

RF Exposure Evaluation Report

Product Name : PanaCast 50
Model No. : VSM020
FCC ID : BCE-VSM020

Applicant : GN Audio A/S
Address : Lautrupbjerg 7, 2750 Ballerup, Denmark

Date of Receipt : Dec. 21, 2020
Date of Declaration : Feb. 19, 2021
Report No. : 20C0767R-E3082100013
Report Version : V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

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Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Issued Date: Feb. 19, 2021

Report No.: 20C0767R-E3082100013



Product Name	PanaCast 50	
Applicant	GN Audio A/S	
Address	Lautrupbjerg 7, 2750 Ballerup, Denmark	
Manufacturer	GN Audio A/S	
Model No.	VSM020	
FCC ID.	BCE-VSM020	
Trade Name	Jabra	
Applicable Standard	KDB 447498 D01 v06	<input checked="" type="checkbox"/> Minimum test separation distance \geq 20 cm <input type="checkbox"/> For low power devices
Test Result	Complied	

Documented By : Ida Tung

(Adm. Specialist / Ida Tung)

Tested By : wen Lee

(Senior Engineer / Wen Lee)

Approved By : 

(Director / Vincent Lin)

Revision History

Report No.	Version	Description	Issued Date
20C0767R-E3082100013	V1.0	Initial issue of report.	Feb. 19, 2021

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	PanaCast 50
Trade Name	Jabra
Model No.	VSM020
FCC ID.	BCE-VSM020
Frequency Range	802.11b/g/n-20MHz: 2412-2462MHz, 802.11n40: 2422-2452MHz 802.11a/n-20MHz: 5180-5320MHz, 5500-5720MHz, 5745-5825MHz 802.11n-40MHz: 5190-5310, 5510-5710MHz, 5755-5795MHz 802.11ac-80MHz: 5210-5290MHz, 5530-5690MHz, 5775MHz BT: 2402 – 2480MHz
Channel Number	802.11b/g/n-20MHz: 11, 802.11n40: 7CH 802.11a/n-20MHz: 25; 802.11n-40MHz: 12, 802.11ac-80MHz: 6 Bluetooth: V2.1+EDR: 79CH, V5.0: 40CH
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11a/g/n/ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) BT: V2.1+EDR: GFSK(1Mbps) / π / 4DQPSK(2Mbps) / 8DPSK(3Mbps), V5.0: GFSK(1Mbps,2Mbps)
Channel Control	Auto
Antenna Type	PIFA Antenna
Antenna Gain	Refer to the table “Antenna List”
Contain Module	Qualcomm / WCN3980

1.2. Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	GN Audio A/S	PanaCast 50	PIFA Antenna	4.16dBi for 2.4 GHz -0.46dBi for 5.150-5.250 GHz -0.46dBi for 5.250-5.350 GHz -0.60dBi for 5.470-5.725 GHz 0.01dBi for 5.725~5.85GHz

2. RF Exposure Evaluation

2.1. Standard Applicable

According to KDB 447498 D01 (7.1), A minimum test separation distance ≥ 20 cm is required between the antenna and radiating structures of the device and nearby persons to apply mobile device exposure limits.

2.2. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

2.3. Test Result of RF Exposure Evaluation

Product : PanaCast 50
 Test Item : RF Exposure Evaluation

WLAN 2.4G Peak Gain: 4.16dBi

Channel	Frequency	Conducted Peak Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mWc/m ²)	Pass/Fail
9	2452	18.76	75.162	0.0390	1	Pass

Note: The conducted output power is refer to report No.: 20C0767R-E3032110108, 20C0767R-E3032110113 from the DEKRA.

WLAN 5G Peak Gain: 0.01dBi

Channel	Frequency	Conducted Peak Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mWc/m ²)	Pass/Fail
60	5300	14.97	31.405	0.0063	1	Pass

Note: The conducted output power is refer to report No.: 20C0767R-E3032110125 from the DEKRA.