 mm	–	0.5 mm	19.2R^2
Subscripts L and H are low and high; λ is wavelength.						
From §1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.						

The table applies to any RF source (i.e. single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits. These criteria apply at separation distances from any part of the radiating structure of at least λ/2π. The thresholds are

based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator.

For mobile devices that are not exempt per Table B.1 [Table 1 of §1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in §1.1310 is necessary if the ERP of the device is greater than ERP_{20cm} in Formula (B.1) [repeated from §2.1091(c)(1); also in §1.1307(b)(1)(i)(B)].

$$P_{th}\,(\mathrm{mW}) = ERP_{20\,cm}\,(\mathrm{mW}) = \begin{cases} 2040f & 0.3\ \mathrm{GHz} \le f < 1.5\ \mathrm{GHz} \\ 3060 & 1.5\ \mathrm{GHz} \le f \le 6\ \mathrm{GHz} \end{cases} \qquad (B.1)$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of λ/4 or if the antenna gain is less than that of a half-wave dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

Limit calculation			
Frequency range	Frequency(MHz)	R(λ/2π)(m)	Threshold ERP(W)
300~1500MHz	**915**	0.0522	0.032
1500~100000MHz	**2480**	0.0193	0.007

4.3 SAR-based Exemption

SAR-based thresholds are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum time-averaged power or maximum time-averaged ERP, whichever is greater.

If the ERP of a device is not easily determined, such as for a portable device with a small form factor, the applicant may use the available maximum time-averaged power exclusively if the device antenna or radiating structure does not exceed an electrical length of λ/4.

As for devices with antennas of length greater than λ/4 where the gain is not well defined, but always less than that of a half-wave dipole (length λ/2), the available maximum time-averaged power generated by the device may be used in place of the maximum time-averaged ERP, where that value is not known.

The separation distance is the smallest distance from any part of the antenna or radiating structure for all persons, during operation at the applicable ERP. In the case of mobile or portable devices, the separation distance is from the outer housing of the device where it is closest to the antenna.

The SAR-based exemption formula of §1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th}\,(\mathrm{mW}) = \begin{cases} ERP_{20\,\mathrm{cm}}(d/20\,\mathrm{cm})^{x} & d \le 20\,\mathrm{cm} \\ ERP_{20\,\mathrm{cm}} & 20\,\mathrm{cm} < d \le 40\,\mathrm{cm} \end{cases} \qquad (\mathrm{B.2})$$

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\,\mathrm{cm}}\sqrt{f}}\right)$$

and f is in GHz, d is the separation distance (cm), and ERP_{20cm} is per Formula (B.1).

Example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance(mm)									
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

Limit calculation				
Frequency range(GHz)	Frequency(GHz)	X	Distance(cm)	Pth (mW)
0.3~1.5	**0.915**	1.474	**0.5**	**8.133**
1.5~6	**2.48**	1.905	**0.5**	**2.717**

5 Measurement and Calculation

5.1 Maximum transmit power

For BT/BLE:

The Power Data is based on the RF Test Report SZCR230200047802 & SZCR230200047803.

Antenna Gain: 2.04dBi

Output Power Into Antenna & RF Exposure Evaluation Distance

Frequency	Maximum EIRP [dBm]	Maximum EIRP (mW)
2402	14.38	27.42

For 2.4G WIFI:

The Power Data is based on the RF Test Report SZCR230200047804.

Antenna Gain: Antenna 1: 3.9dBi, Antenna 2: 2.94dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Frequency	Maximum EIRP [dBm]	Maximum EIRP (mW)
2462	22.51	178.24

For 5G WIFI:

The Power Data is based on the RF Test Report SZCR230200047805.

Antenna Gain: Antenna 1: 3.16dBi, Antenna 2: 3.78dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Frequency	Maximum Conducted Power/EIRP [dBm]	Maximum Conducted Power/EIRP (mW)
5180	21.49	140.93

The distance r (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.

5.2 RF Exposure Calculation

Remark: we used the maximum power between the conducted power and ERP/EIRP to perform RF exposure exemption evaluation.

For BT/BLE:

The Max EIRP is 27.42mW. The best case gain of the antenna is 2.04dBi.

	Evaluation method	Exempt Limit(mW)	Verdict
☐	Blanket 1 mW Blanket Exemption	1mW	N/A
☐	MPE-based Exemption(ERP)	7mW(ERP)	N/A
☒	SAR-based Exemption(P_{th})	3060	Yes

For 2.4G WIFI:

The Max EIRP is 178.24mW. The best case gain of the antenna is Antenna 1: 3.9dBi, Antenna 2: 2.94dBi.

	Evaluation method	Exempt Limit(mW)	Verdict
☐	Blanket 1 mW Blanket Exemption	1mW	N/A
☐	MPE-based Exemption(ERP)	7mW(ERP)	N/A
☒	SAR-based Exemption(P_{th})	3060	Yes

For 5G WIFI:

The Max EIRP is 140.93mW. The best case gain of the antenna is Antenna 1: 3.16dBi, Antenna 2: 3.78dBi.

	Evaluation method	Exempt Limit(mW)	Verdict
☐	Blanket 1 mW Blanket Exemption	1mW	N/A
☐	MPE-based Exemption(ERP)	7mW(ERP)	N/A
☒	SAR-based Exemption(P_{th})	3060	Yes

So, the device is to qualify for SAR test exemption, the exemption report is in lieu of the SAR report.

Exposure condition for simultaneous transmission operations

Either SAR-based or MPE-based exemption may be considered for test exemption for fixed, mobile, or portable device exposure conditions; therefore, the contributions from each exemption in conjunction with the measured SAR (Evaluatedk term) shall be used to determine exemption for simultaneous transmission according to Formula (C.1) [repeated from § 1.1307(b)(3)(ii)(B)].

$$\sum_{i=1}^{a}\frac{P_i}{P_{th,i}}+\sum_{j=1}^{b}\frac{ERP_j}{ERP_{th,j}}+\sum_{k=1}^{c}\frac{Evaluated_k}{Exposure\ Limit_k}\leq 1 \qquad (C.1)$$

Remark:

a -number of fixed, mobile, or portable RF sources claiming exemption using the §1.1307(b)(3)(i)(B) formula for Pth, including existing exempt transmitters and those being added.

b -number of fixed, mobile, or portable RF sources claiming exemption using the applicable § 1.1307(b)(3)(i)(C) Table 1 formula for Threshold ERP, including existing exempt transmitters and those being added.

c -number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance.

Pi -the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).

Pth,i -the exemption threshold power (Pth) according to the § 1.1307(b)(3)(i)(B) formula for fixed, mobile, or portable RF source i.

ERP_j -the available maximum time-averaged power or the ERP, whichever is greater, of fixed, mobile, or portable RF source j. $ERP_{th,j}$ -exemption threshold ERP for fixed, mobile, or portable RF source j, at a distance of at least λ/2π, according to the applicable § 1.1307(b)(3)(i)(C) Table 1 formula at the location in question.

$Evaluated_k$ -the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation.

$Exposure\ Limit_k$ -either the general population\uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable sources, as applicable

The Max. sum of the ratios = 27.42mW/3060mW + 178.24mW/3060mW = 0.0672< 1

Therefore, the device is to qualify for simultaneous transmission SAR test exemption, the exemption report is in lieu of the SAR report.

--End of the Report--