Bensussen Deutsch & Associates, LLC.

TEST REPORT

SCOPE OF WORK
FCC TESTING–1514775-02

REPORT NUMBER
SZHH01487333-005

ISSUE DATE	**[REVISED DATE]**
September 25, 2020	[--------------------]

PAGES
27

DOCUMENT CONTROL NUMBER
FCC ID 249_C

Bensussen Deutsch & Associates, LLC.

Application For Certification

FCC ID: YFK-151477502EA

NSW NANO ENHANCED WIRELESS CONTROLLER

Model: 1514775-02
Additional Model: 1516711-02

2.4GHz Transceiver

Report No.: SZHH01487333-005

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-19]

Prepared and Checked by:

Sign on file

Terry Tang
Assistant Supervisor

Approved by:

Peter Kang
Senior Technical Supervisor
Date: September 25, 2020

Intertek Testing Services Shenzhen Ltd. Longhua Branch
101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community, GuanHu Subdistrict, LongHua District, ShenZhen, P.R. China
Tel: (86 755) 8601 6288 Fax: (86 755) 8601 6751

MEASUREMENT/TECHNICAL REPORT

This report concerns (check one:) Original Grant __X__ Class II Change _____

Equipment Type: DXX - Part 15 Low Power Communication Device Transmitter

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Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes _____ No __X__

If yes, defer until: ______________________
date

Company Name agrees to notify the Commission by: ________________________________
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes _____ No __X__

If no, assumed Part 15, Subpart C for intentional radiator – the new 47 CFR [10-1-19 Edition] provision.

Report prepared by:

Terry Tang
Intertek Testing Services Shenzhen Ltd. Longhua Branch
101, 201, Building B, No. 308 Wuhe Avenue,
Zhangkengjing Community, GuanHu Subdistrict,
LongHua District, ShenZhen, P.R. China
Tel / Fax: 86-755-8614 0743/86-755-8601 6661

Table of Contents

1.0 Summary of Test Result

Applicant: Bensussen Deutsch & Associates, LLC.
Applicant Address: 15525 Woodinville-Redmond Road, NE Woodinville, Washington United States
Manufacturer: Bensussen Deutsch & Associates, LLC.
Manufacturer Address: 15525 Woodinville- Redmond Road, NE Woodinville, Washington United States

MODEL: 1514775-02

FCC ID: YFK-151477502EA

Test Specification	Reference	Results
Transmitter Radiated Emission	15.249 &15.209 &15.205	Pass
Conducted Emission	15.207	Pass
Bandedge	15.249 &15.209 &15.205	Pass
20dB Bandwidth	15.215(c)	Pass

Notes: The EUT uses an Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

2.0 General Description

2.1 Product Description

The equipment under test (EUT) is a NSW NANO ENHANCED WIRELESS CONTROLLER with Bluetooth function operating in 2402-2480MHz. The EUT is powered by DC 3.7V by rechargeable battery or DC 5V by USB port. For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna
Modulation Type: GFSK, π/4-DQPSK and 8-DPSK
Antenna Gain: 4dBi Max
Bluetooth Version: 5.0(Single model)

The Additional Model: 1516711-02 is the same as the Model: 1514775-02 in hardware and electrical aspect. The difference in model number, production name and trade name serve as marketing strategy.

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

2.2 Related Submittal(s) Grants

This is an application for certification of a transceiver for the NSW NANO ENHANCED WIRELESS CONTROLLER which has Bluetooth function, and related report for FCC SDOC is subjected to report number: SZHH01487333-006.

2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10 (2013). Radiated emission measurement was performed in Semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst-case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "Justification Section" of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

2.4 Test Facility

The Semi-Anechoic chamber and shield room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Longhua Branch** and located at 101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community, GuanHu Subdistrict, LongHua District, ShenZhen, P.R. China. This test facility and site measurement data have been fully placed on file with the FCC (Registration Number: CN1188).

3.0 System Test Configuration

3.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.10 (2013).

The EUT is powered by DC 3.7V full rechargeable battery and charged by DC 5V through adapter during the test, only the worst data was reported in this report.

All packets DH1, DH3 & DH5 mode in modulation type GFSK, π/4-DQPSK and 8-DPSK were tested and only the worst data was reported in this report.

For maximizing emissions below 30 MHz, the EUT was rotated through 360°, the centre of the loop antenna was placed 1 meter above the ground, and the antenna polarization was changed. For maximizing emissions, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Section 4.

The rear of unit shall be flushed with the rear of the table.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was placed on a turn table, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

3.2 EUT Exercising Software

The EUT exercise program (provided by applicant) used during testing was designed to exercise the various system components in a manner similar to a typical use.
Test software: CyBluetool 0.1.55.1

3.3 Special Accessories

No special accessories used.

3.4 Equipment Modification

Any modifications installed previous to testing by Bensussen Deutsch & Associates, LLC. will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Longhua Branch.

3.5 Measurement Uncertainty

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

Measurement Uncertainty	Uncertainty
Channel Bandwidth	±3.46%
Conducted Unwanted Emission	±0.55dB
Spurious emission (6GHz to 18GHz)	±5.1dB
Radiated emission (1GHz to 6GHz)	±4.8dB
Radiated emission (Up to 1GHz)	±4.8dB
AC Conducted emission	±3.6 dB
Temperature	±1°C
Humidity	±5%

3.6 Support Equipment List and Description

Description	Manufacturer	Remark
Adaptor (Provided by Intertek)	XIAOMI	Mode: MDY-08-EO Input: AC110-240V, 50/60Hz, 0.35A; Out put DC 5.0V, 2A
USB cable (Provided by applicant)	Provided by applicant	Un-shielded, 180cm
SWITCH (Provided by Applicant)	Nintendo	HAT-002 HAT-S-ED-C1

4.0 Emission Results

Data is included worst-case configuration (the configuration which resulted in the highest emission levels).

4.1 Radiated Test Results

A sample calculation, configuration photographs and data tables of the emissions are included.

4.1.1 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

FS = RA + AF + CF - AG + PD + AV

Where FS = Field Strength in dBμV/m
RA = Receiver Amplitude (including preamplifier) in dBμV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
PD = Pulse Desensitization in dB
AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

FS = RA + AF + CF - AG + PD + AV

Assume a receiver reading of 62.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB, and the resultant average factor was -10 dB. The net field strength for comparison to the appropriate emission limit is 32 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 62.0 dBμV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
PD = 0 dB
AV = -10 dB
FS = 62 + 7.4 + 1.6 - 29 + 0 = 42 dBμV/m

Level in μV/m = Common Antilogarithm [(42 dBμV/m)/20] = 125.9 μV/m

4.1.2 Radiated Emission Configuration Photograph

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated photos. pdf.

4.1.3 Radiated Emissions

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Worst Case Radiated Emission
at
130.880000 MHz

Judgement: Passed by 19.6 dB

TEST PERSONNEL:

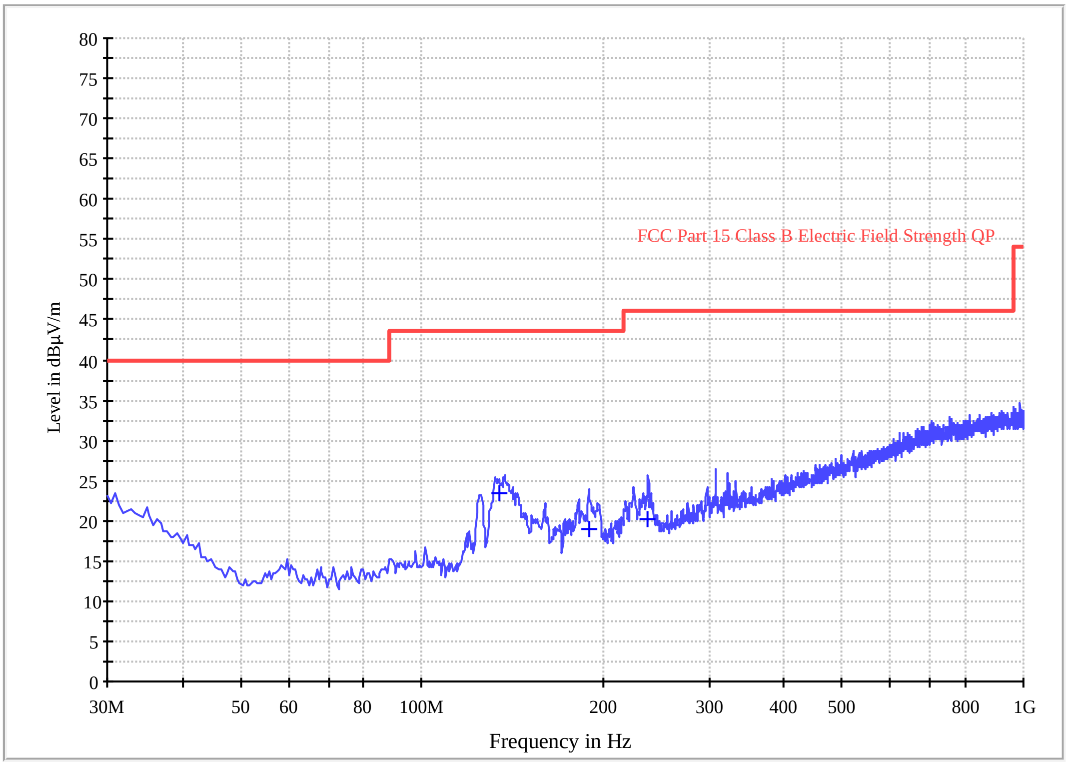
Sign on file

Terry Tang, Assistant Supervisor
Typed/Printed Name

August 24, 2020
Date

Applicant: Bensussen Deutsch & Associates, LLC.
Date of Test: August 24, 2020 Model: 1514775-02
Worst Case Operating Mode: BT Link

ANT Polarity: Horizontal



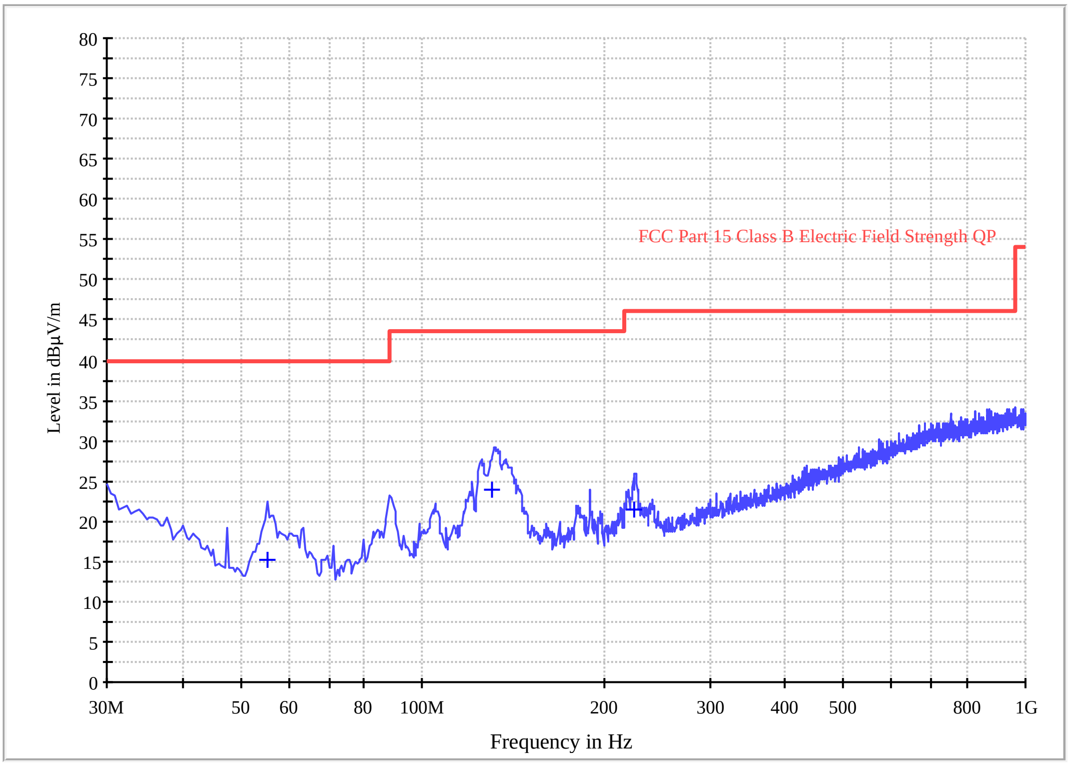
Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
135.000000	23.4	1000.0	120.000	H	10.5	20.1	43.5
190.535000	18.9	1000.0	120.000	H	12.9	24.6	43.5
237.580000	20.1	1000.0	120.000	H	14.3	25.9	46.0

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBµV/m)= Corr. (dB/m)+ Read Level (dBµV)
3. Margin (dB) = Limit Line(dBµV/m) – Level (dBµV/m)

Applicant: Bensussen Deutsch & Associates, LLC.
Date of Test: August 24, 2020 Model: 1514775-02
Worst Case Operating Mode: BT Link

ANT Polarity: Vertical



Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
55.220000	15.3	1000.0	120.000	V	7.8	24.7	40.0
130.880000	23.9	1000.0	120.000	V	10.5	19.6	43.5
224.970000	21.4	1000.0	120.000	V	13.8	24.6	46.0

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBµV/m)= Corr. (dB/m)+ Read Level (dBµV)
3. Margin (dB) = Limit Line(dBµV/m) – Level (dBµV/m)

4.1.4 Transmitter Spurious Emissions (Radiated)

Worst Case Radiated Emission
at
4882.000 MHz

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated photos. pdf.

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgement: Passed by 23.5 dB

TEST PERSONNEL:

Sign on file

Terry Tang, Assistant Supervisor
Typed/Printed Name

August 24, 2020
Date

Applicant: Bensussen Deutsch & Associates, LLC.
Date of Test: August 24, 2020 Model: 1514775-02
Worst Case Operating Mode: Transmitting

Table 1

Radiated Emissions

(2402MHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2402.000	95.3	36.7	28.1	86.7	114.0	-27.3
Horizontal	4804.000	51.3	36.7	35.5	50.1	74.0	-23.9

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (-dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2402.000	95.3	36.7	28.1	22.5	64.2	94.0	-29.8
Horizontal	4804.000	51.3	36.7	35.5	22.5	27.6	54.0	-26.4

Notes:
1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meter. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.

Applicant: Bensussen Deutsch & Associates, LLC.
Date of Test: August 24, 2020 Model: 1514775-02
Worst Case Operating Mode: Transmitting

Table 2

Radiated Emissions

(2441MHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2441.000	95.9	36.7	28.1	87.3	114.0	-26.7
Horizontal	4882.000	51.7	36.7	35.5	50.5	74.0	-23.5

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (-dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2441.000	95.9	36.7	28.1	22.5	64.8	94.0	-29.2
Horizontal	4882.000	51.7	36.7	35.5	22.5	28.0	54.0	-26.0

Notes:
1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meter. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.

Applicant: Bensussen Deutsch & Associates, LLC.
Date of Test: August 24, 2020 Model: 1514775-02
Worst Case Operating Mode: Transmitting

Table 3

Radiated Emissions

(2480MHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2480.000	95.4	36.7	28.1	86.8	114.0	-27.2
Horizontal	4960.000	51.6	36.7	35.5	50.4	74.0	-23.6

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (-dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2480.000	95.4	36.7	28.1	22.5	64.3	94.0	-29.7
Horizontal	4960.000	51.6	36.7	35.5	22.5	27.9	54.0	-26.1

Notes:
1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meter. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.

4.2 Conducted Emission Configuration Photograph

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: conducted photos.pdf.

4.2.1 Conducted Emission

Worst Case Conducted Configuration
at
0.526000MHz

Judgement: Passed by 11.8dB margin

TEST PERSONNEL:

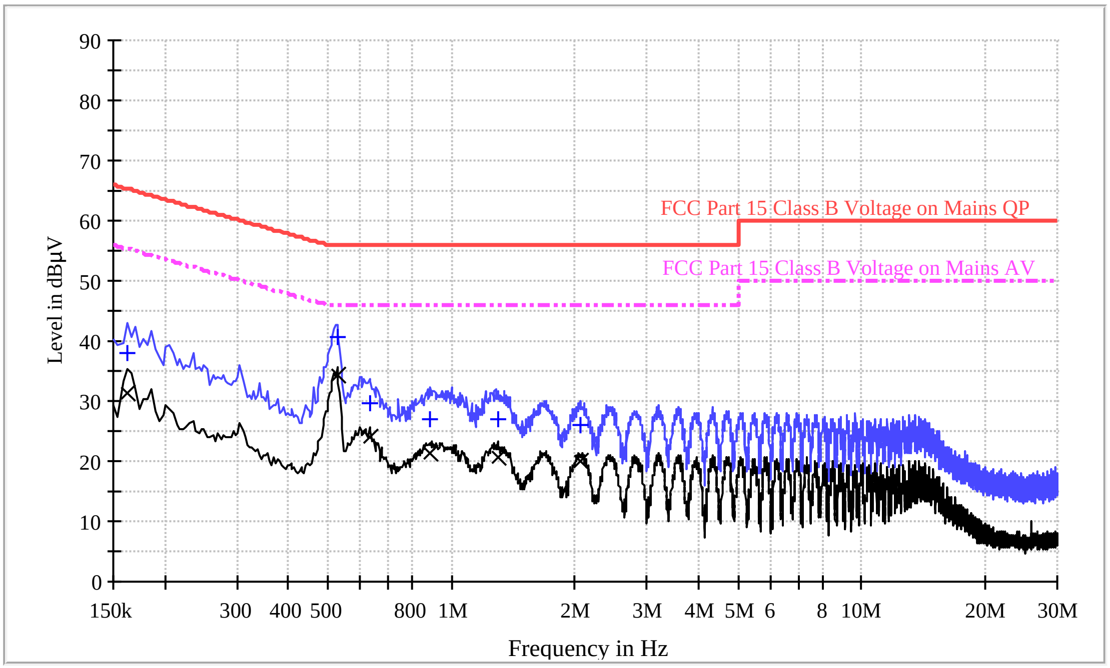
Sign on file

Terry Tang, Assistant Supervisor
Typed/Printed Name

August 24, 2020
Date

Applicant: Bensussen Deutsch & Associates, LLC.
Date of Test: August 24, 2020 Model: 1514775-02
Worst Case Operating Mode: BT Link
Phase: Live

Graphic / Data Table
Conducted Emissions
Pursuant to FCC 15.207: Emissions Requirement



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.162000	37.8	9.000	L1	9.7	27.6	65.4
0.526000	40.5	9.000	L1	9.7	15.5	56.0
0.630000	29.7	9.000	L1	9.7	26.3	56.0
0.890000	27.1	9.000	L1	9.7	28.9	56.0
1.294000	26.9	9.000	L1	9.7	29.1	56.0
2.070000	26.1	9.000	L1	9.7	29.9	56.0

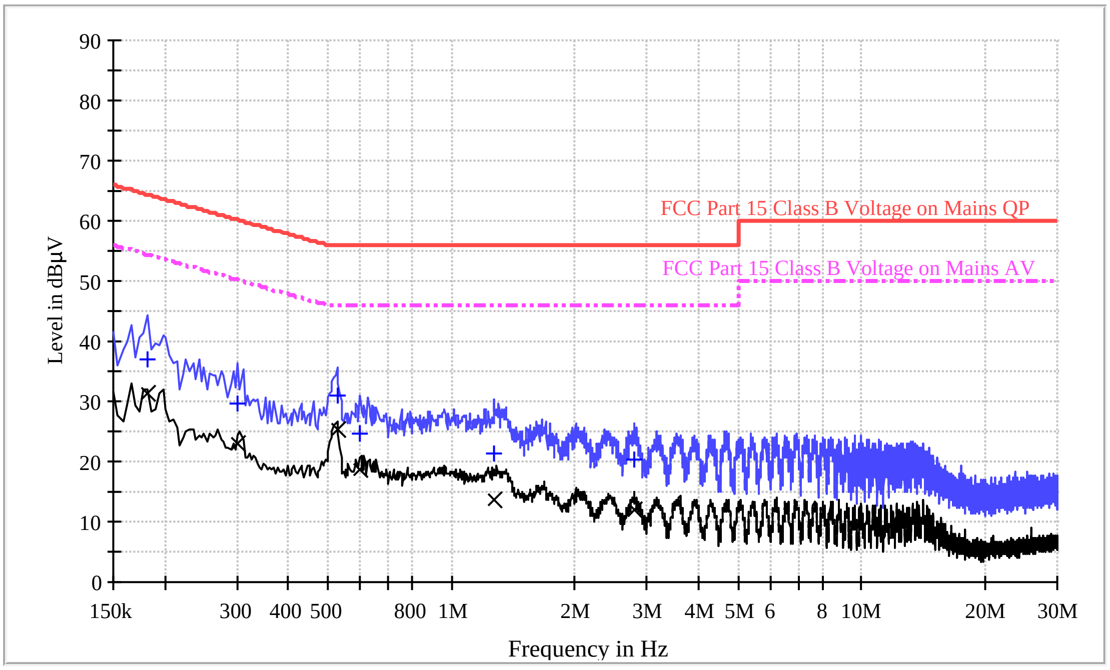
Limit and Margin AV

Frequency (MHz)	Average (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.162000	31.4	9.000	L1	9.7	24.0	55.4
0.526000	34.2	9.000	L1	9.7	11.8	46.0
0.630000	24.1	9.000	L1	9.7	21.9	46.0
0.890000	21.3	9.000	L1	9.7	24.7	46.0
1.294000	20.8	9.000	L1	9.7	25.2	46.0
2.070000	20.1	9.000	L1	9.7	25.9	46.0

Remark:
1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Limit (dBuV) – Level (dBuV)

Applicant: Bensussen Deutsch & Associates, LLC.
Date of Test: August 24, 2020 Model: 1514775-02
Worst Case Operating Mode: BT Link
Phase: Neutral

Graphic / Data Table
Conducted Emissions
Pursuant to FCC 15.107: Emissions Requirement



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.182000	37.2	9.000	N	9.7	27.2	64.4
0.302000	29.7	9.000	N	9.7	30.5	60.2
0.526000	31.0	9.000	N	9.7	25.0	56.0
0.598000	24.5	9.000	N	9.7	31.5	56.0
1.274000	21.5	9.000	N	9.7	34.5	56.0
2.786000	20.4	9.000	N	9.8	35.6	56.0

Limit and Margin AV

Frequency (MHz)	Average (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.182000	31.2	9.000	N	9.7	23.2	54.4
0.302000	22.8	9.000	N	9.7	27.4	50.2
0.526000	25.3	9.000	N	9.7	20.7	46.0
0.598000	18.6	9.000	N	9.7	27.4	46.0
1.274000	13.7	9.000	N	9.7	32.3	46.0
2.786000	12.0	9.000	N	9.8	34.0	46.0

Remark:
1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Limit (dBuV) – Level (dBuV)

5.0 Equipment Photographs

For electronic filing, the photographs of the tested EUT are saved with filename: external photos.pdf & internal photos.pdf.

6.0 Product Labelling

For electronic filing, the FCC ID label artwork and the label location are saved with filename: label.pdf.

7.0 Technical Specifications

For electronic filing, the block diagram and schematics of the tested EUT are saved with filename: block.pdf and circuit.pdf respectively.

8.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

9.0 Miscellaneous Information

This miscellaneous information includes details of the measured bandedge, 20dB Bandwidth, the test procedure and calculation of factor such as pulse desensitization.

9.1 Bandedge Plot

The test plots are attached as below. From the below plots, the field strength of any emissions outside of the specified frequency band are attenuated to the general radiated emission limits in section 15.209. It fulfils the requirement of 15.249(d).

Peak Measurement

Bandedge compliance is determined by applying marker-delta method, i.e (Bandedge Plot).

(i) Lower channel 2402.000MHz:

Peak Resultant field strength = Fundamental emissions (peak value) – delta from the bandedge plot

= 86.7 dBµV/m - 41.4 dB

= 45.3dBµV/m

(ii) Upper channel 2480.000MHz:

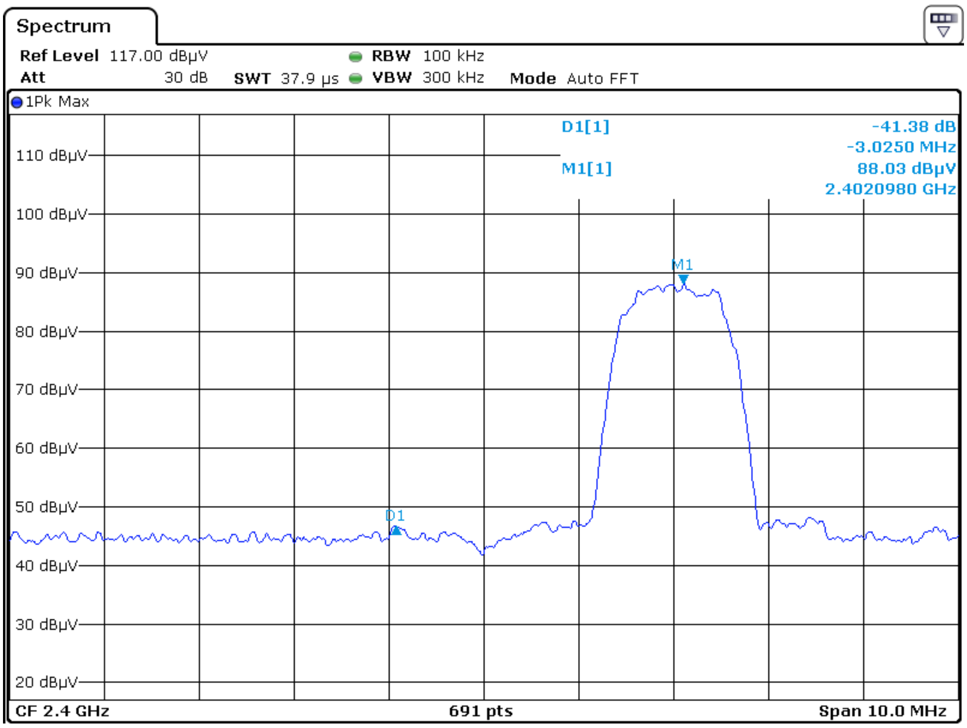
Peak Resultant field strength = Fundamental emissions (peak value) – delta from the bandedge plot

= 86.8 dBµV/m - 40.5 dB

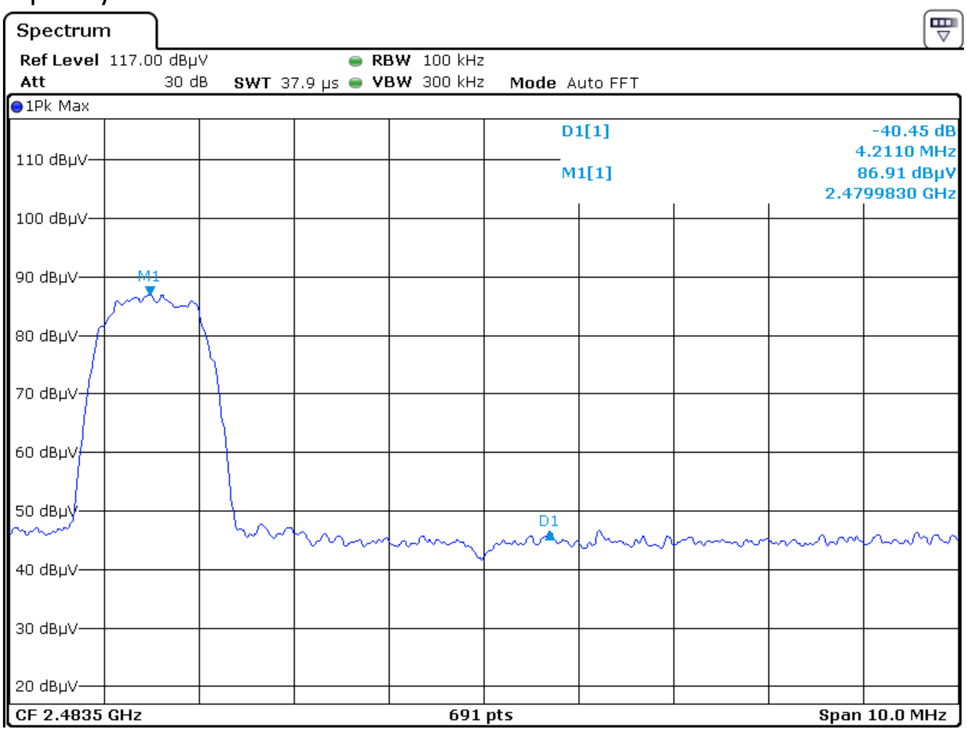
= 46.3dBµV/m

The resultant field strength meets the general radiated emission limit in section 15.209, which does not exceed 74dBµv/m (Peak Limit) and 54dBµv/m (Average Limit).

Hopping function off
Lowest frequency Channel

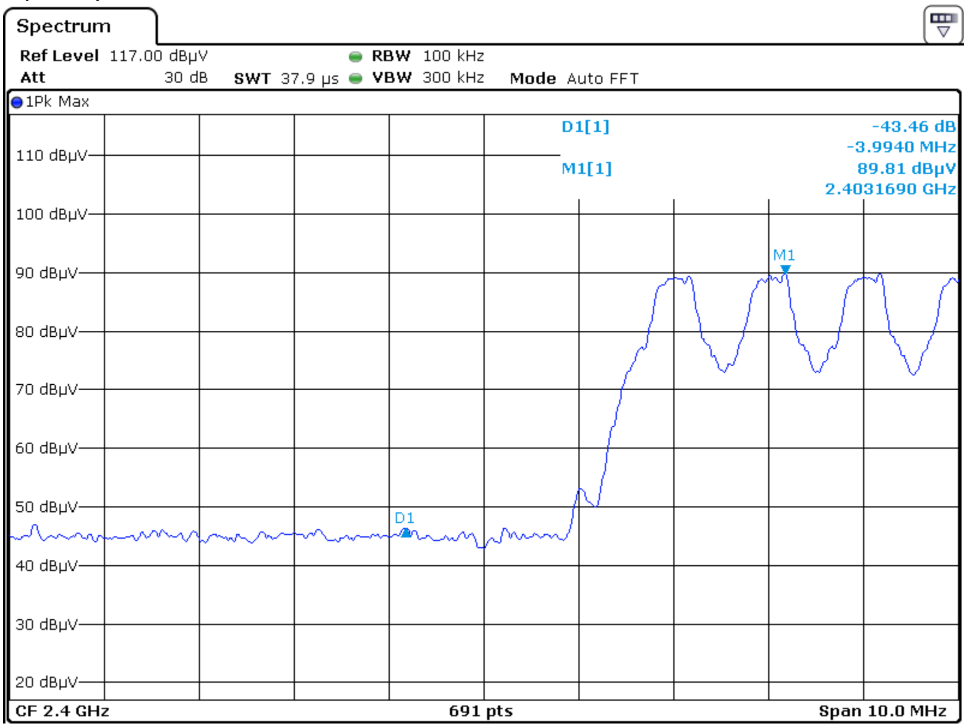


Highest frequency Channel

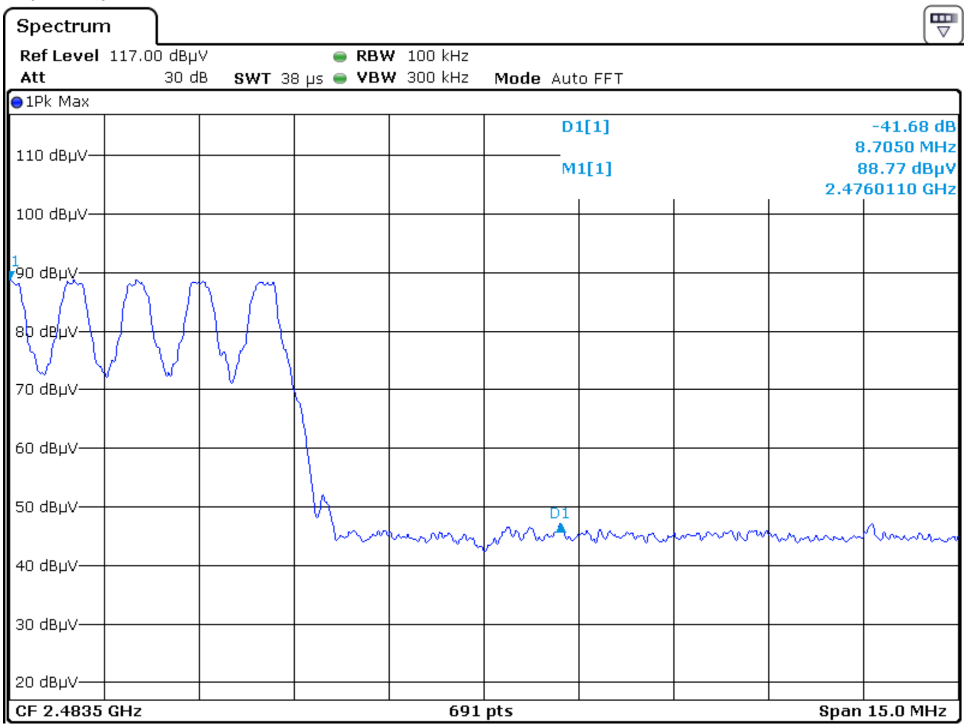


Hopping function on

Lowest frequency Channel

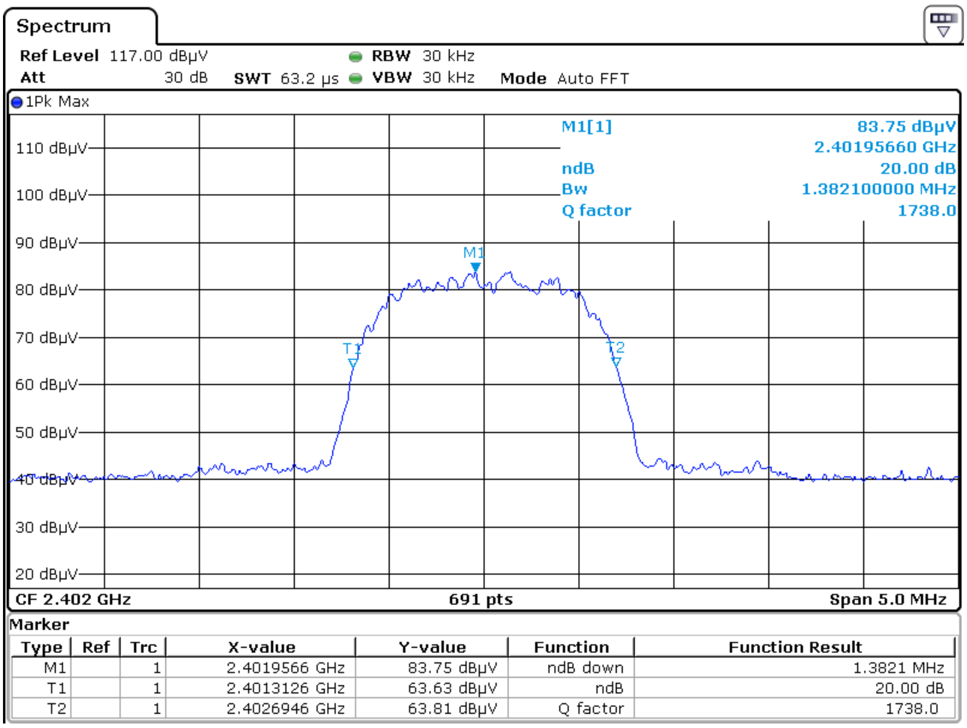


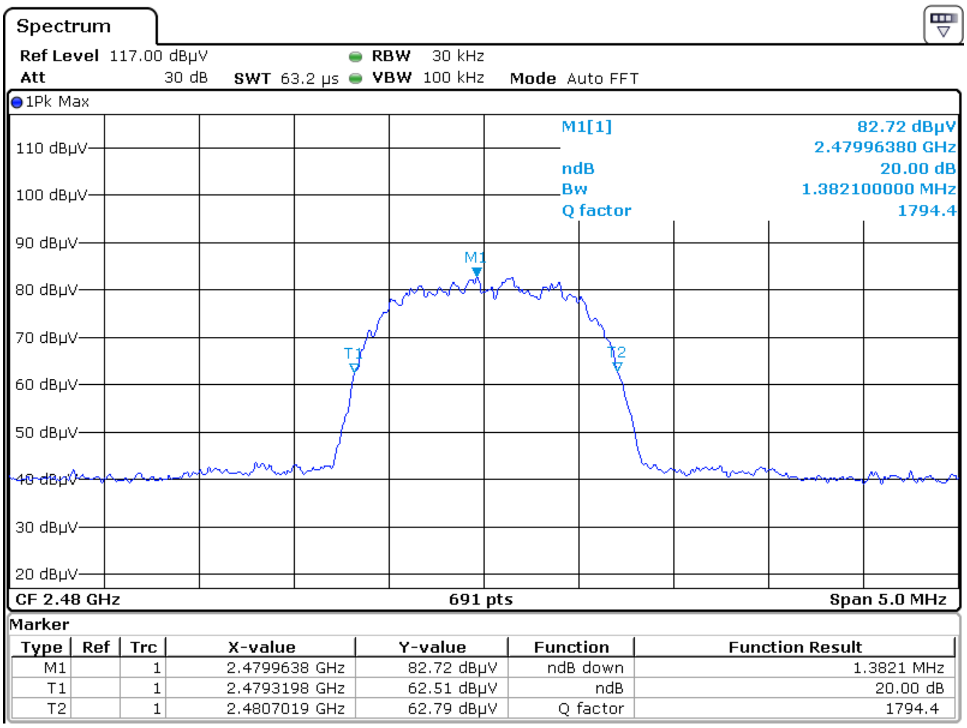
Highest frequency Channel



9.2 20dB bandwidth

Pursuant to FCC part 15 Section 15.215(c), the 20dB bandwidth of the emission was contained within the frequency band designated (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over excepted variations in temperature and supply voltage were considered. The test plots are reported as below.





9.3 Discussion of Pulse Desensitization

Pulse desensitivity is not applicable for this device. The effective period (Teff) is approximately 625µs for Bluetooth. With a resolution bandwidth (3dB) of 1MHz, so the pulse desensitivity factor is 0dB.

9.4 Calculation of Average Factor

Based on the Bluetooth Specification with EDR and worst case AFH mode, transmitter ON time is independent of packet type (DH1, DH3 and DH5) and packet length, the AFH mode Duty cycle connection factor as below:

Channel hop rate = 800 hops/second (AFH Mode)

Adjusted channel hop rate for DH5 mode = 133.33 hops/second

Time per channel hop = 1 / 133.33 hops/second = 7.5 ms

Time to cycle through all channels = 7.5 x 20 channels = 150 ms

Number of times transmitter hits on one channel = 100 ms / 150 ms = 1 time(s)

Worst case dwell time = 7.5 ms

Duty cycle connection factor = 20log10 (7.5ms / 100ms) = -22.5 dB

9.5 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services in the measurements of transmitters operating under Part 15, Subpart C rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.10 - 2013.

The transmitting equipment under test (EUT) is placed on a styrene turntable which is four feet in diameter and approximately 0.8 meter up to 1GHz and 1.5 meter above 1GHz in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjust through all three orthogonal axes to obtain maximum emission levels. The antenna height and polarization are varied during the testing to search for maximum signal levels.

Detector function for radiated emissions is in peak mode. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in section 9.4.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.

Detector function for conducted emissions is in QP & AV mode and IFBW setting is 9 kHz from the frequency band 150 kHz to 30MHz.

9.5 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted measurements are made as described in ANSI C63.10 - 2013.

The IF bandwidth used for measurement of radiated signal strength was 10 kHz for emission below 30 MHz and 120 kHz for emission from 30 MHz to 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. Above 1000 MHz, a resolution bandwidth of 1 MHz is used (RBW 3MHz used for fundamental emission).

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the restricted bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, but those measurements taken at a closer distance are so marked.

10.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-12	BiConiLog Antenna	ETS	3142E	00166158	14-Sep-2018	14-Sep-2020
SZ185-01	EMI Receiver	R&S	ESCI	100547	24-Dec-2019	24-Dec-2020
SZ061-09	Horn Antenna	ETS	3115	00092346	16-Oct-2019	16-Oct-2020
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	27-May-2020	27-May-2021
SZ061-15	Double-Ridged Waveguide Horn Antenna	ETS	3116C-PA	00224718	25-Oct-2018	25-Oct-2020
SZ056-06	Spectrum Analyzer	R&S	FSV40	101101	27-May-2020	27-May-2021
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	27-May-2020	27-May-2021
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	15-Dec-2018	15-Dec-2020
SZ062-02	RF Cable	RADIALL	RG 213U	--	12-Jun-2020	12-Dec-2020
SZ062-05	RF Cable	RADIALL	0.04-26.5GHz	--	24-Aug-2020	24-Feb-2021
SZ062-12	RF Cable	RADIALL	0.04-26.5GHz	--	24-Aug-2020	24-Feb-2021
SZ067-04	Notch Filter	Micro-Tronics	BRM50702-02	--	27-May-2020	27-May-2021
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	29-Oct-2019	29-Oct-2020
SZ187-01	Two-Line V-Network	R&S	ENV216	100073	29-Oct-2019	29-Oct-2020
SZ188-03	Shielding Room	ETS	RFD-100	4100	15-Dec-2018	15-Dec-2020
SZ062-16	RF Cable	HUBER+SUHNER	CBL2-BN-1m	110127-2231000	30-Oct-2019	30-Oct-2020

************************************ End of Report************************************