ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR L OW-POWER, NON-LICENSED TRANSMITTER

Test Report No.	**: W156R-D030**
AGR No.	**: A154A-165**
Applicant	**: LG Innotek Co., Ltd.**
Address	**: 978-1, Jangduk-dong, Gwangsan-gu, Gwangju, 506-731 Korea**
Manufacturer	**: LG Innotek Co., Ltd.**
Address	**: 978-1, Jangduk-dong, Gwangsan-gu, Gwangju, 506-731 Korea**
Type of Equipment	**: Wi-Fi module**
FCC ID.	**: YZP-TWCMB202D**
IC Certification No.	**: 7414C-TWCMB202D**
Model Name	**: TWCM-B202D**
Serial number	**: N/A**
Total page of Report	**: 644 pages (including this page)**
Date of Incoming	**: February 13, 2015**
Date of issue	**: June 19, 2015**

SUMMARY

The equipment complies with the regulation; ***FCC PART 15 SUBPART E Section 15.407 and IC RSS-Gen Issue 4 Nov 2014 and RSS-247 Issue 1 May 2015***

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

Reviewed by: Ki-Hong, Nam / Asst, Chief Engineer, ONETECH Corp.

Approved by: Sung-Ik, Han/ Managing Director, ONETECH Corp.

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EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

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Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
W156R-D030	June 19, 2015	Initial Issue	All

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1. VERIFICATION OF COMPLIANCE

Applicant	: LG Innotek Co., Ltd.
Address	: 978-1, Jangduk-dong, Gwangsan-gu, Gwangju, 506-731 Korea
Contact Person	: Inchang, Jeong / Director
Telephone No.	: +82-62-950-0332
FCC ID	: YZP-TWCMB202D
IC Certification No.	: 7414C-TWCMB202D
Model Name	: TWCM-B202D
Serial Number	: N/A
Date	: June 19, 2015

EQUIPMENT CLASS	FCC : Unlicensed National Information infrastructure(UNII) IC : Low Power License-Exempt Radio-communication Device
E.U.T. DESCRIPTION	Modular Transmitter, Wi-Fi module
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.10: 2013
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification, Modular Approval
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15 SUBPART E Section 15.407, RSS-Gen Issue 4 Nov 2014, RSS-247 Issue 1 May 2015
Modifications on the Equipment to Achieve Compliance	None
Final Test was Conducted On	3 m, Semi Anechoic Chamber

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC&IC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

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2. TEST SUMMARY

2.1 Test items and results

SECTION		TEST ITEMS	RESULTS
15.407(a)	RSS-247A9.2	26 dB Bandwidth & 99 % Occupied Bandwidth	PASS
15.407(a)	RSS-247A9.2	Maximum Conducted Output Power	Met the Limit / PASS
15.407(a)	RSS-247A9.2	Peak Power Spectral Density	Met the Limit / PASS
15.407(a)	-	Peak Excursion	Met the Limit / PASS
15.407(g)	RSS-247A1.1.4	Frequency Stability	Met the Limit / PASS
15.407(b)	RSS-247A9.2&RSS Gen	Undesirable Emissions	Met the Limit / PASS
15.205, 15.407(b)	-	General Field Strength Limits (Restricted Bandsand Radiated Emission Limits)	Met the Limit / PASS
15.207	RSS GEN	AC Conducted Emissions 150 kHz-30 MHz	Met the Limit / PASS
15.407(h)	RSS-247A9.3	Dynamic frequency Selection	Met the Limit / PASS

2.2 Additions, deviations, exclusions from standards

No additions, deviations or exclusions have been made from standard.

2.3 Related Submittal(s) / Grant(s)

Original submittal only

2.4 Purpose of the test

To determine whether the equipment under test fulfills the requirements of the regulation stated in FCC PART 15 SUBPART E Section 15.407, IC RSS-Gen Issue 4 Nov 2014 and RSS-247 Issue 1 May 2015

2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2013. Radiated testing was performed at a distance of 3 m from EUT to the antenna.

2.6 Test Facility

The Onetech Corp. has been designated to perform equipment testing in compliance with ISO/IEC 17025.

The Electromagnetic compatibility measurement facilities are located at 301-14, Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do, 464-862 Korea.

-. Site Filing:

VCCI (Voluntary Control Council for Interference) – Registration No. R-4112/ C-4617/ G-666/ T-1842 IC (Industry Canada) – Registration No. Site# 3736-3

-. Site Accreditation:

KOLAS (Korea Laboratory Accreditation Scheme) - Accreditation No. 85

FCC (Federal Communications Commission) - Accreditation No. KR0013

RRA (Radio Research Agency) – Designation No. KR0013

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3. GENERAL INFORMATION

3.1 Product Description

The LG Innotek Co., Ltd., Model TWCM-B202D (referred to as the EUT in this report) is a Wi-Fi module. Product specification information described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	Wi-Fi module		
OPERATING FREQUENCY	WLAN	2 412 MHz ~ 2 462 MHz (802.11b/g/n(HT20))	
		2 422 MHz ~ 2 452 MHz (802.11n(HT40))	
	Bluetooth	2 402 MHz ~ 2 480 MHz	
	Bluetooth LE	2 402 MHz ~ 2 480 MHz	
	5 150 MHz ~ 5 250 MHz Band	5 180 MHz ~ 5 240 MHz (802.11a/n(HT20)/ac(HT20))	
		5 190 MHz ~ 5 230 MHz (802.11n(HT40)/ac(HT40))	
		5 210 MHz (802.11n(HT80))	
	5 250 MHz ~ 5 350 MHz Band	5 260 MHz ~ 5 320 MHz (802.11a/n(HT20)/ac(HT20))	
		5 270 MHz ~ 5 310 MHz (802.11n(HT40)/ac(HT40))	
		5 290 MHz (802.11n(HT80))	
	5 470 MHz ~ 5 725 MHz Band	5 500 MHz ~ 5 700 MHz (802.11a/n(HT20)/ac(HT20))	
		5 510 MHz ~ 5 670 MHz (802.11n(HT40)/ac(HT40))	
		5 530 MHz (802.11n(HT80))	
	5 725 MHz ~ 5 850 MHz Band	5 745 MHz ~ 5 825 MHz (802.11a/n(HT20)/ac(HT20))	
		5 755 MHz ~ 5 795 MHz (802.11n(HT40)/ac(HT40))	
		5 775 MHz (802.11n(HT80))	
MAX. RF OUTPUT POWER	WLAN	Antenna 0	Wi-Fi 802.11b (13.85 dBm)
			Wi-Fi 802.11g (13.37 dBm)
			Wi-Fi 802.11n_20 MHz (11.32 dBm)
			Wi-Fi 802.11n_40 MHz (11.52 dBm)
		Antenna 1	Wi-Fi 802.11b (14.08 dBm)
			Wi-Fi 802.11g (13.75 dBm)
			Wi-Fi 802.11n_20 MHz (11.65 dBm)
			Wi-Fi 802.11n_40 MHz (11.86 dBm)
		Multiple transmit	Wi-Fi 802.11g (16.57 dBm)
			Wi-Fi 802.11n_20 MHz (14.50 dBm)
			Wi-Fi 802.11n_40 MHz (14.70 dBm)

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MAX. RF OUTPUT POWER	Bluetooth	1 Mbps	4.13 dBm
		2 Mbps	5.21 dBm
		3 Mbps	5.86 dBm
	Bluetooth LE	6.39 dBm	
	Antenna 0	5 150 MHz ~ 5 250 MHz Band	Wi-Fi 802.11a (12.09 dBm) Wi-Fi 802.11n_20 MHz (12.11 dBm) Wi-Fi 802.11n_40 MHz (12.31 dBm) Wi-Fi 802.11ac_20 MHz (12.15 dBm) Wi-Fi 802.11ac_40 MHz (12.65 dBm) Wi-Fi 802.11ac_80 MHz (9.81 dBm)
		5 250 MHz ~ 5 350 MHz Band	Wi-Fi 802.11a (13.44 dBm) Wi-Fi 802.11n_20 MHz (13.66 dBm) Wi-Fi 802.11n_40 MHz (13.50 dBm) Wi-Fi 802.11ac_20 MHz (13.35 dBm) Wi-Fi 802.11ac_40 MHz (13.82 dBm) Wi-Fi 802.11ac_80 MHz (9.74 dBm)
		5 470 MHz ~ 5 725 MHz Band	Wi-Fi 802.11a (13.94 dBm) Wi-Fi 802.11n_20 MHz (13.73 dBm) Wi-Fi 802.11n_40 MHz (14.06 dBm) Wi-Fi 802.11ac_20 MHz (13.97 dBm) Wi-Fi 802.11ac_40 MHz (14.34 dBm) Wi-Fi 802.11ac_80 MHz (11.40 dBm)
		5 725 MHz ~ 5 850 MHz Band	Wi-Fi 802.11a (12.90 dBm) Wi-Fi 802.11n_20 MHz (12.69 dBm) Wi-Fi 802.11n_40 MHz (13.09 dBm) Wi-Fi 802.11ac_20 MHz (12.74 dBm) Wi-Fi 802.11ac_40 MHz (13.24 dBm) Wi-Fi 802.11ac_80 MHz (10.32 dBm)

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MAX. RF OUTPUT POWER	Antenna 1	5 150 MHz ~ 5 250 MHz Band	Wi-Fi 802.11a (13.15 dBm) Wi-Fi 802.11n_20 MHz (12.98 dBm) Wi-Fi 802.11n_40 MHz (13.08 dBm) Wi-Fi 802.11ac_20 MHz (12.83 dBm) Wi-Fi 802.11ac_40 MHz (13.37 dBm) Wi-Fi 802.11ac_80 MHz (10.82 dBm)
		5 250 MHz ~ 5 350 MHz Band	Wi-Fi 802.11a (12.07 dBm) Wi-Fi 802.11n_20 MHz (12.42 dBm) Wi-Fi 802.11n_40 MHz (12.26 dBm) Wi-Fi 802.11ac_20 MHz (12.14 dBm) Wi-Fi 802.11ac_40 MHz (12.73 dBm) Wi-Fi 802.11ac_80 MHz (10.59 dBm)
		5 470 MHz ~ 5 725 MHz Band	Wi-Fi 802.11a (13.60 dBm) Wi-Fi 802.11n_20 MHz (13.22 dBm) Wi-Fi 802.11n_40 MHz (13.44 dBm) Wi-Fi 802.11ac_20 MHz (13.34 dBm) Wi-Fi 802.11ac_40 MHz (13.79 dBm) Wi-Fi 802.11ac_80 MHz (10.59 dBm)
		5 725 MHz ~ 5 850 MHz Band	Wi-Fi 802.11a (13.72 dBm) Wi-Fi 802.11n_20 MHz (13.56 dBm) Wi-Fi 802.11n_40 MHz (13.69 dBm) Wi-Fi 802.11ac_20 MHz (13.54 dBm) Wi-Fi 802.11ac_40 MHz (14.22 dBm) Wi-Fi 802.11ac_80 MHz (11.30 dBm)

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MAX. RF OUTPUT POWER	Multiple transmit	5 150 MHz ~ 5 250 MHz Band	Wi-Fi 802.11a (15.63 dBm) Wi-Fi 802.11n_20 MHz (15.52 dBm) Wi-Fi 802.11n_40 MHz (15.68 dBm) Wi-Fi 802.11ac_20 MHz (15.47 dBm) Wi-Fi 802.11ac_40 MHz (16.04 dBm) Wi-Fi 802.11ac_80 MHz (13.35 dBm)
		5 250 MHz ~ 5 350 MHz Band	Wi-Fi 802.11a (15.82 dBm) Wi-Fi 802.11n_20 MHz (16.09 dBm) Wi-Fi 802.11n_40 MHz (15.93 dBm) Wi-Fi 802.11ac_20 MHz (15.80 dBm) Wi-Fi 802.11ac_40 MHz (16.26 dBm) Wi-Fi 802.11ac_80 MHz (13.20 dBm)
		5 470 MHz ~ 5 725 MHz Band	Wi-Fi 802.11a (16.78 dBm) Wi-Fi 802.11n_20 MHz (16.49 dBm) Wi-Fi 802.11n_40 MHz (16.77 dBm) Wi-Fi 802.11ac_20 MHz (16.68 dBm) Wi-Fi 802.11ac_40 MHz (17.08 dBm) Wi-Fi 802.11ac_80 MHz (14.02 dBm)
		5 725 MHz ~ 5 850 MHz Band	Wi-Fi 802.11a (16.34 dBm) Wi-Fi 802.11n_20 MHz (16.16 dBm) Wi-Fi 802.11n_40 MHz (16.41 dBm) Wi-Fi 802.11ac_20 MHz (16.17 dBm) Wi-Fi 802.11ac_40 MHz (16.77 dBm) Wi-Fi 802.11ac_80 MHz (13.85 dBm)
MODULATION TYPE	WLAN 2.4 G	DSSS Modulation(DBPSK/DQPSK/CCK)	
	WLAN 5 G	OFDM Modulation(BPSK/QPSK/16QAM/64QAM)	
	Bluetooth	GFSK for 1 Mbps, DQPSK for 2 Mbps, 8-DPSK for 3 Mbps	
	Bluetooth LE	GFSK	
ANTENNA TYPE	WLAN : PIFA Antenna		
	Bluetooth / Bluetooth LE : PIFA Antenna		
ANTENNA GAIN	WLAN : 2.9 dBi		
	Bluetooth / Bluetooth LE : 0.42 dBi		
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	40 MHz		

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3.2 Alternative type(s)/model(s); also covered by this test report.

-. None

4. EUT MODIFICATIONS

-. None

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5. SYSTEM TEST CONFIGURATION

5.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
Main Board	LG Innotek Co., Ltd.	TWFM-K001D	N/A

5.2 Peripheral equipment

Defined as equipment needed for correct operation of the EUT, but not considered as tested:

Model	Manufacturer	Description	Connected to
TWCM-B202D	LG Innotek Co., Ltd.	Wi-Fi module (EUT)	Notebook PC
LGR51	LG Electronics	Notebook PC	EUT

5.3 Mode of operation during the test

For the testing, software used to control the EUT for staying in continuous transmitting mode is programmed.

The worse case data rate for each modulation is determined 6 Mbps(Ant.0) / 6 Mbps(Ant.1) for IEEE 802.11a, 6.5 Mbps(Ant.0) / 6.5 Mbps(Ant.1) for HT20, 13 Mbps(Ant.0) / 13 Mbps(Ant.1) for HT40.

- To get a maximum emission levels from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes and the worst case is “XY” axis.

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5.4 Configuration of Test System

Line Conducted Test: The EUT was connected to USB and the power of USB was connected to Notebook PC. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.10: 2013 to determine the worse operating conditions.

Radiated Emission Test: Preliminary radiated emissions test were conducted using the procedure in ANSI C63.10: 2013 to determine the worse operating conditions. Final radiated emission tests were conducted at 3 meter open area test site.

The turntable was rotated through 360 degrees and the EUT was tested by positioned three orthogonal planes to obtain the highest reading on the field strength meter. Once maximum reading was determined, the search antenna was raised and lowered in both vertical and horizontal polarization.

5.5 Antenna Requirement

For intentional device, according to section 15.203 and RSS-Gen Issue 4 November 2014 Section 8.3, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna Construction:

The transmitter antenna of the EUT is WLAN PIFA antenna and Bluetooth/BLE PIFA antenna, so no consideration of replacement by the user.

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6. PRELIMINARY TEST

6.1 AC Power line Conducted Emissions Tests

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Transmitting Mode	X

6.2 General Radiated Emissions Tests

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Transmitting Mode	X

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7. MIMIMUM 26 dB BANDWIDTH & 99 % OCCUPIED BANDWIDTH

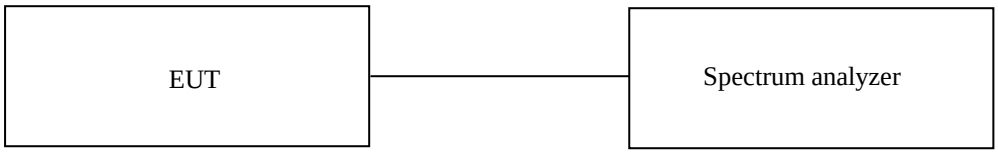
7.1 Operating environment

Temperature : 24 ℃

Relative humidity : 48 % R.H.

7.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz, and peak detection was used. The 26 dB bandwidth is defined as the total spectrum over which the power is higher than the peak power minus 26 dB.



7.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	FSV40	Rohde & Schwarz	Signal Analyzer	101009	Jul. 30, 2014 (1Y)

All test equipment used is calibrated on a regular basis.

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7.4 Test data for 802.11a RLAN Mode

7.4.1 Test data for Antenna 0

-. Test Date : June 15, 2015

-. Test Result : Pass

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5 150 ~ 5 250	Low	5 180	21.28	16.53
	Middle	5 200	21.28	16.53
	High	5 240	21.28	16.53
5 250 ~ 5 350	Low	5 260	21.23	16.53
	Middle	5 300	21.23	16.53
	High	5 320	21.23	16.53
5 470 ~ 5 725	Low	5 500	20.98	16.58
	Middle	5 600	20.98	16.58
	High	5 700	20.98	16.58
5 725 ~ 5 850	Low	5 745	20.78	16.58
	Middle	5 785	20.78	16.58
	High	5 825	20.78	16.58

Tested by: Tae-Ho, Kim / Senior Engineer

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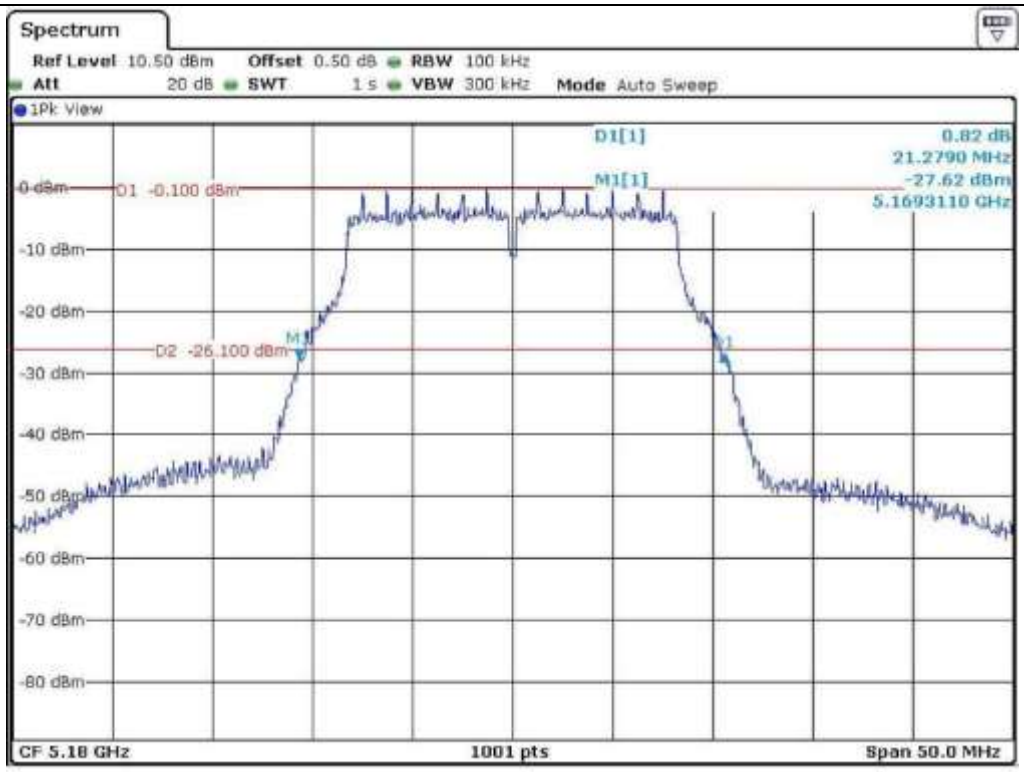
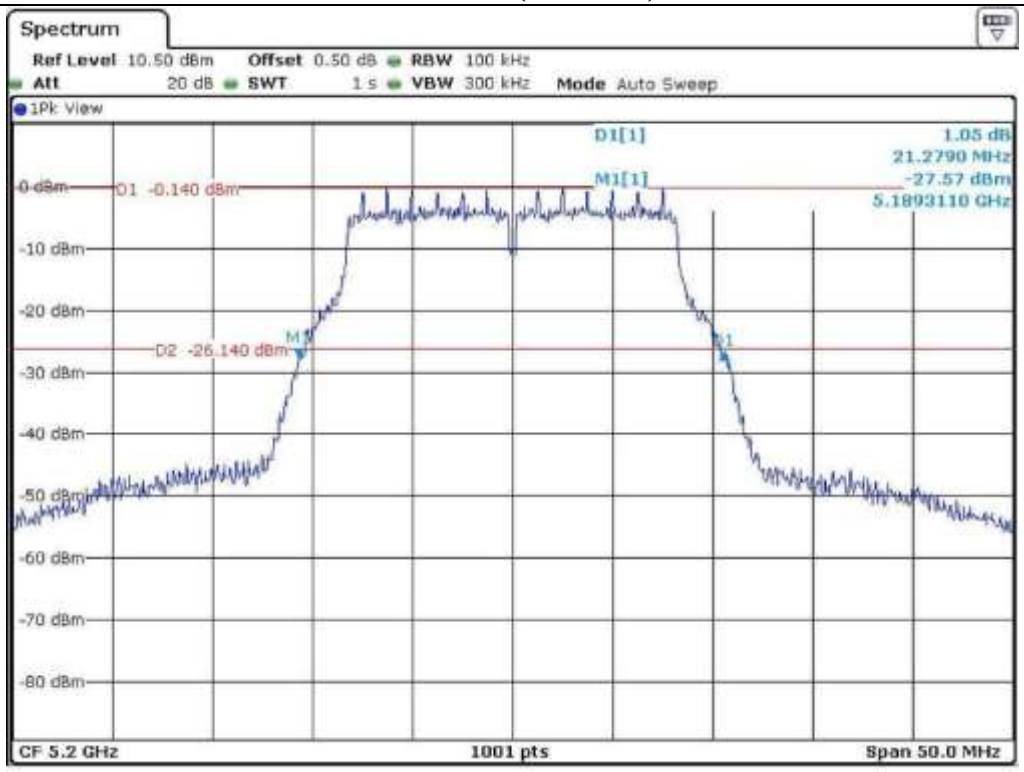


Low Channel (5 180 MHz)



Middle Channel (5 200 MHz)

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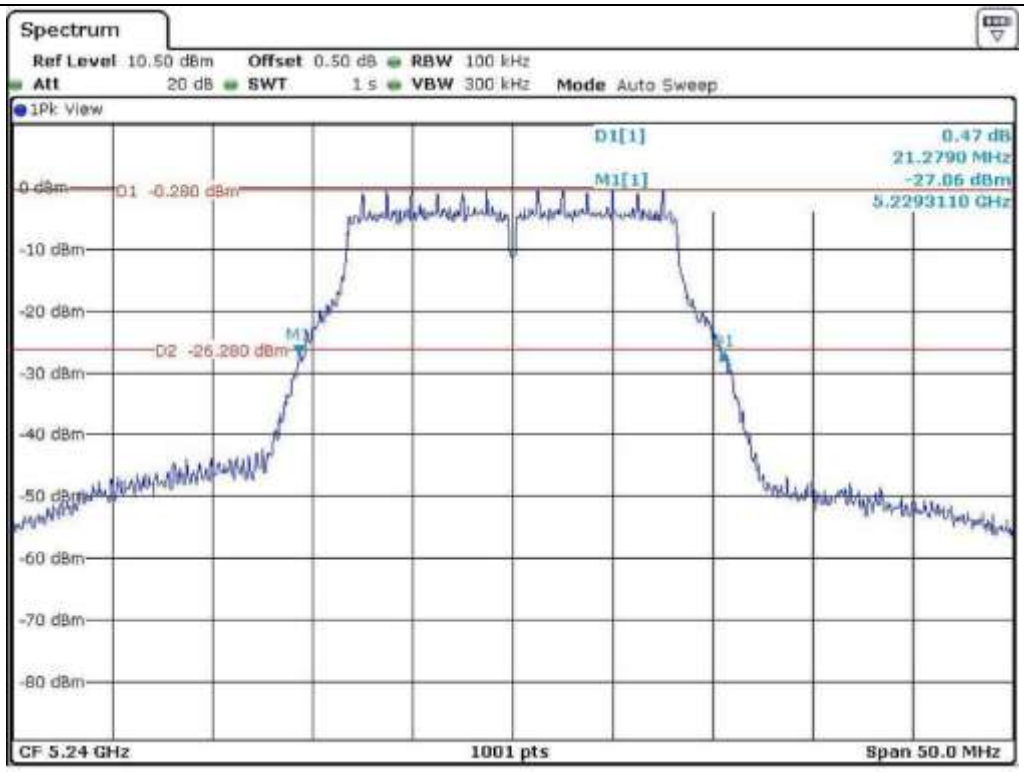

High Channel (5 240 MHz)

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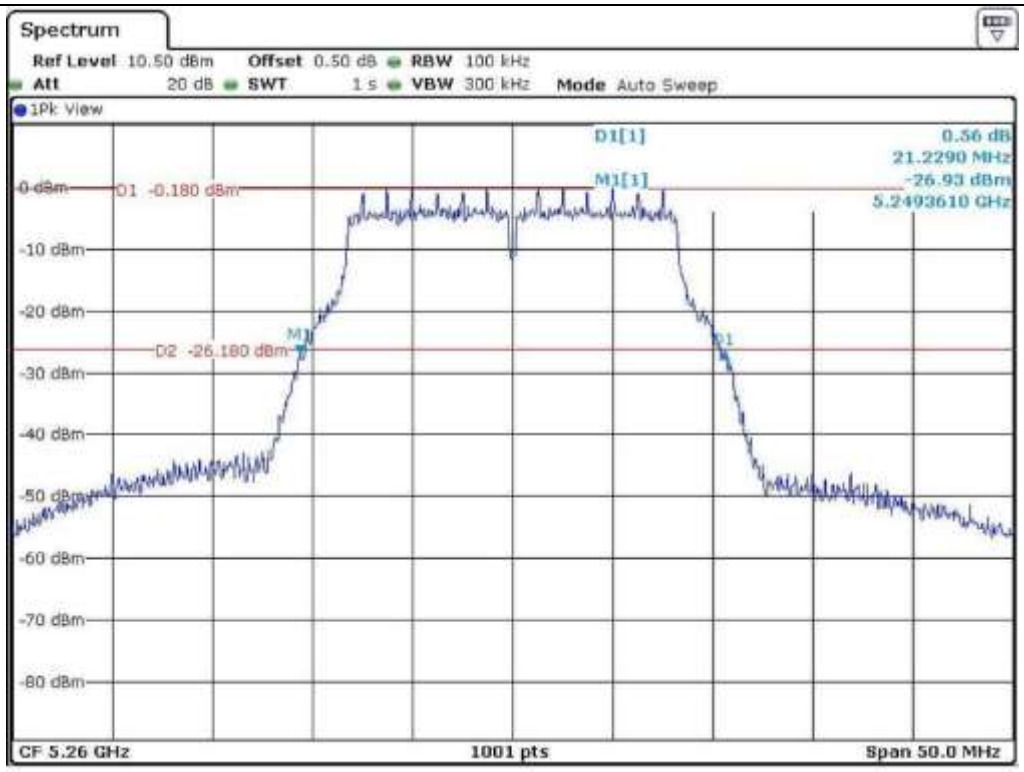
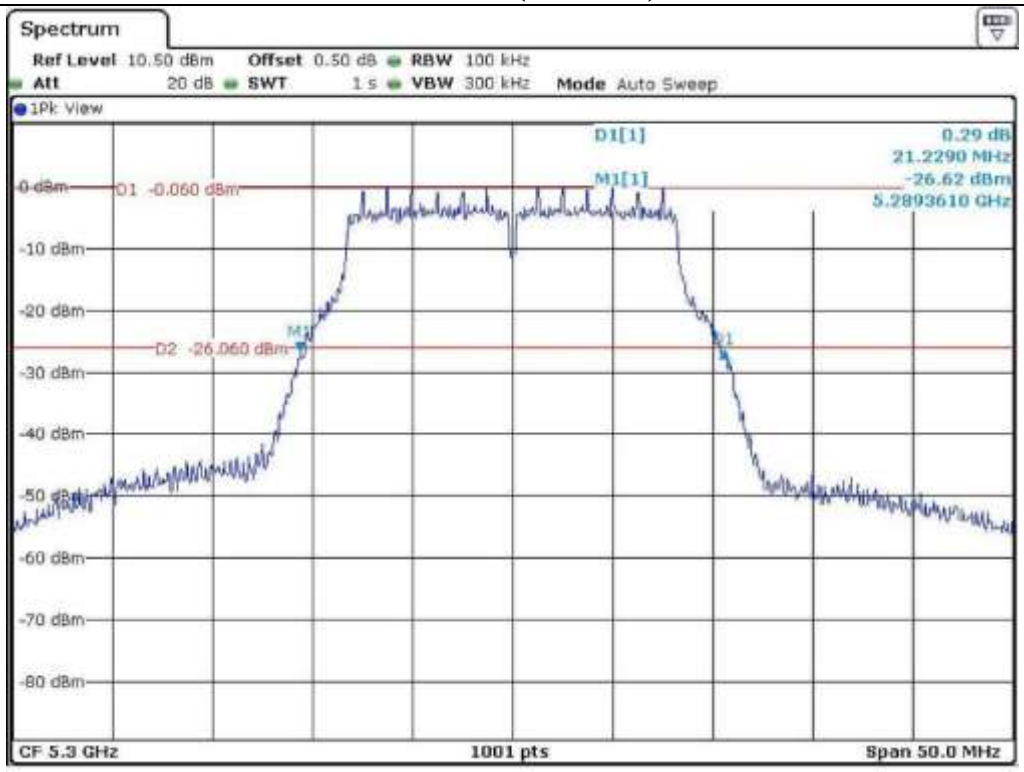


Low Channel (5 260 MHz)



Middle Channel (5 300 MHz)

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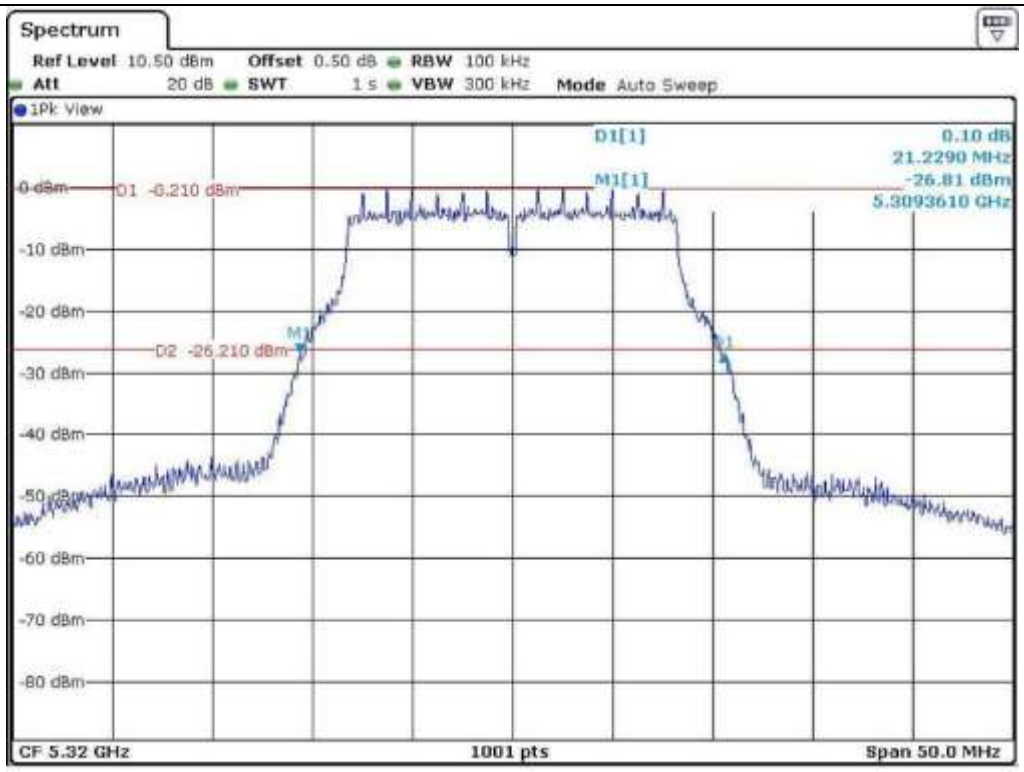

High Channel (5 320 MHz)

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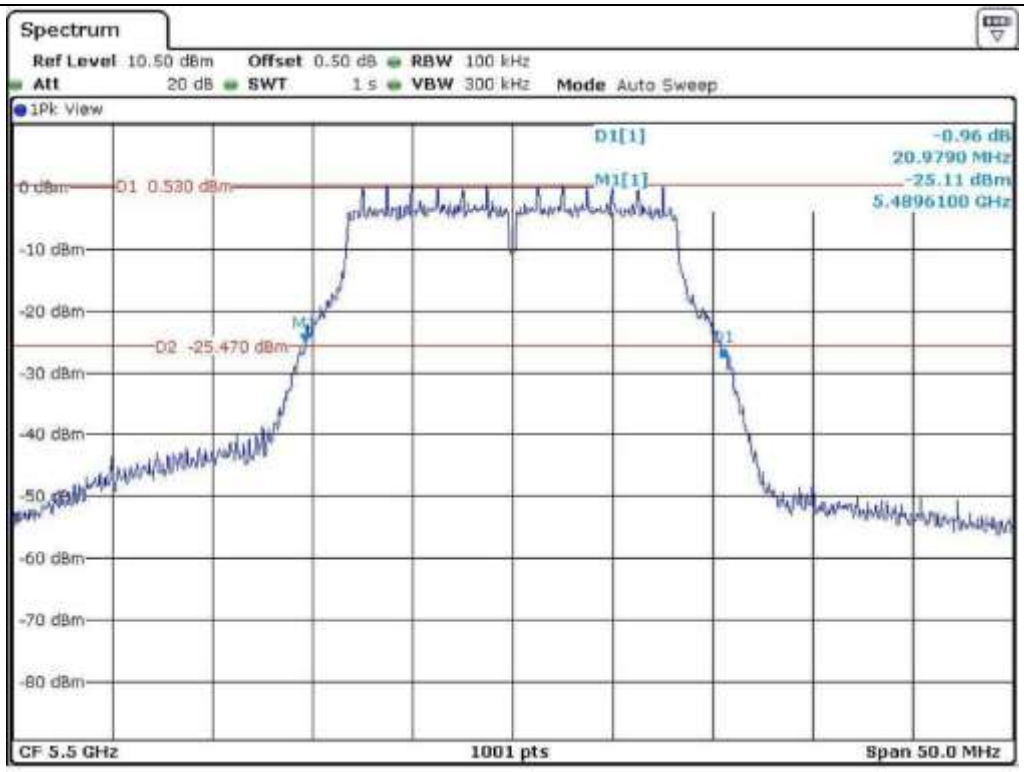
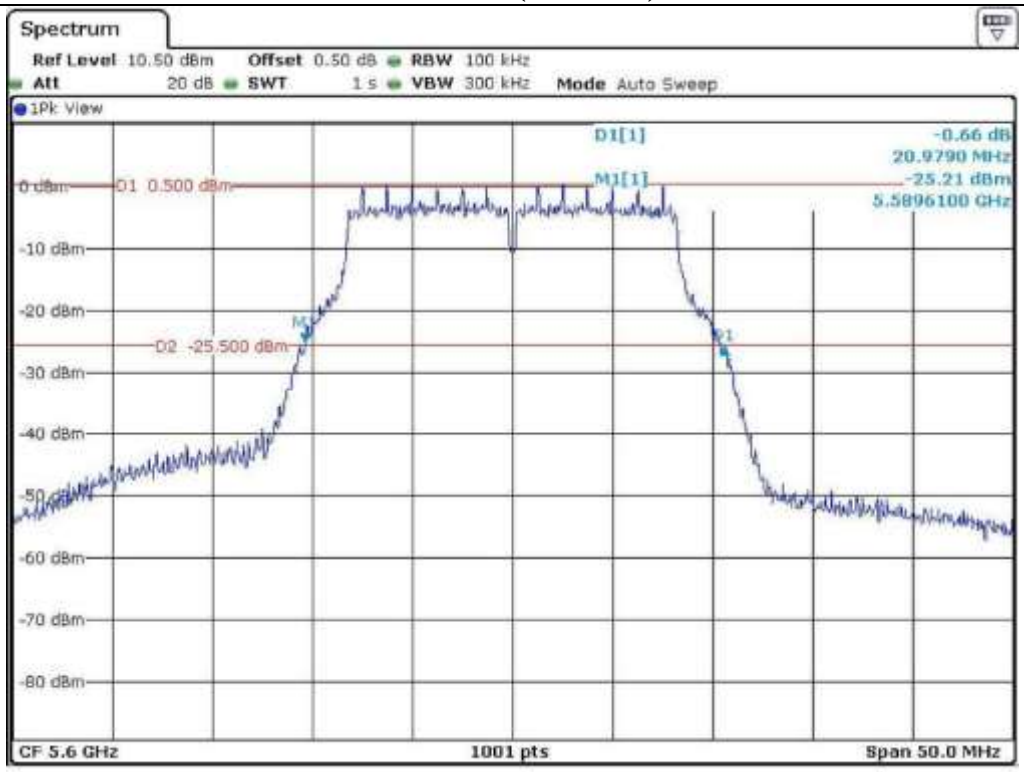


Low Channel (5 500 MHz)



Middle Channel (5 600 MHz)

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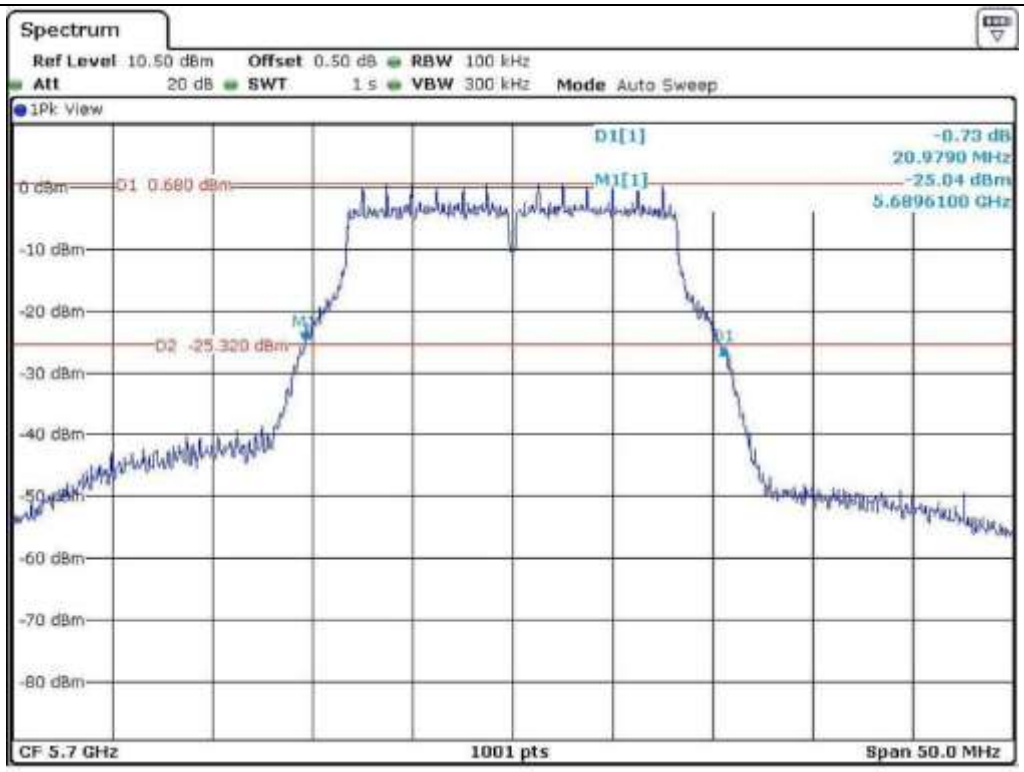

High Channel (5 700 MHz)

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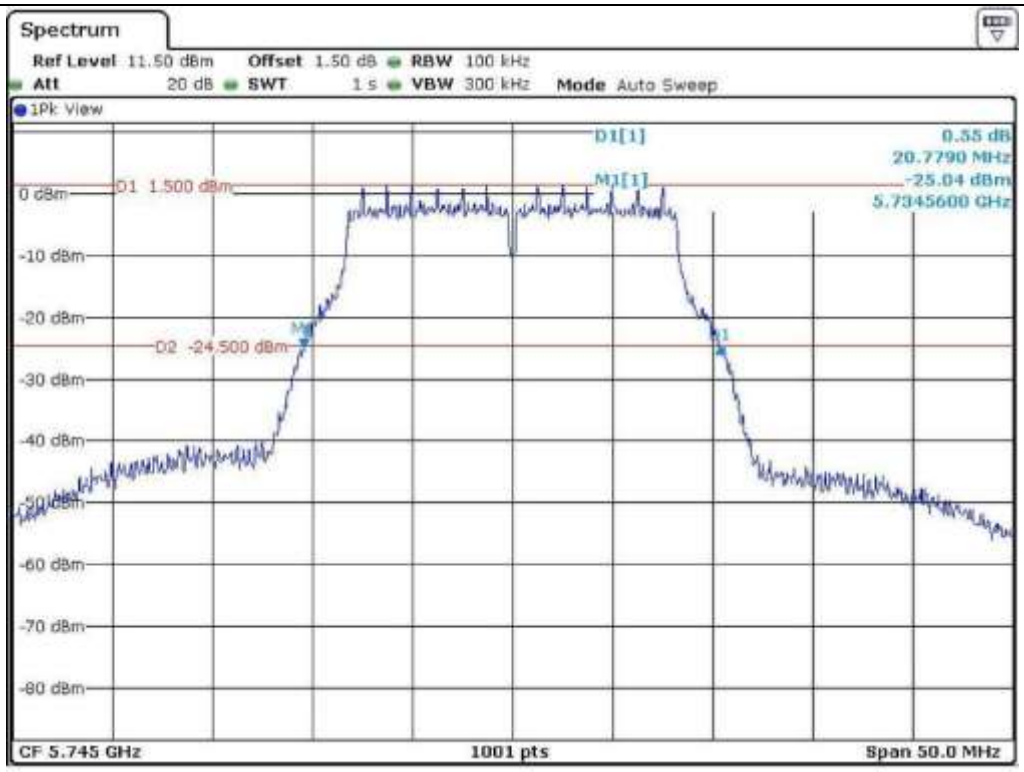
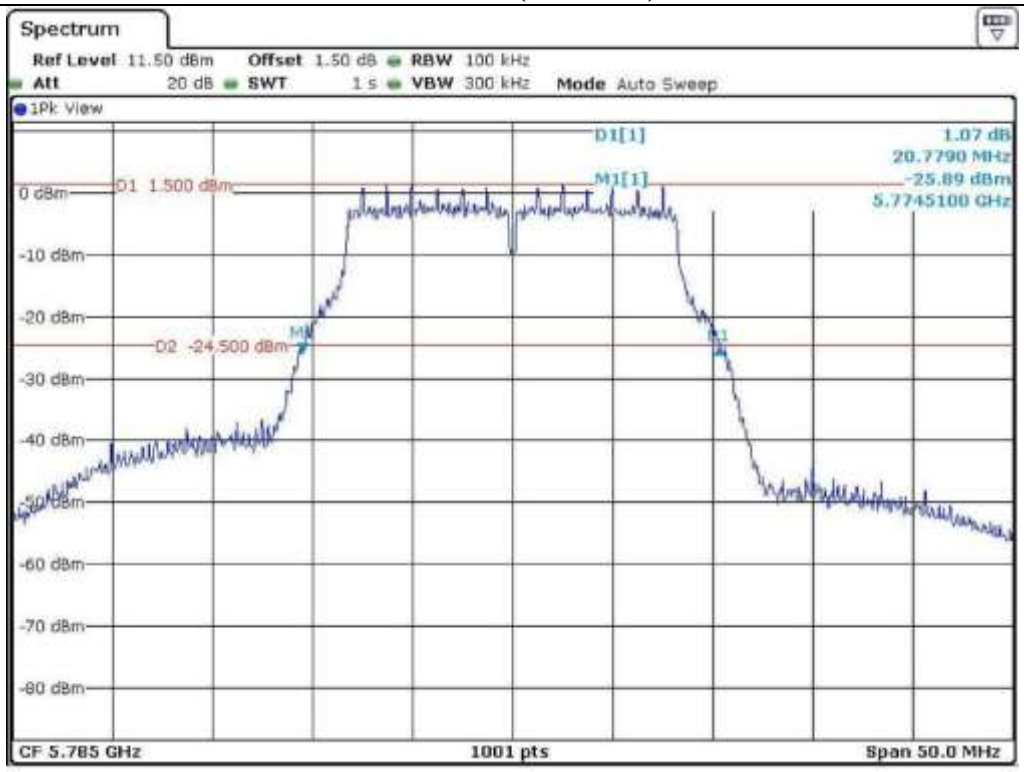


Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)

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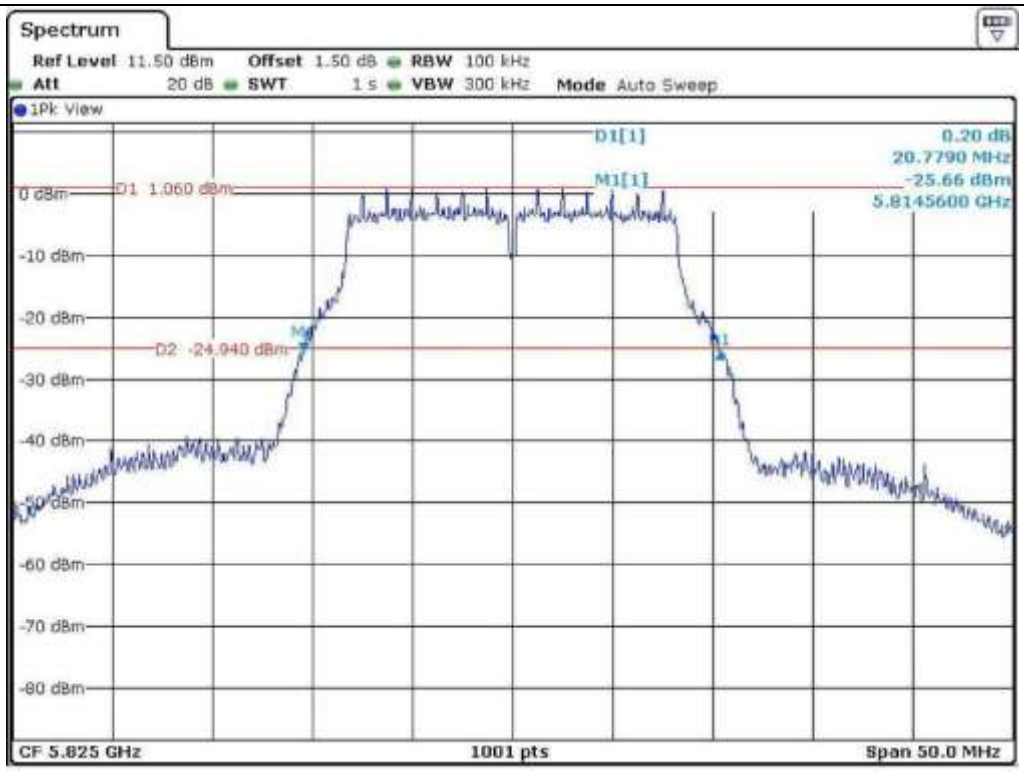

High Channel (5 825 MHz)

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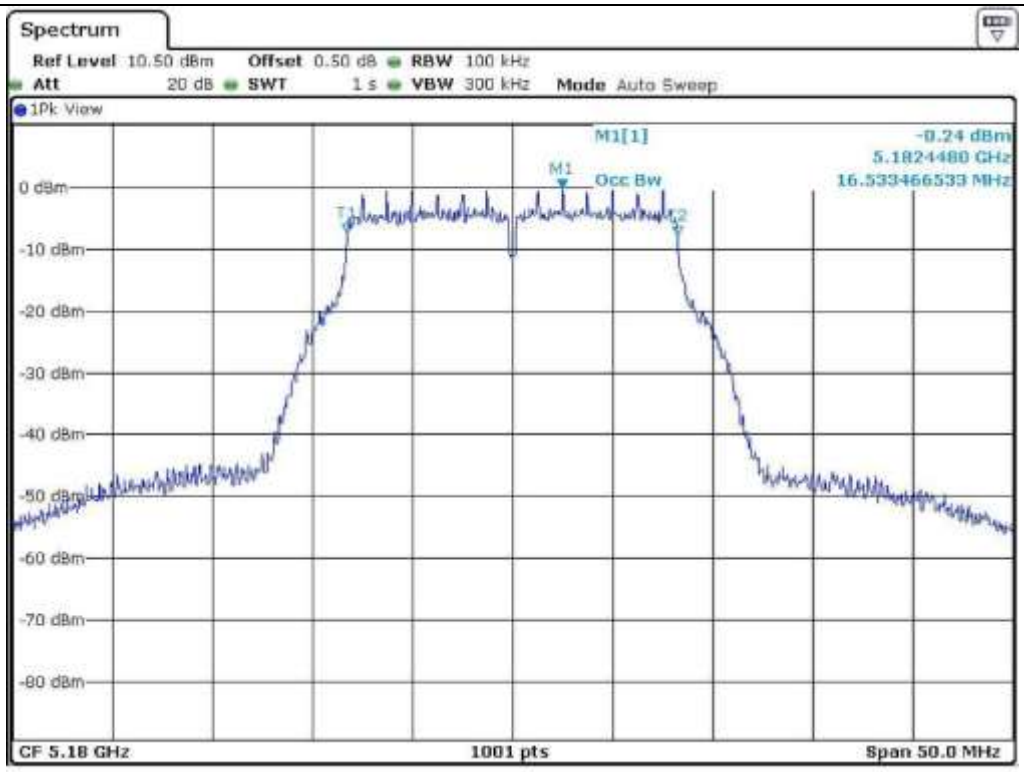
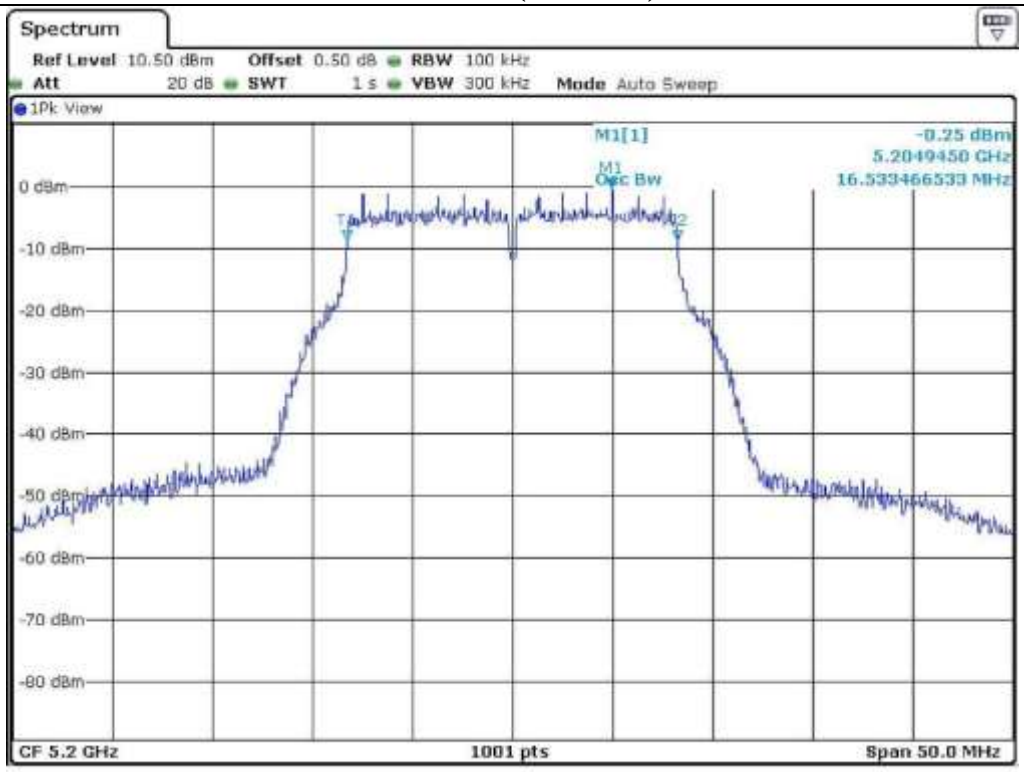


Low Channel (5 180 MHz)



Middle Channel (5 200 MHz)

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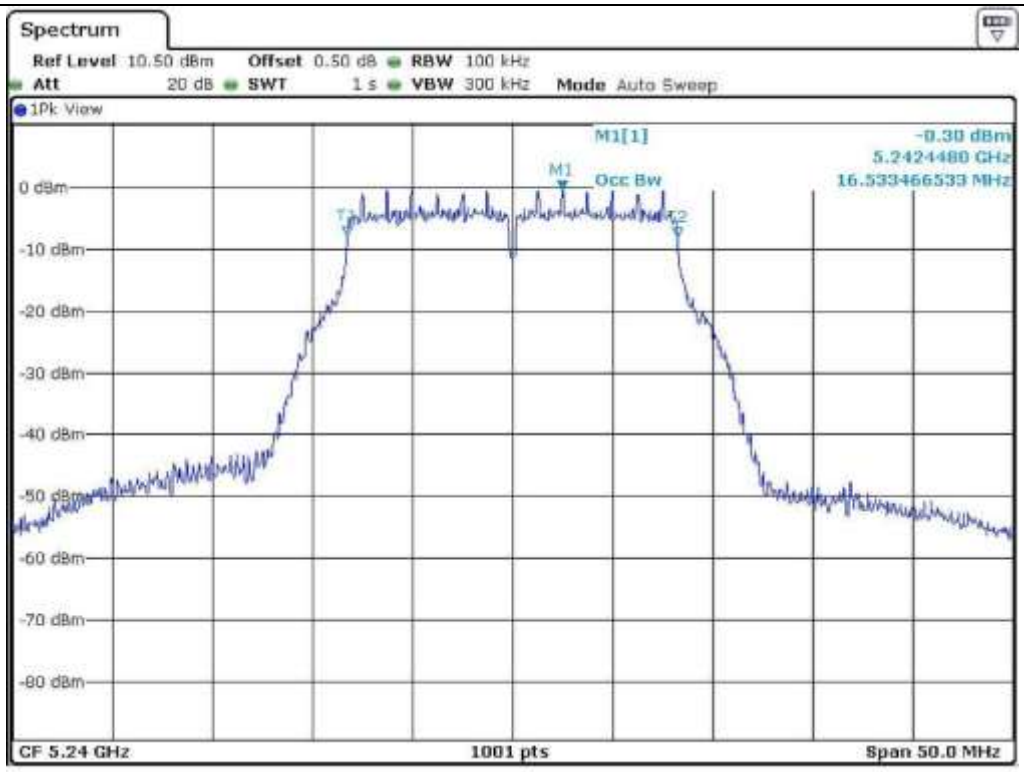

High Channel (5 240 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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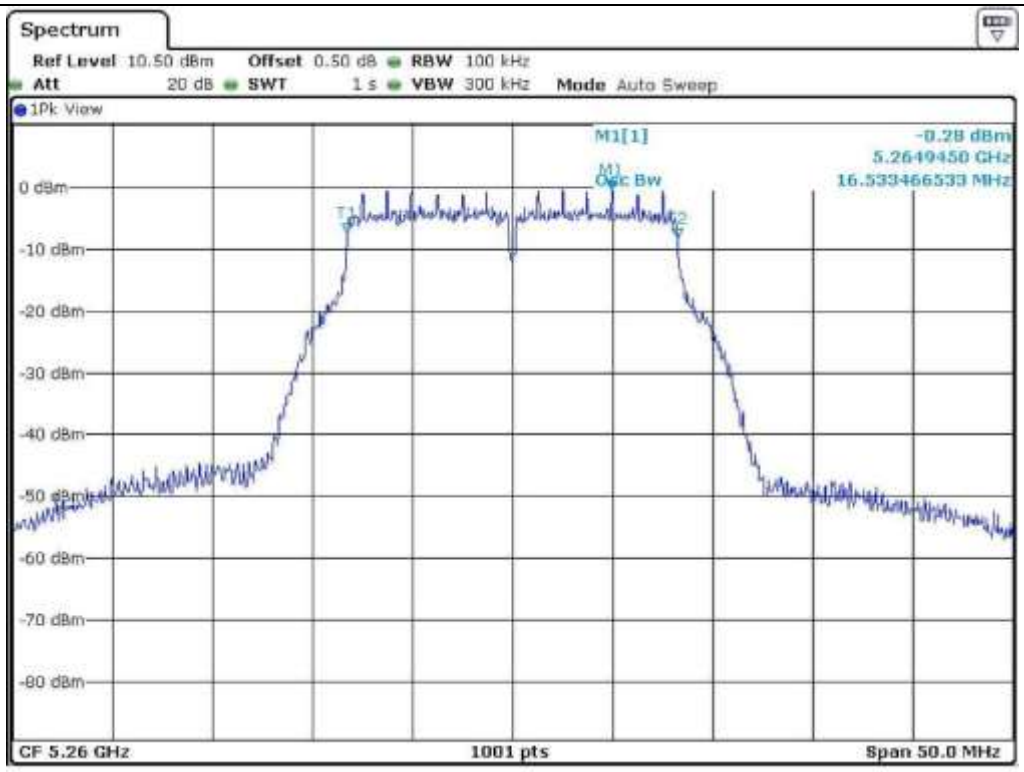
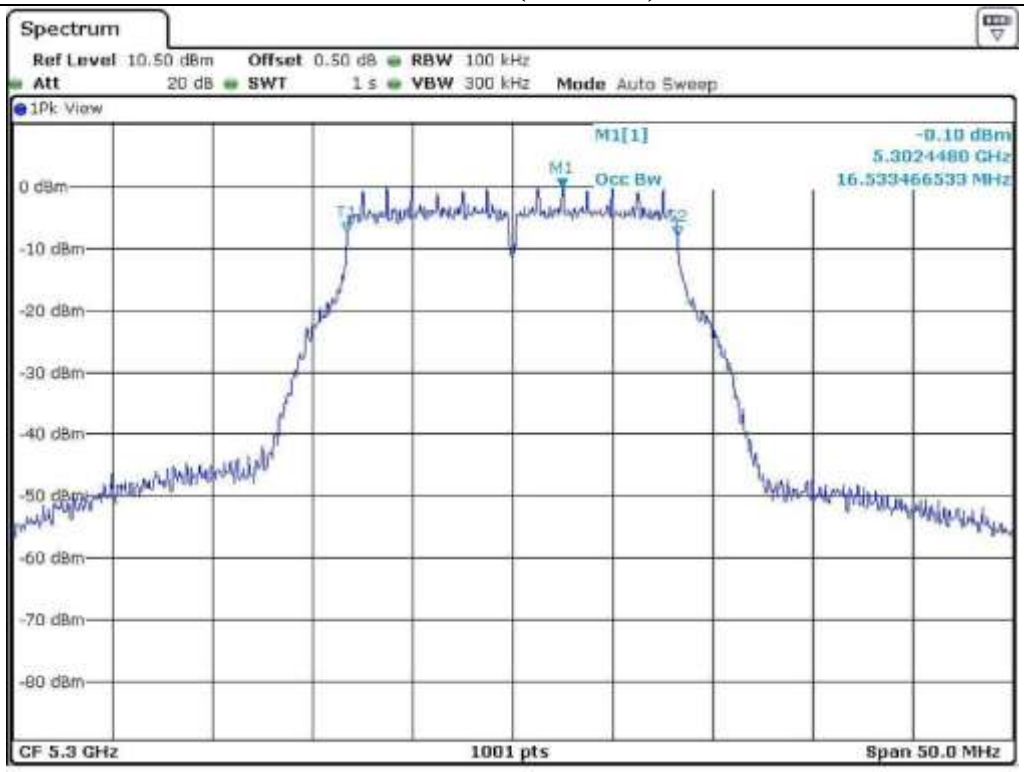


Low Channel (5 260 MHz)



Middle Channel (5 300 MHz)

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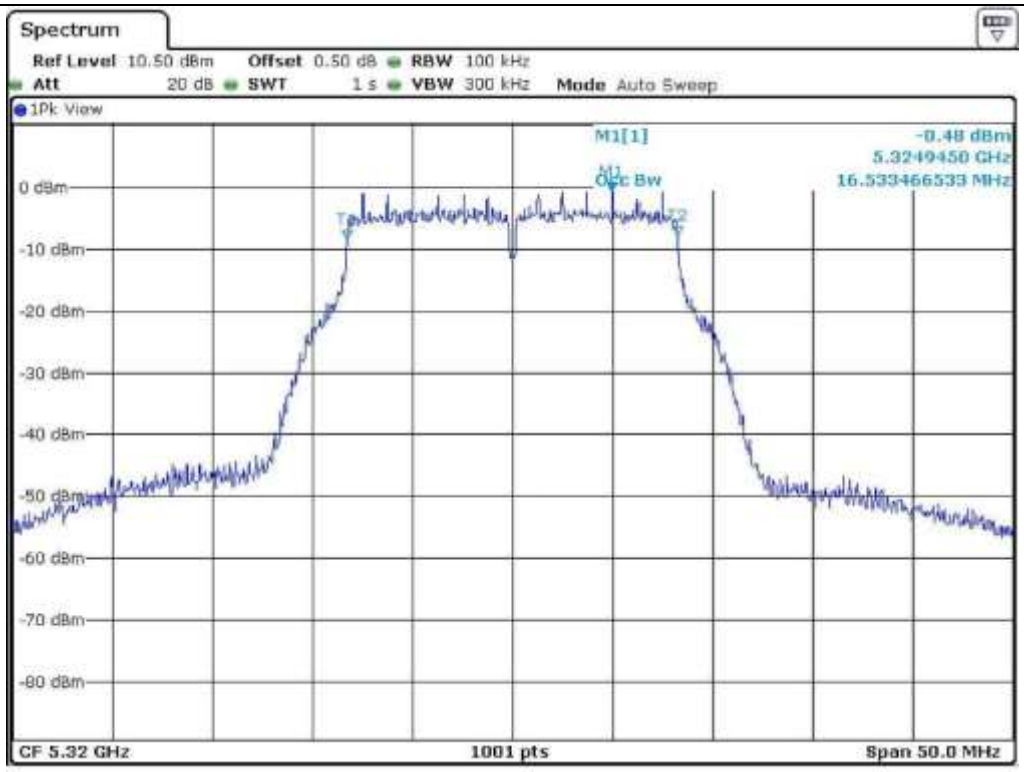

High Channel (5 320 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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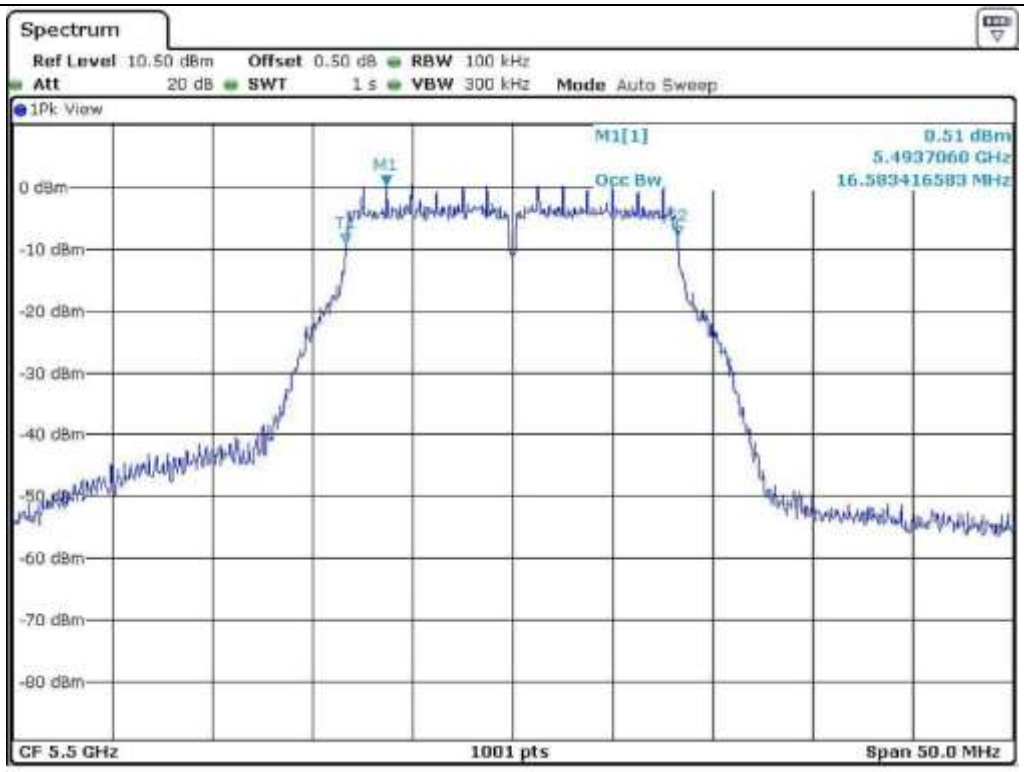
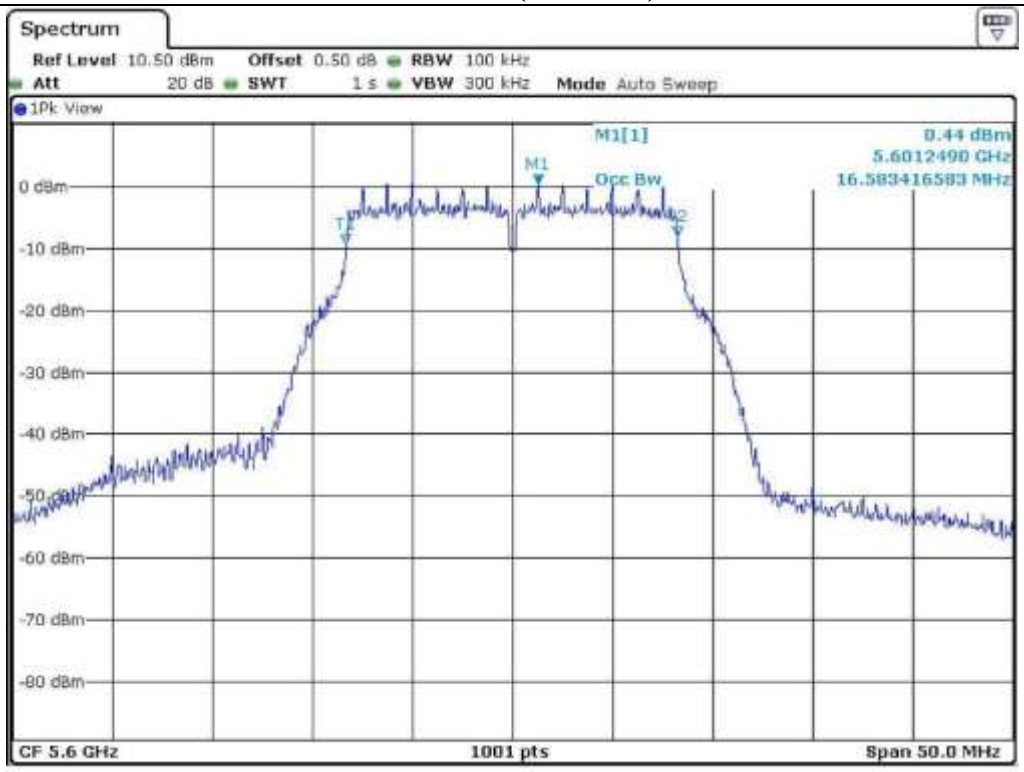


Low Channel (5 500 MHz)



Middle Channel (5 600 MHz)

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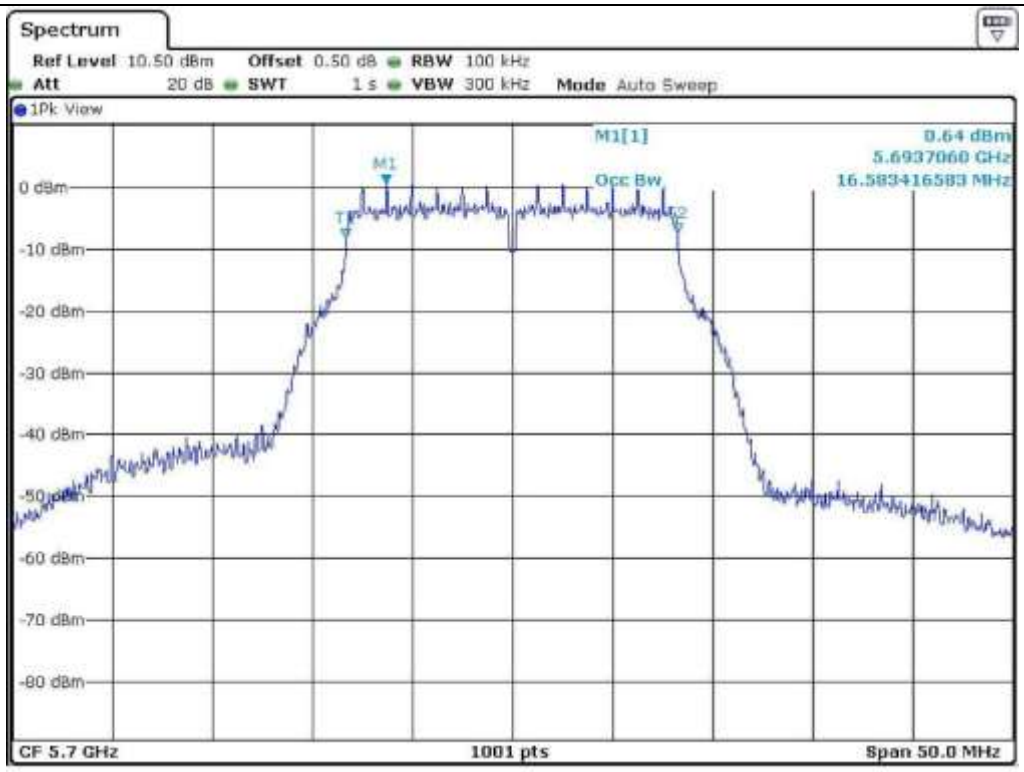
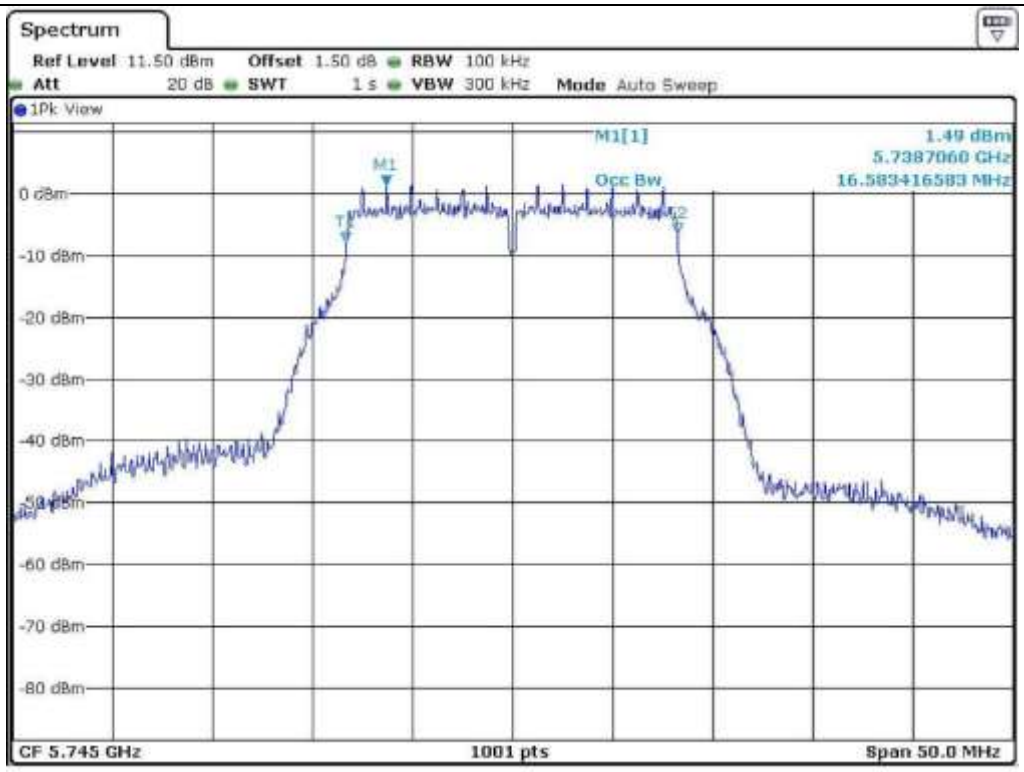
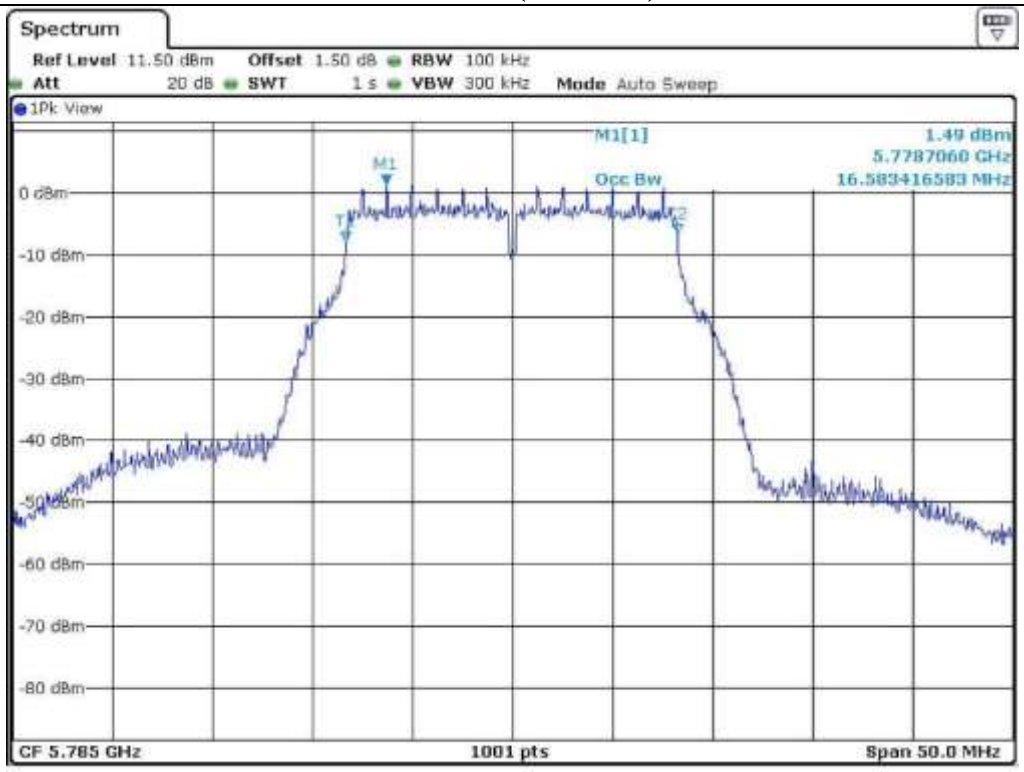


High Channel (5 700 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)

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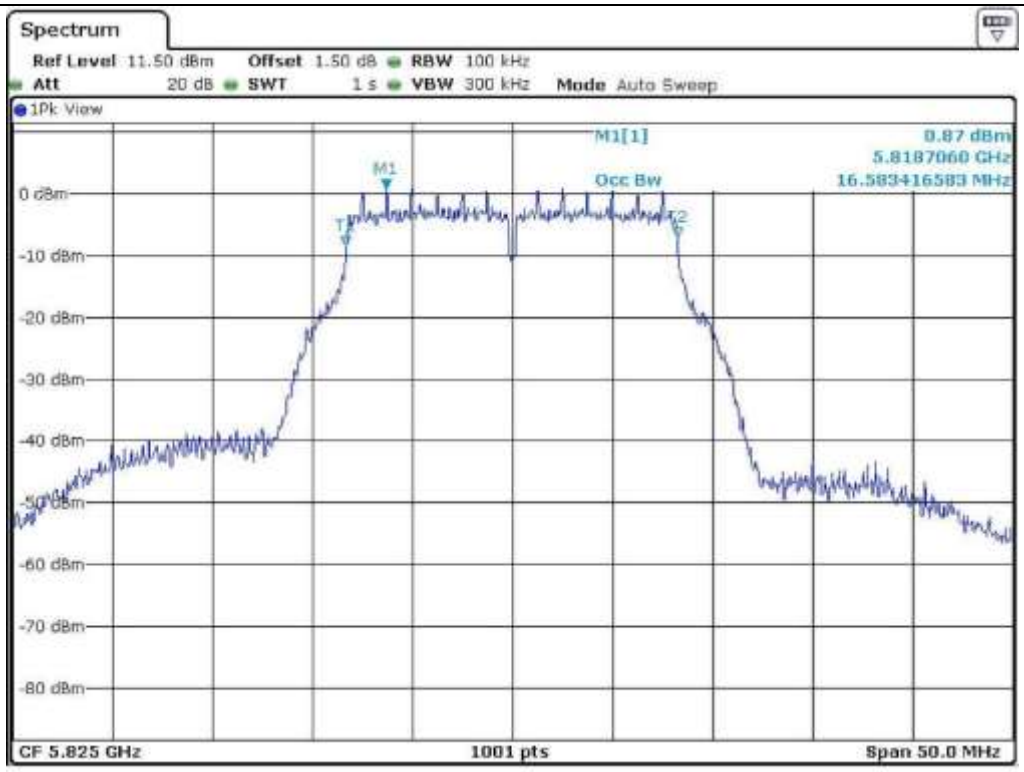

High Channel (5 825 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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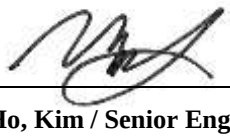
7.4.2 Test data for Antenna 1

-. Test Date : June 16, 2015

-. Test Result : Pass

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5 150 ~ 5 250	Low	5 180	21.28	16.53
	Middle	5 200	21.28	16.53
	High	5 240	21.28	16.53
5 250 ~ 5 350	Low	5 260	21.23	16.53
	Middle	5 300	21.23	16.53
	High	5 320	21.23	16.53
5 470 ~ 5 725	Low	5 500	20.98	16.58
	Middle	5 600	20.98	16.58
	High	5 700	20.98	16.58
5 725 ~ 5 850	Low	5 745	20.78	16.58
	Middle	5 785	20.78	16.58
	High	5 825	20.78	16.58



Tested by: Tae-Ho, Kim / Senior Engineer

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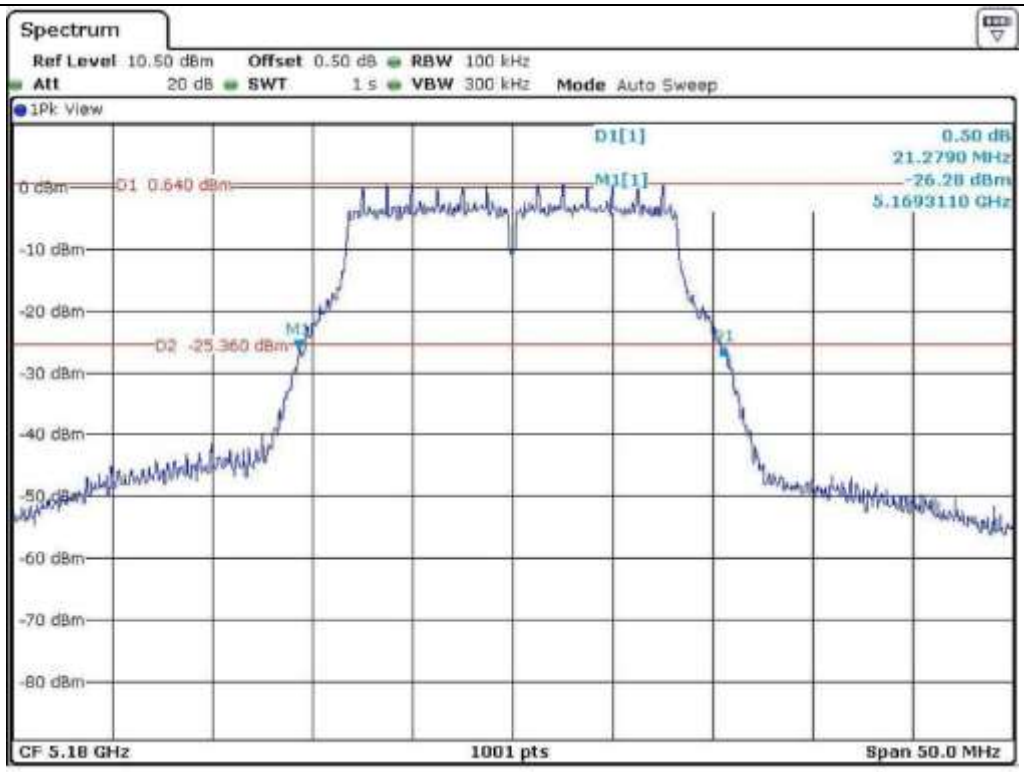
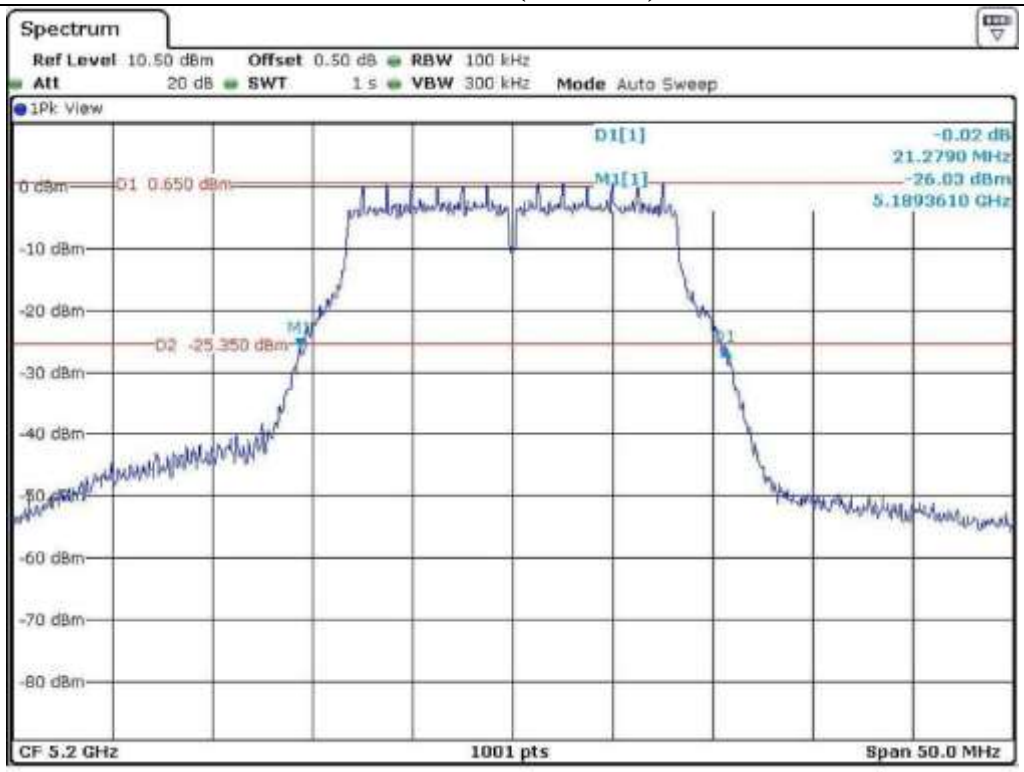


Low Channel (5 180 MHz)



Middle Channel (5 200 MHz)

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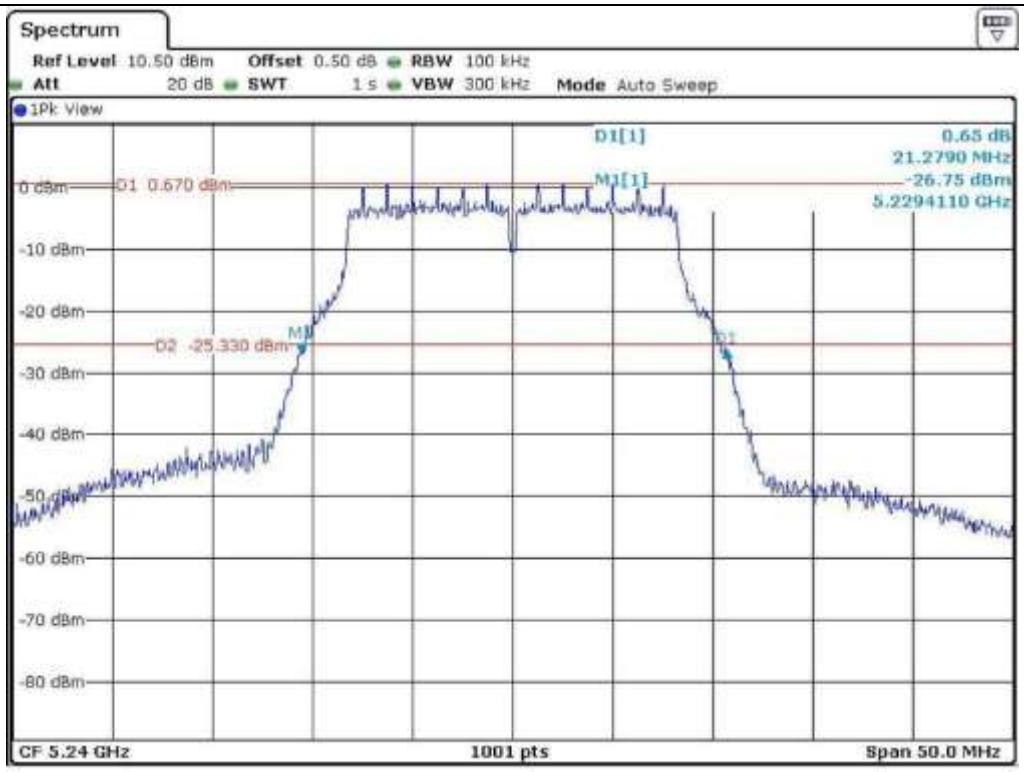

High Channel (5 240 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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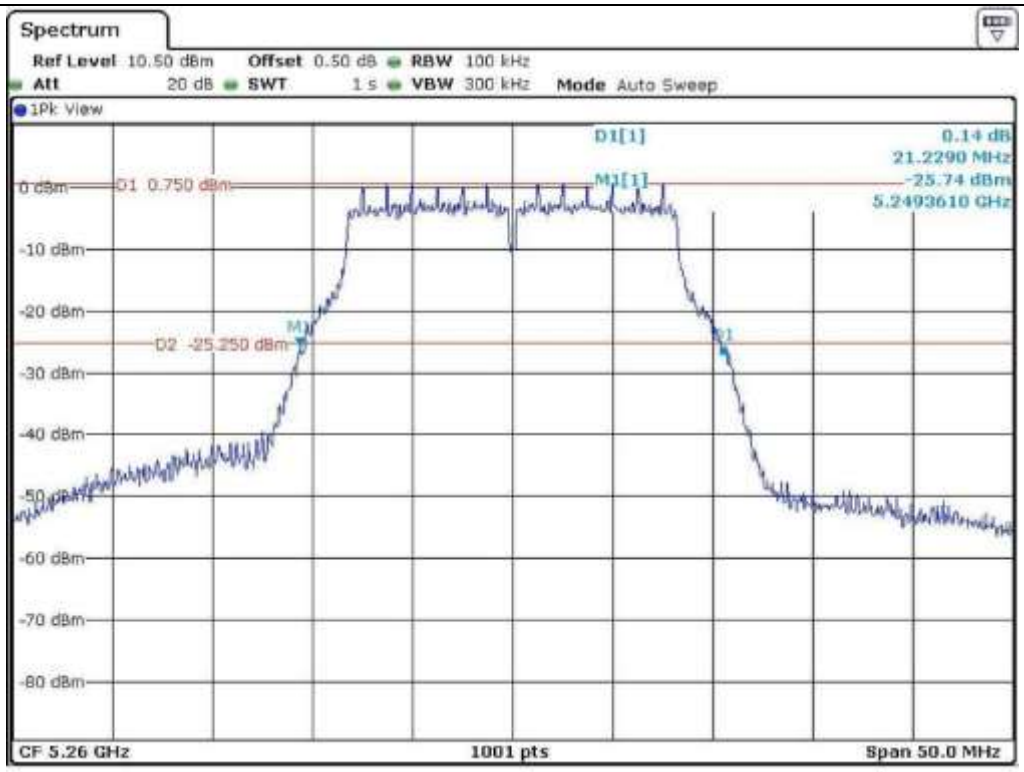
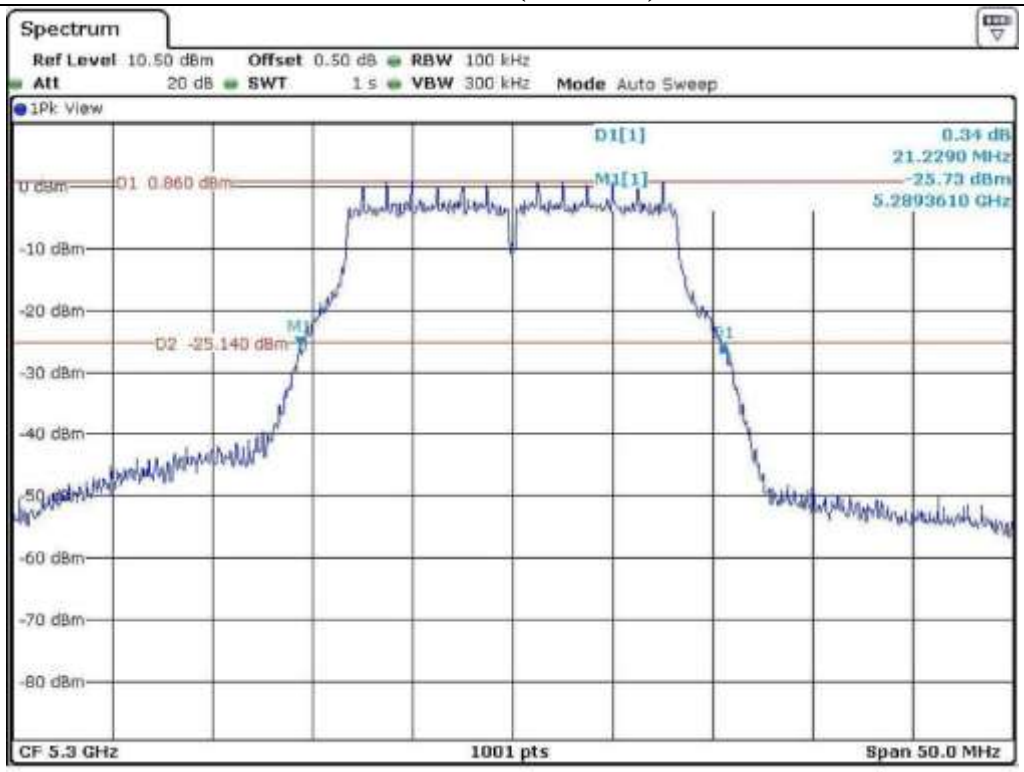


Low Channel (5 260 MHz)



Middle Channel (5 300 MHz)

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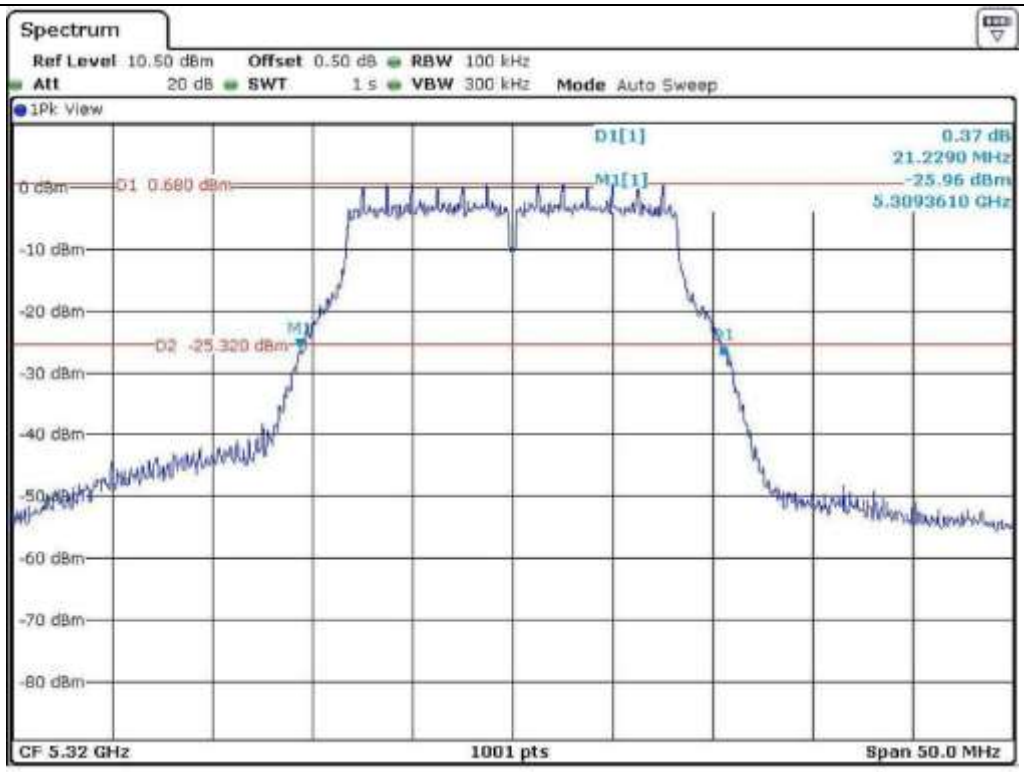
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



High Channel (5 320 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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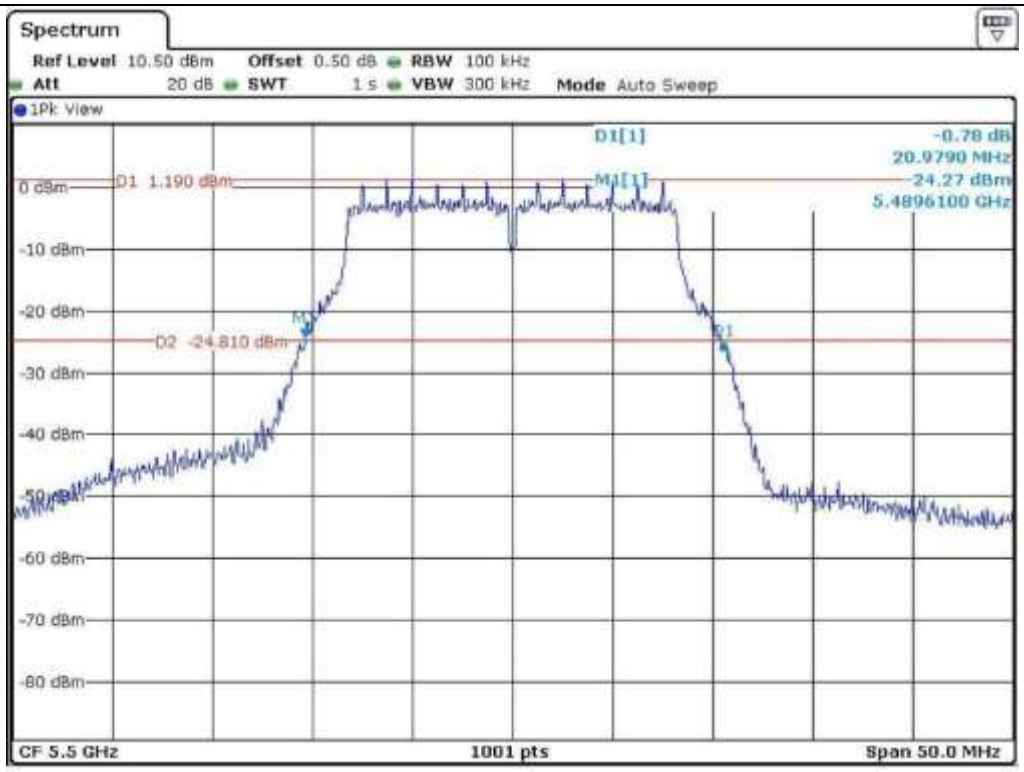
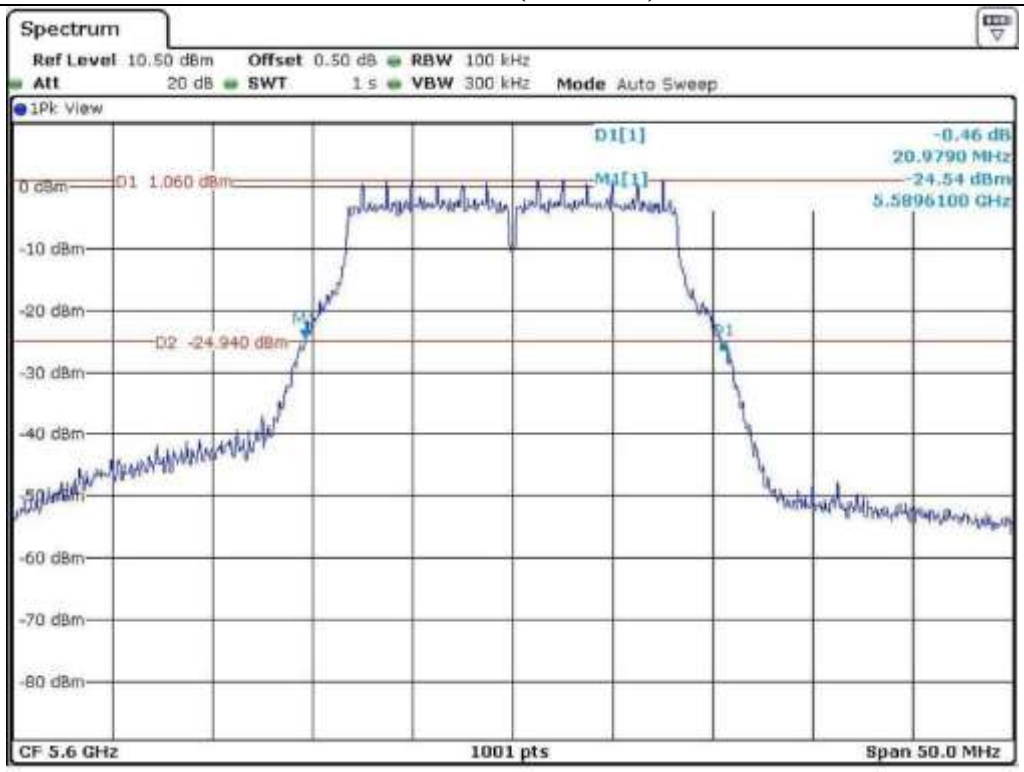


Low Channel (5 500 MHz)



Middle Channel (5 600 MHz)

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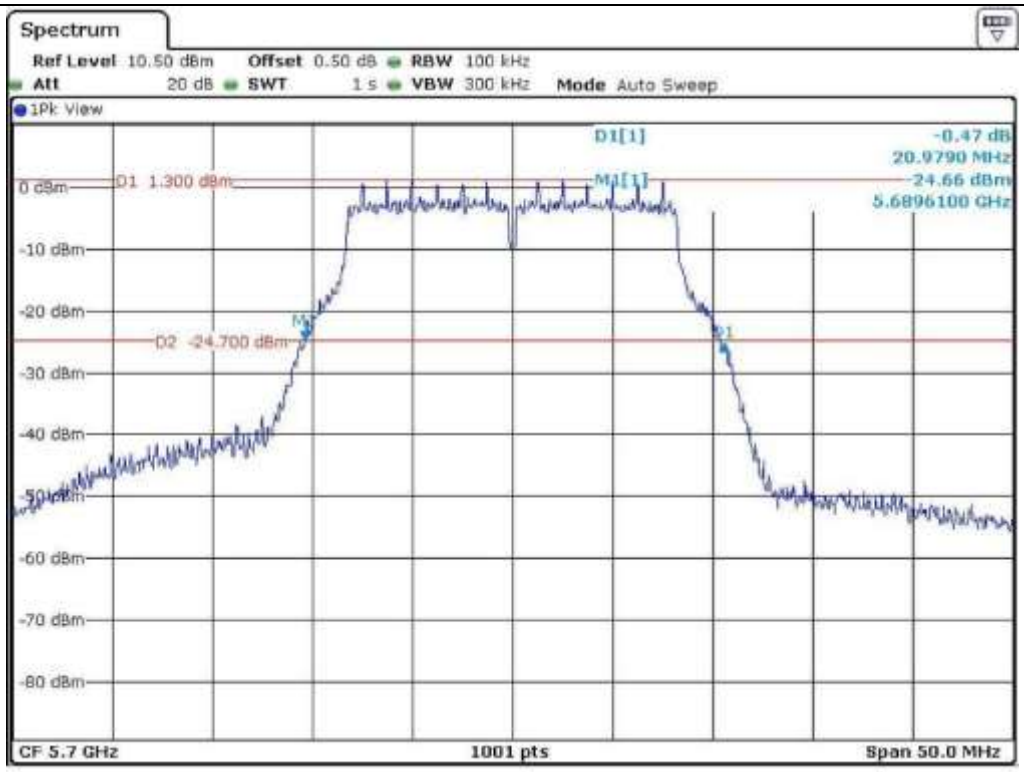

High Channel (5 700 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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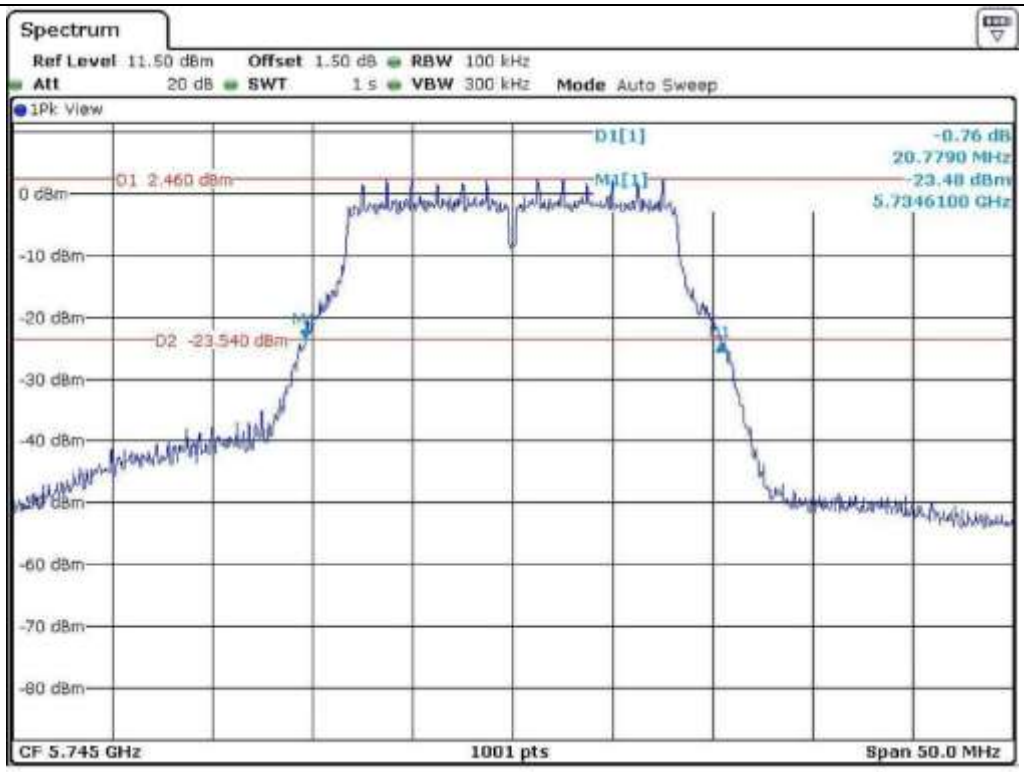
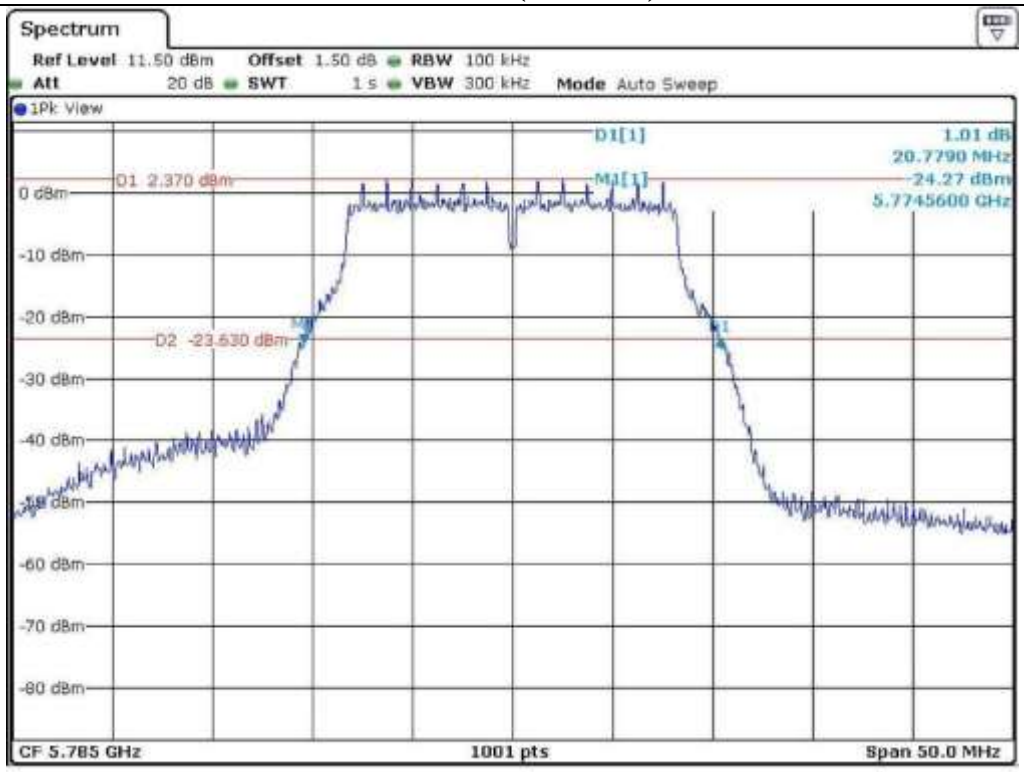


Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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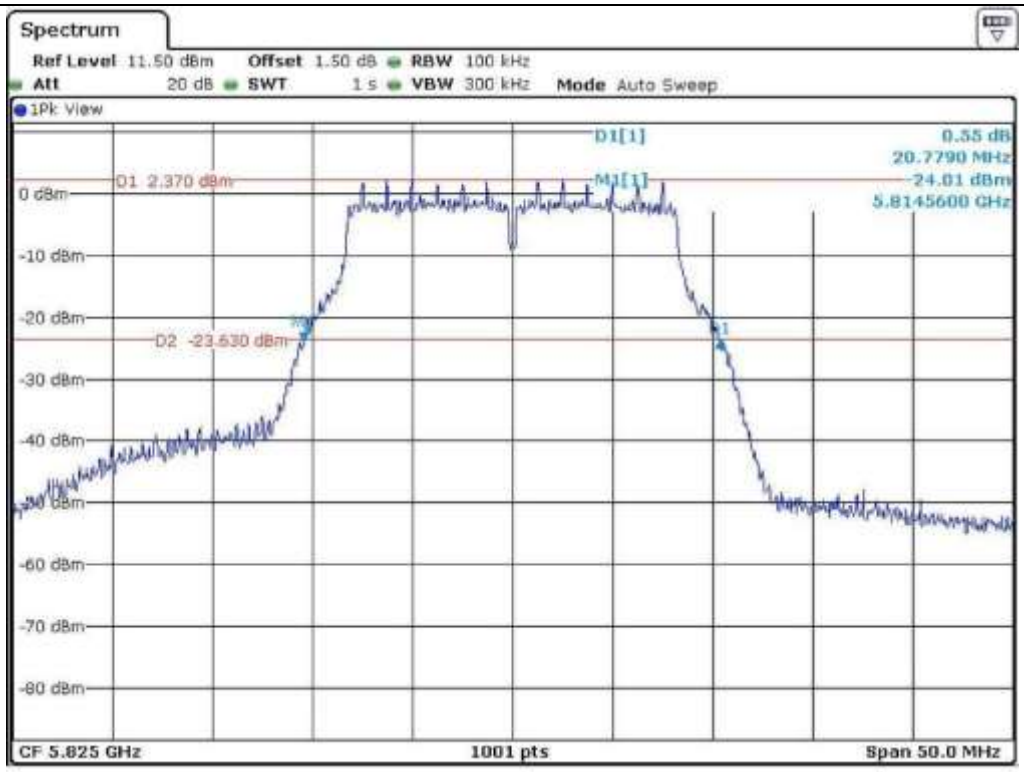

High Channel (5 825 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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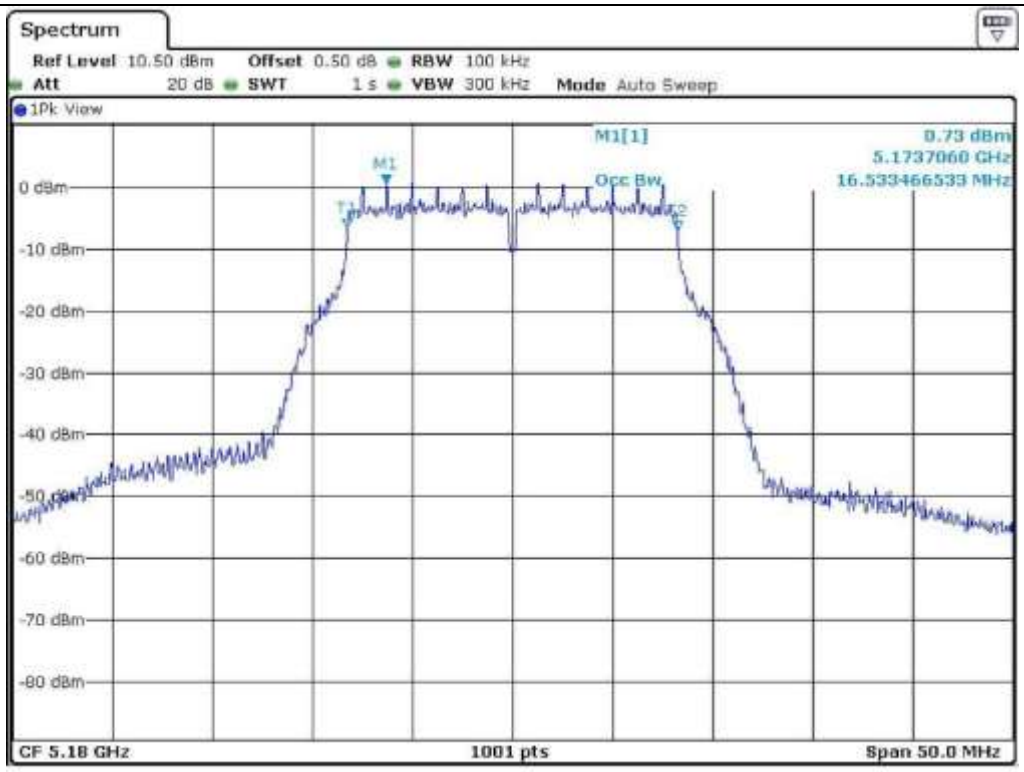
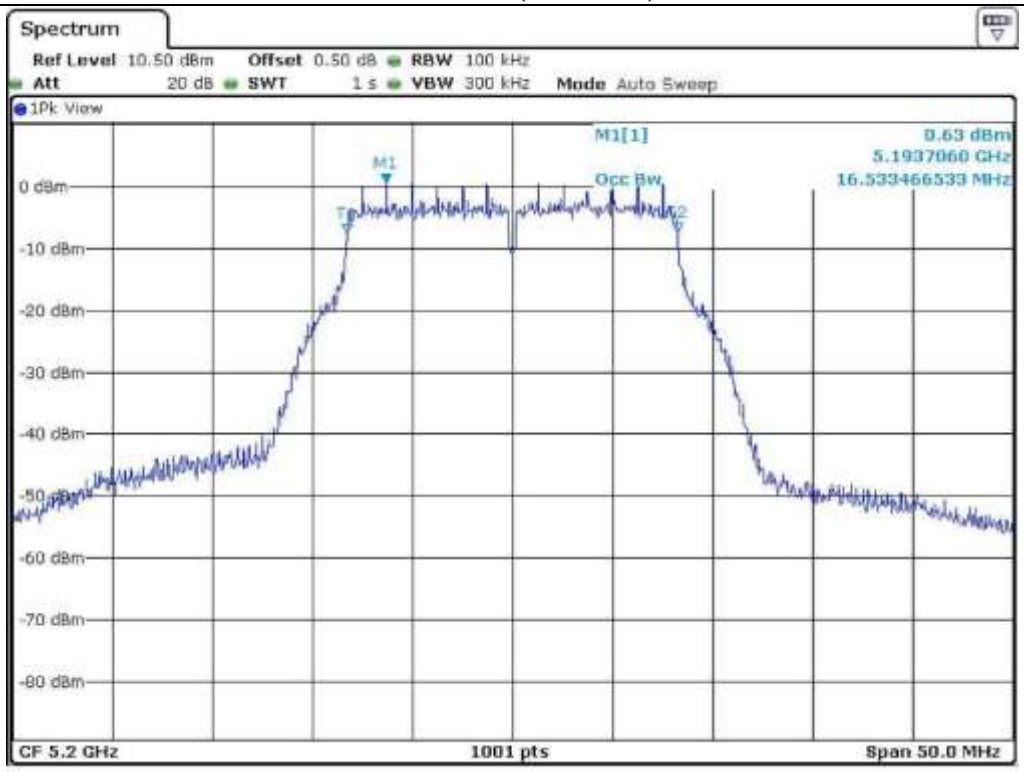


Low Channel (5 180 MHz)



Middle Channel (5 200 MHz)

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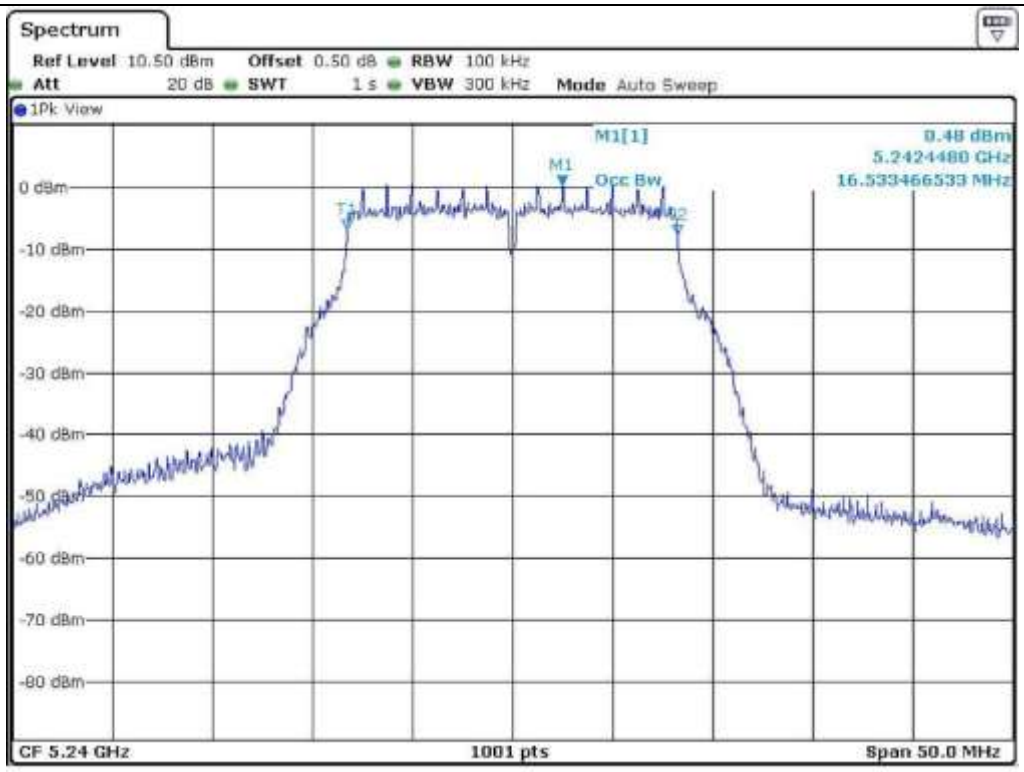

High Channel (5 240 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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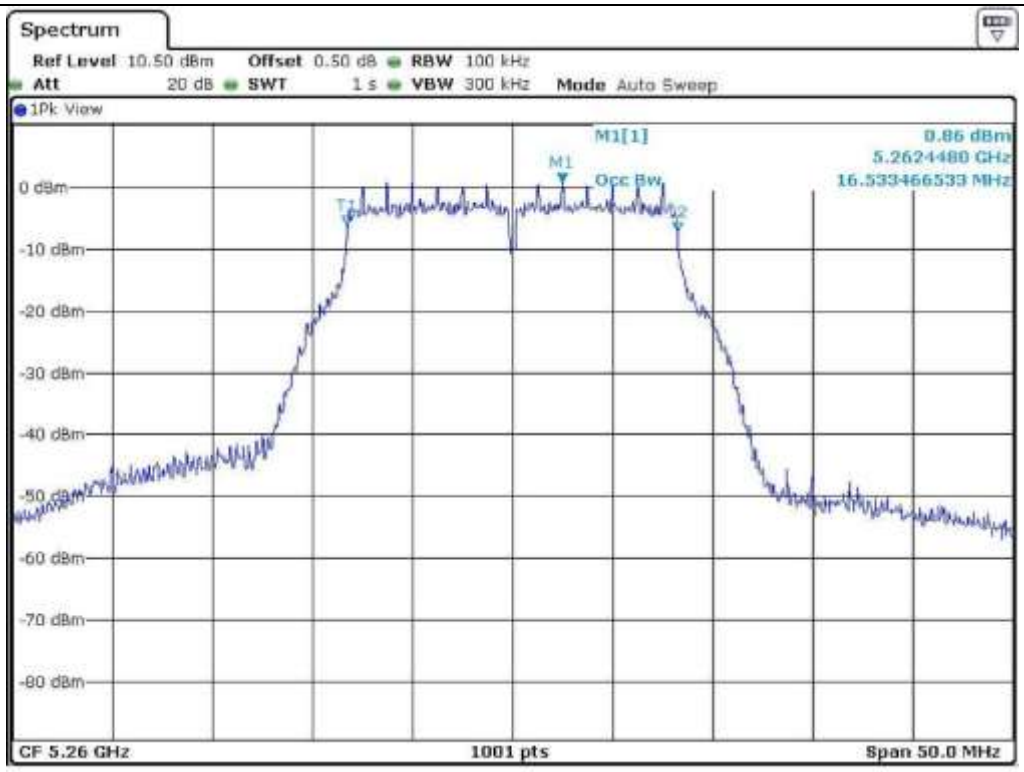
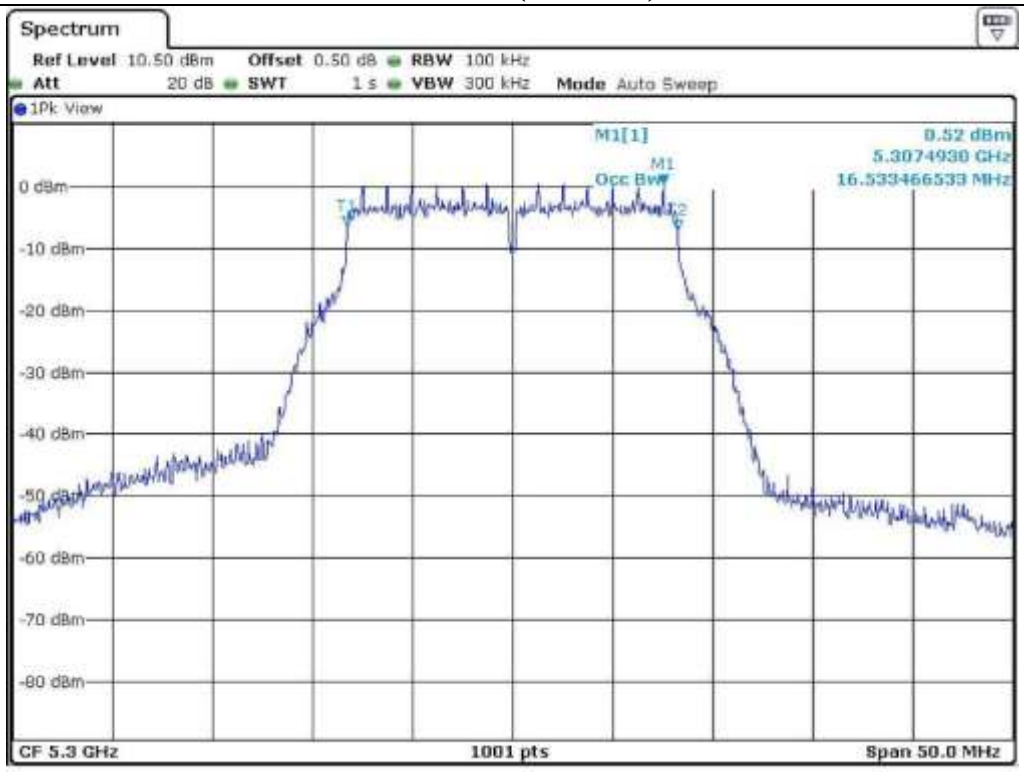


Low Channel (5 260 MHz)



Middle Channel (5 300 MHz)

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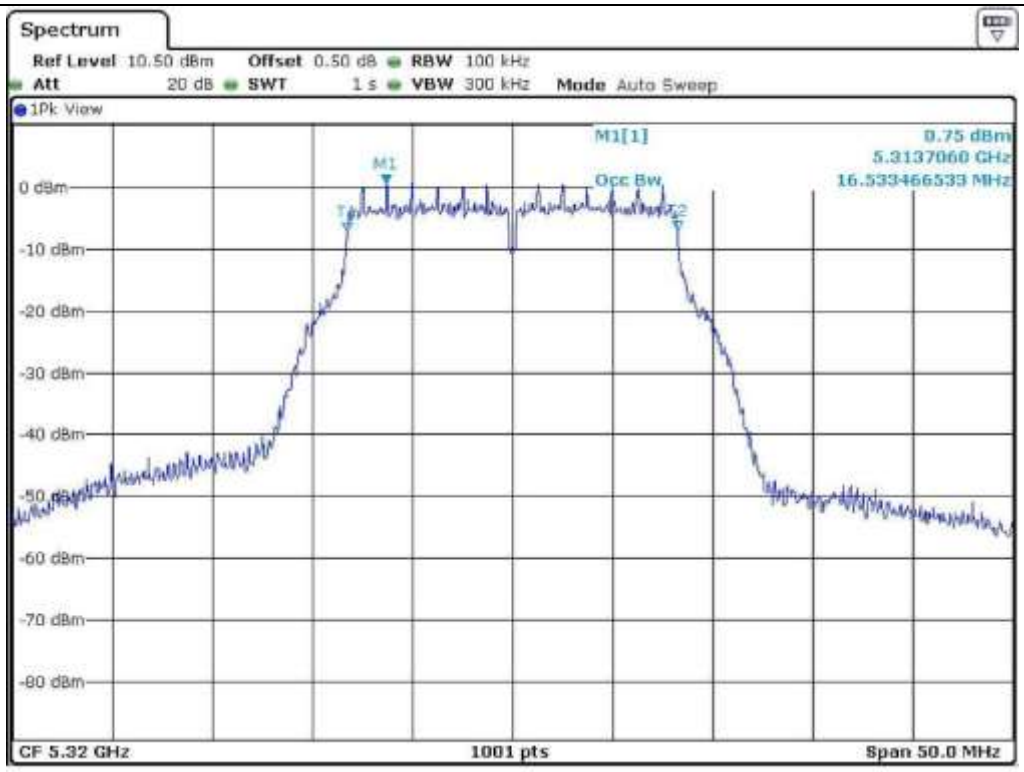

High Channel (5 320 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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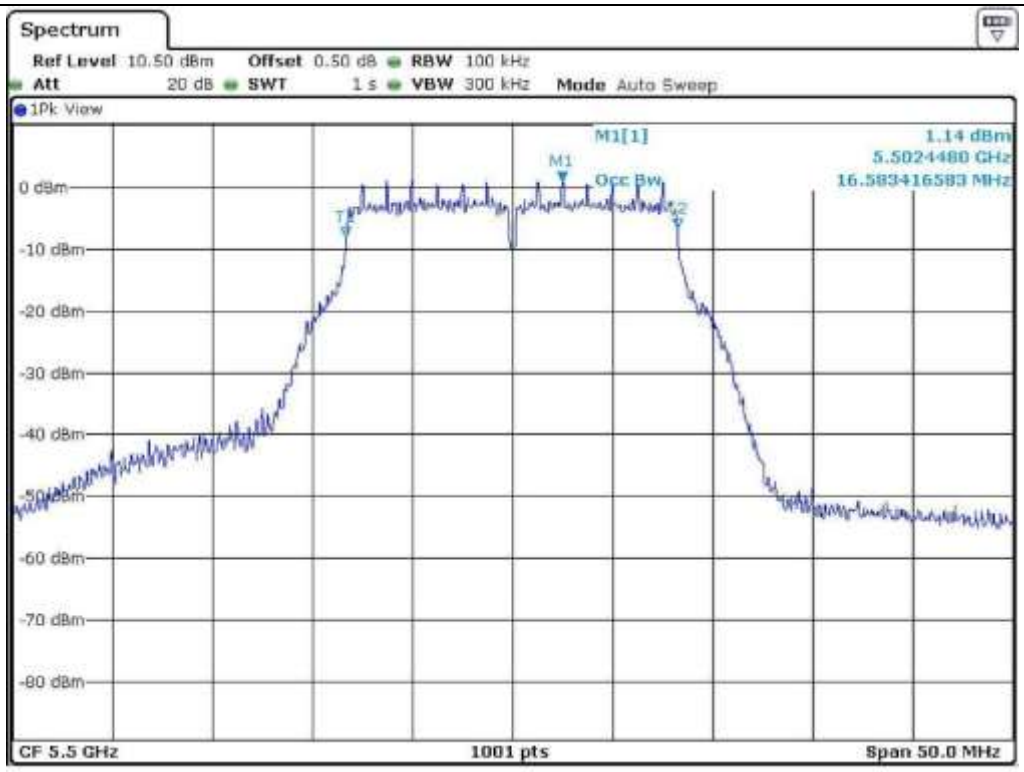
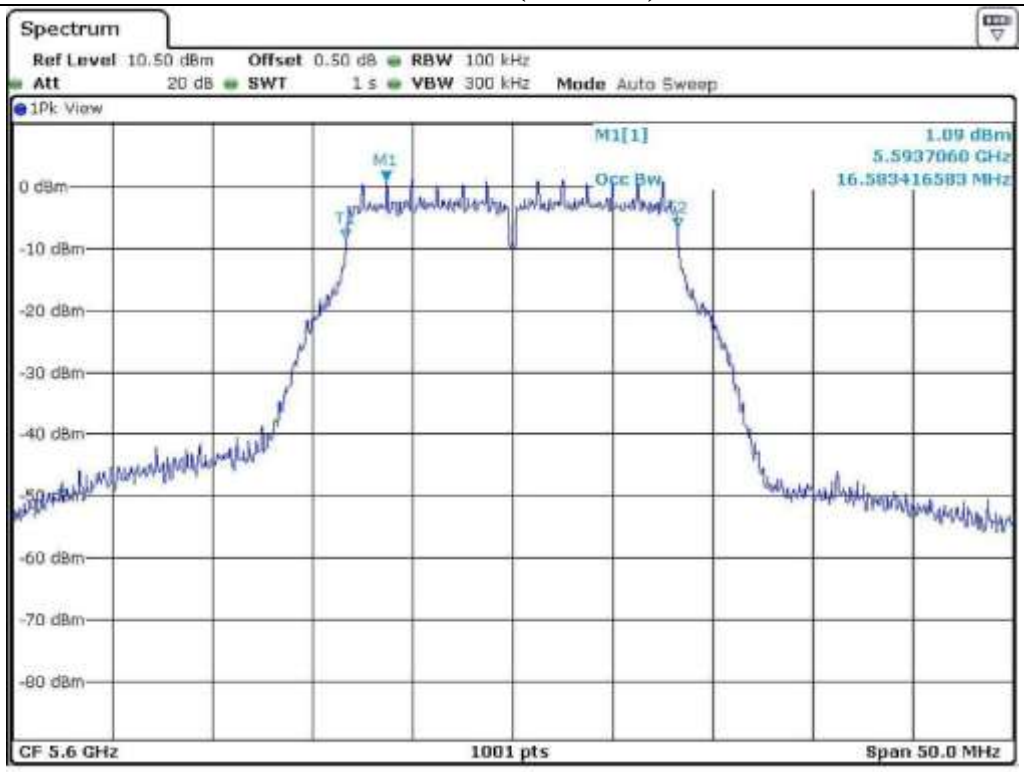


Low Channel (5 500 MHz)



Middle Channel (5 600 MHz)

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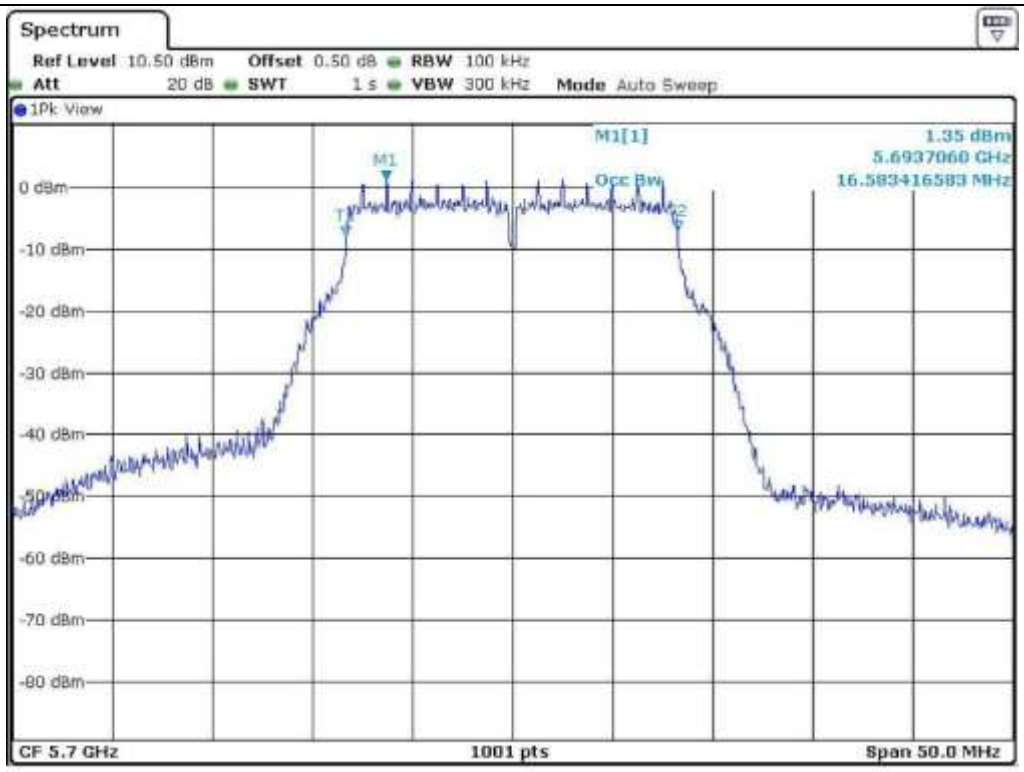
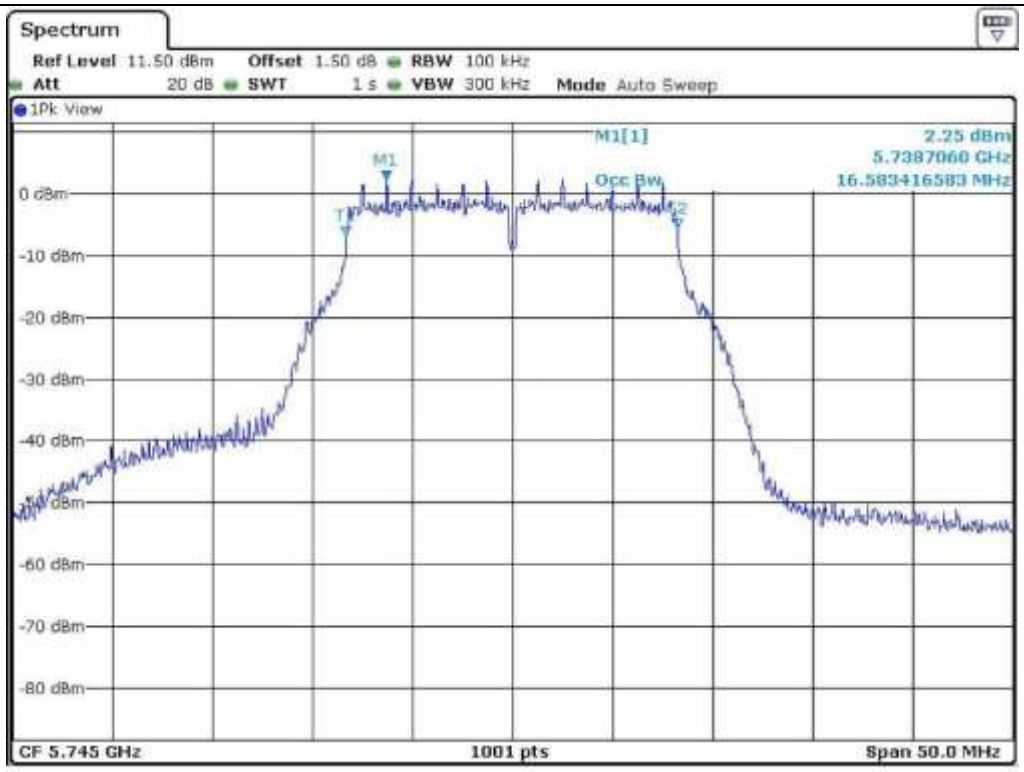
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

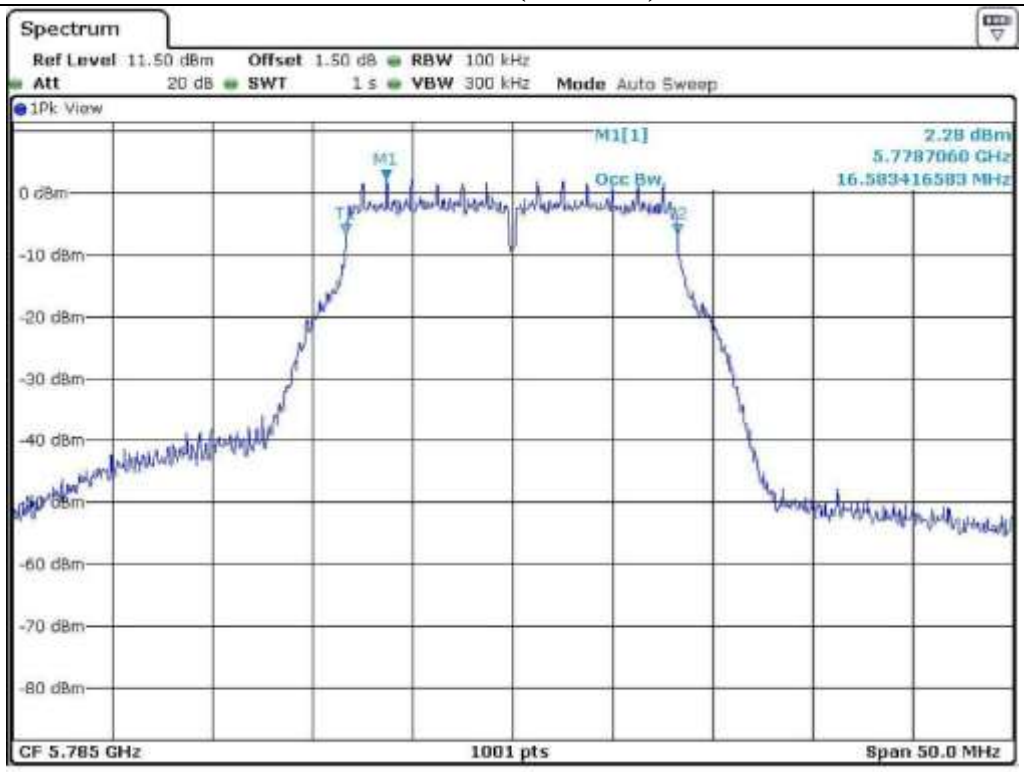


High Channel (5 700 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

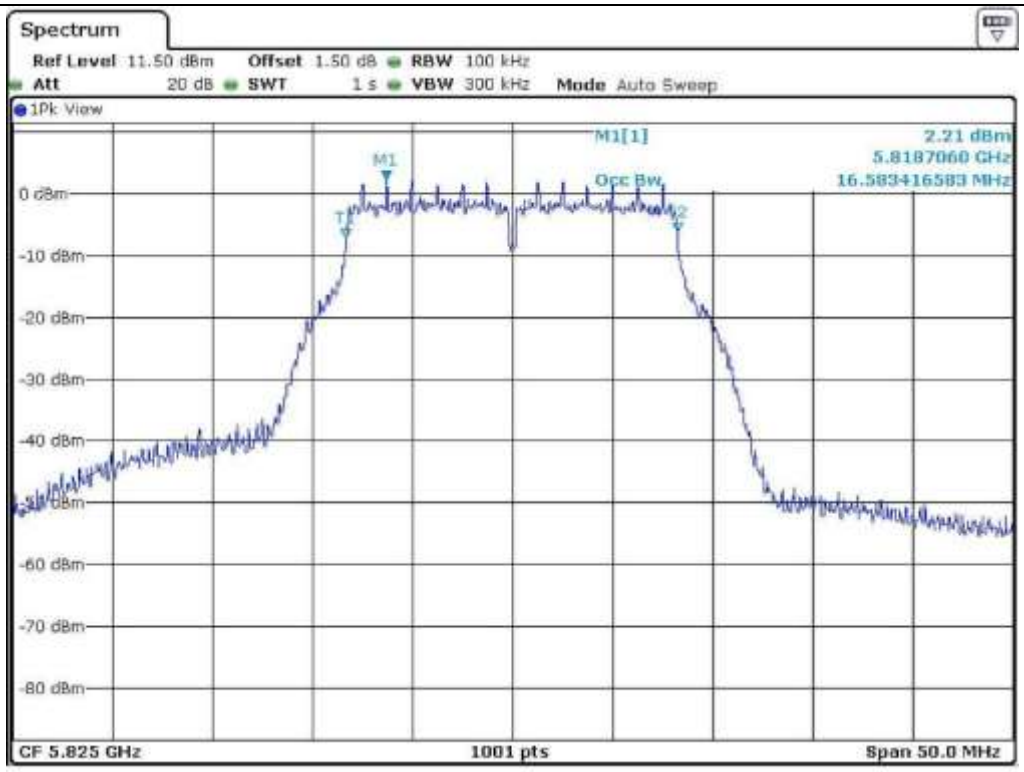


Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



High Channel (5 825 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

7.5 Test data for 802.11n_HT20 RLAN Mode

7.5.1 Test data for Antenna 0

-. Test Date : June 19, 2015

-. Test Result : Pass

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5 150 ~ 5 250	Low	5 180	21.28	17.73
	Middle	5 200	21.28	17.73
	High	5 240	21.28	17.73
5 250 ~ 5 350	Low	5 260	21.28	17.73
	Middle	5 300	21.28	17.73
	High	5 320	21.28	17.73
5 470 ~ 5 725	Low	5 500	21.38	17.78
	Middle	5 600	21.38	17.78
	High	5 700	21.38	17.78
5 725 ~ 5 850	Low	5 745	21.28	17.78
	Middle	5 785	21.28	17.78
	High	5 825	21.28	17.78

Tested by: Tae-Ho, Kim / Senior Engineer

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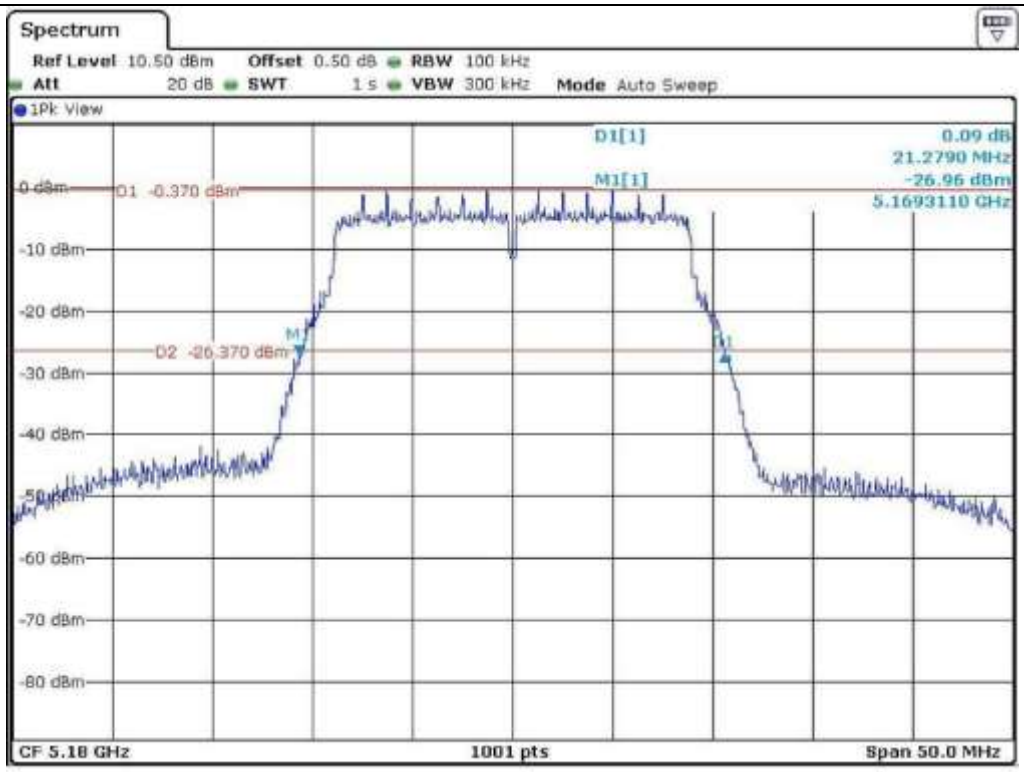
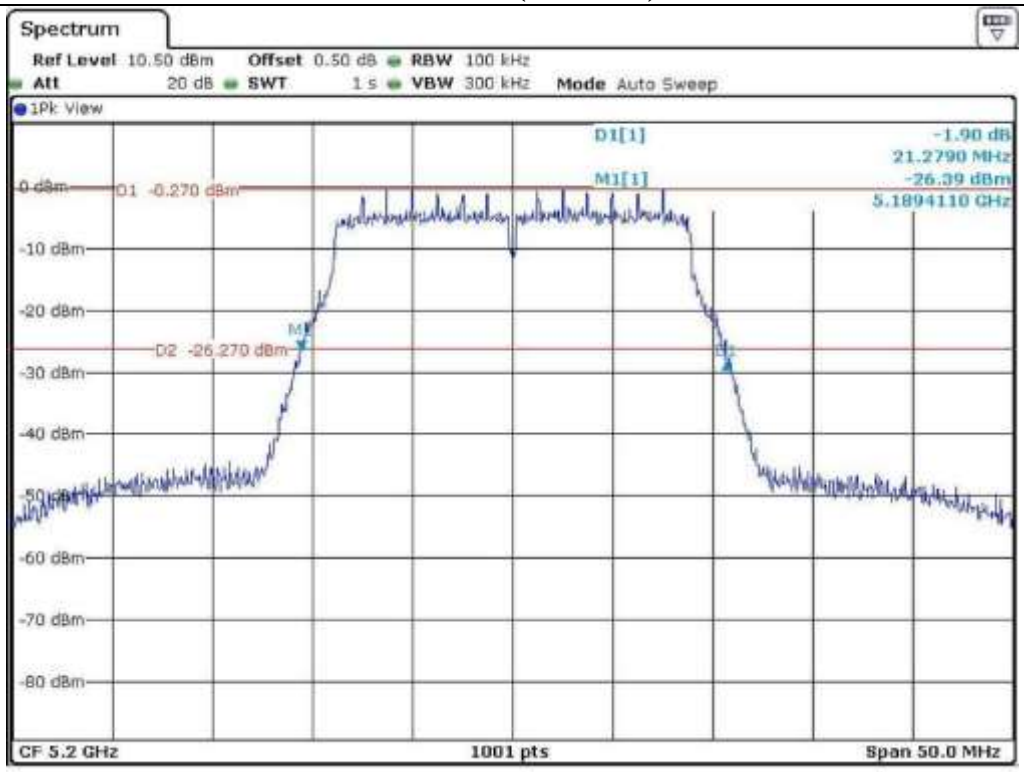
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

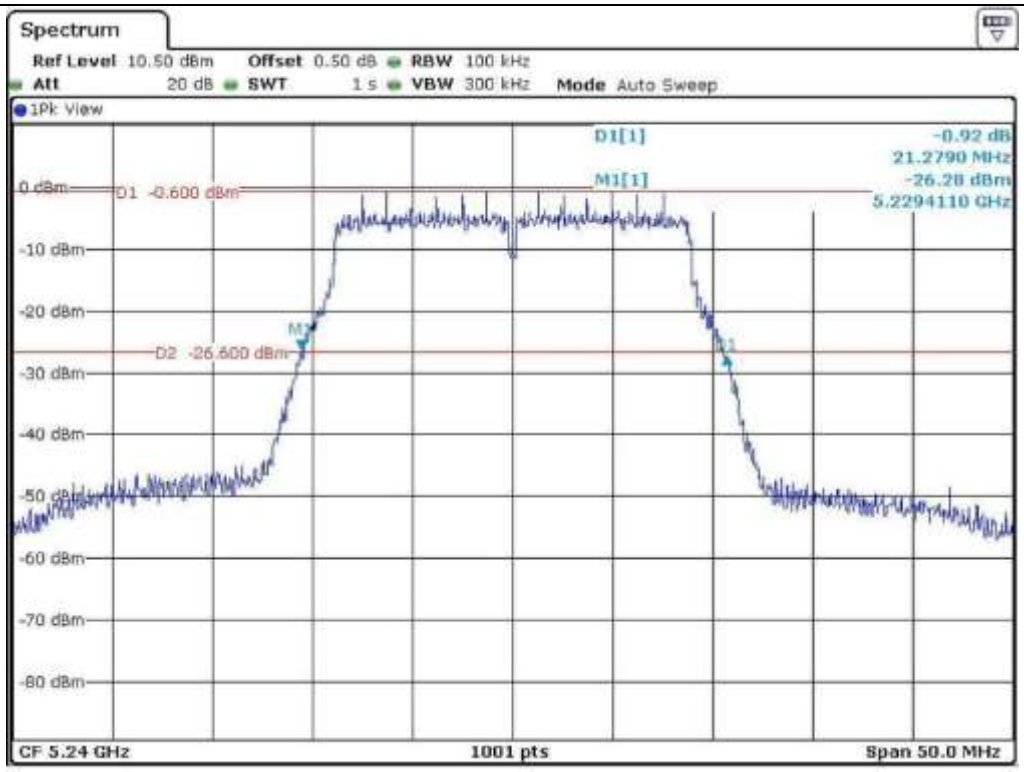


Low Channel (5 180 MHz)



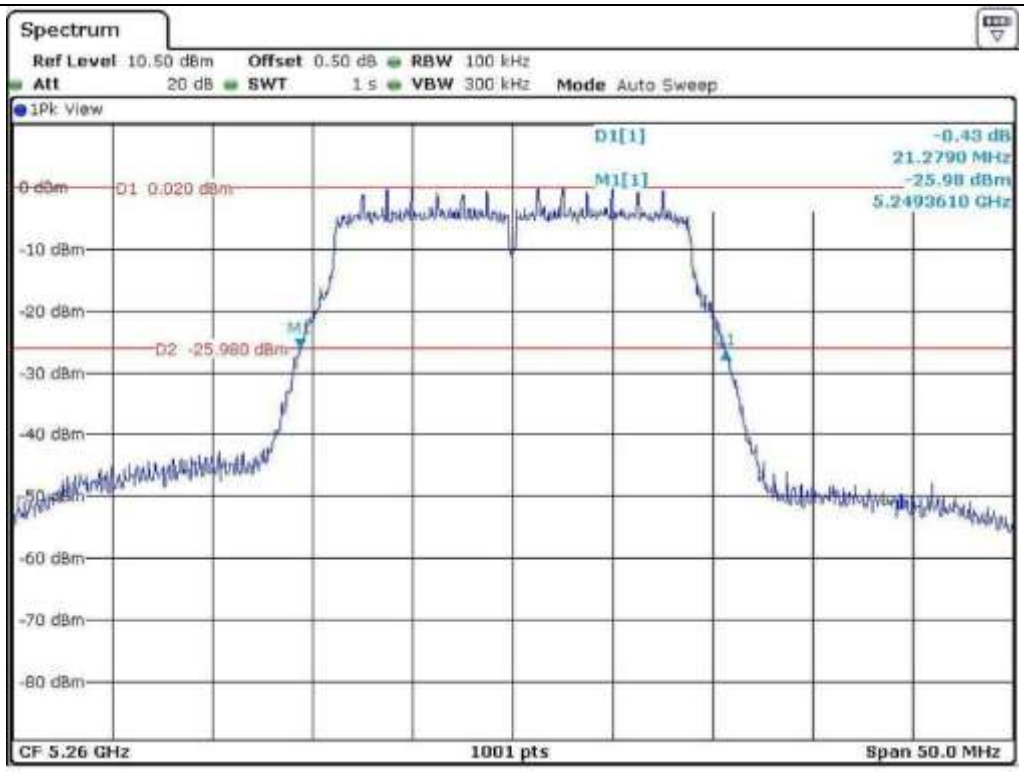
Middle Channel (5 200 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

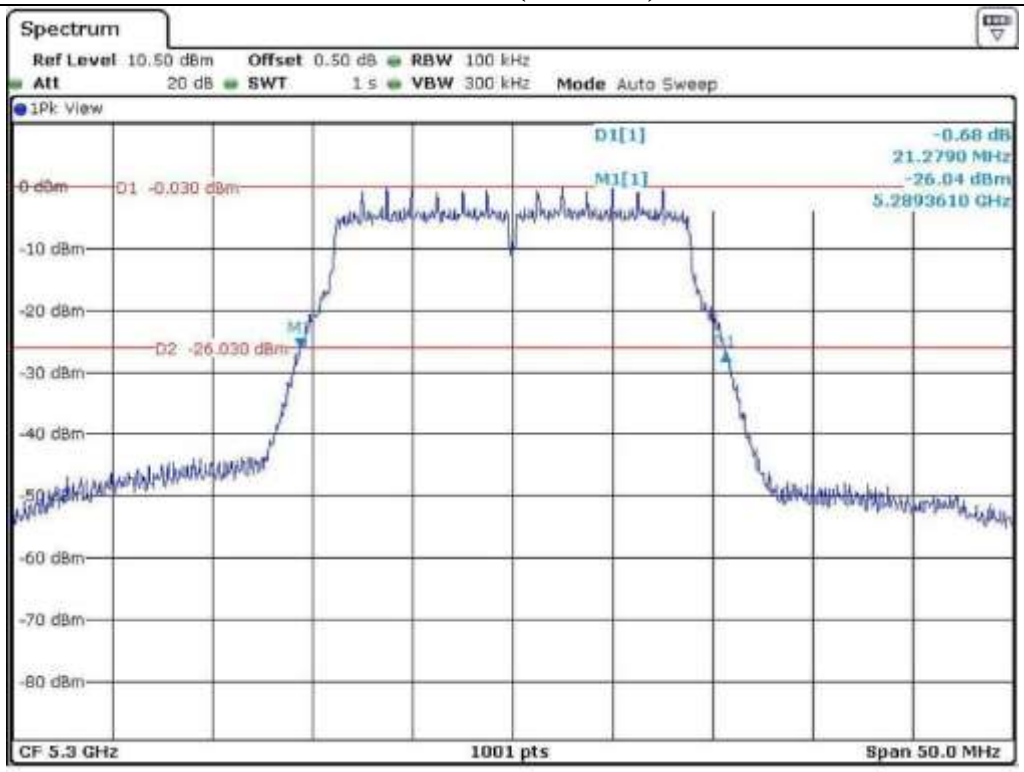


High Channel (5 240 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 260 MHz)



Middle Channel (5 300 MHz)

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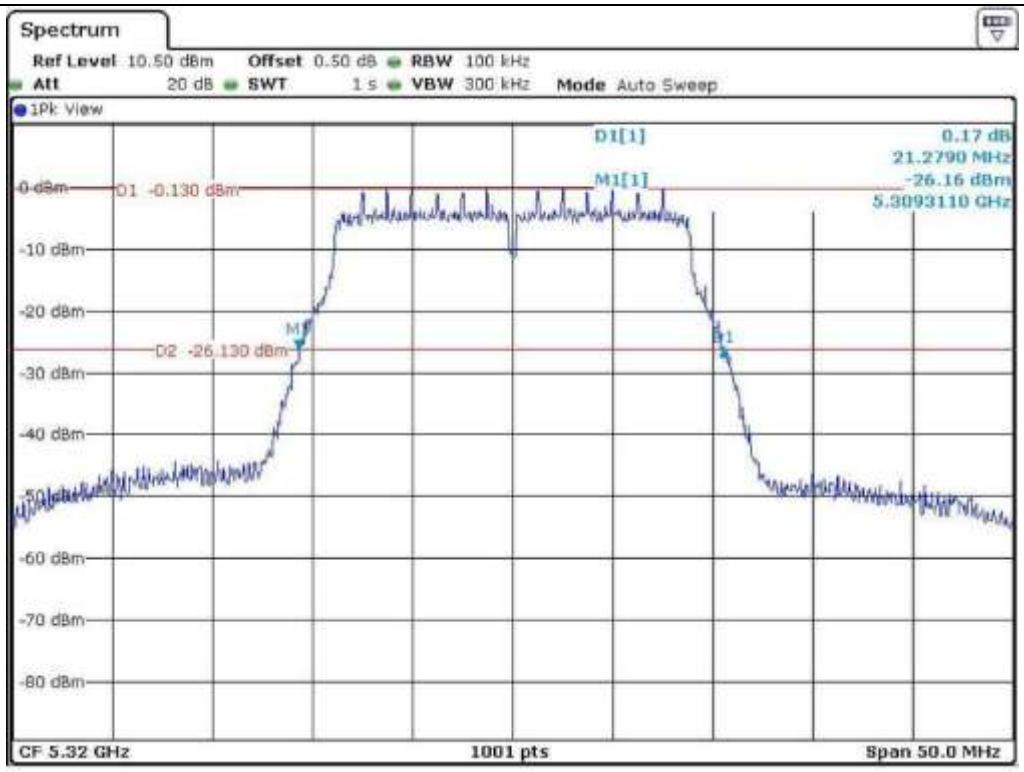
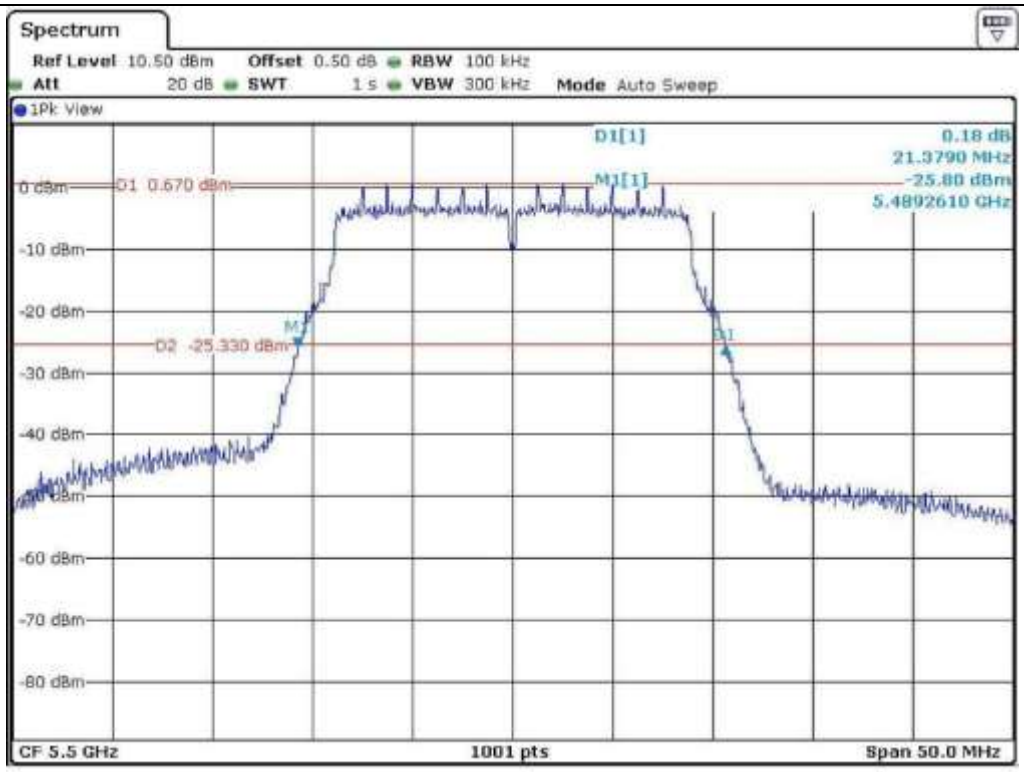
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

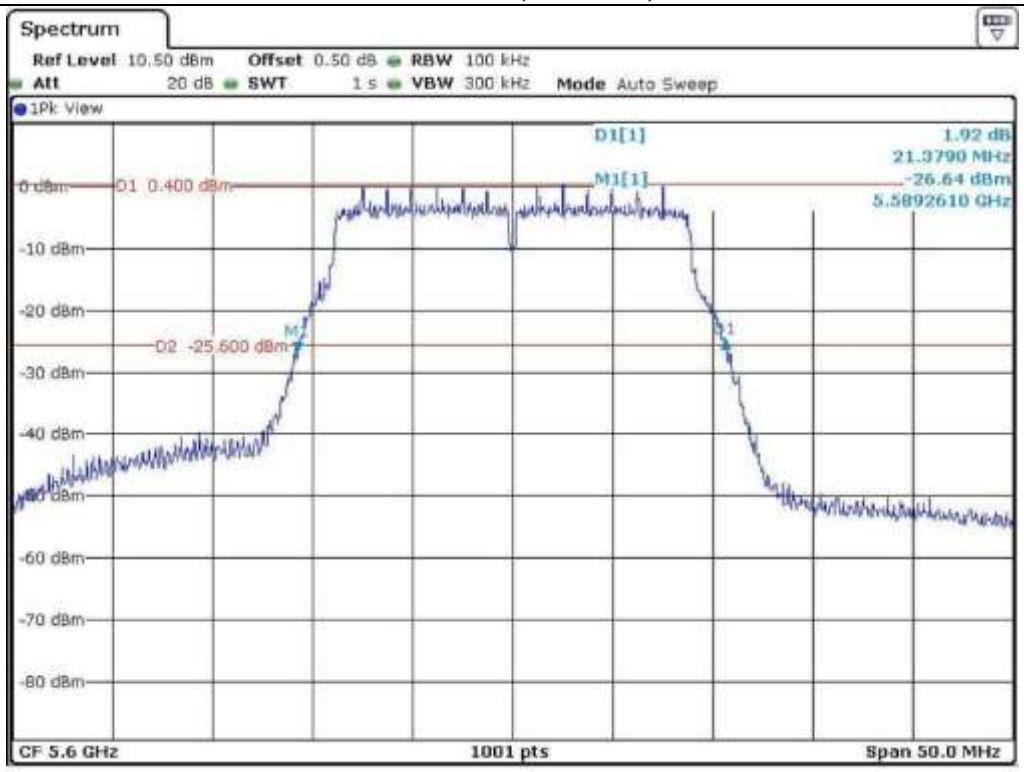


High Channel (5 320 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 500 MHz)



Middle Channel (5 600 MHz)

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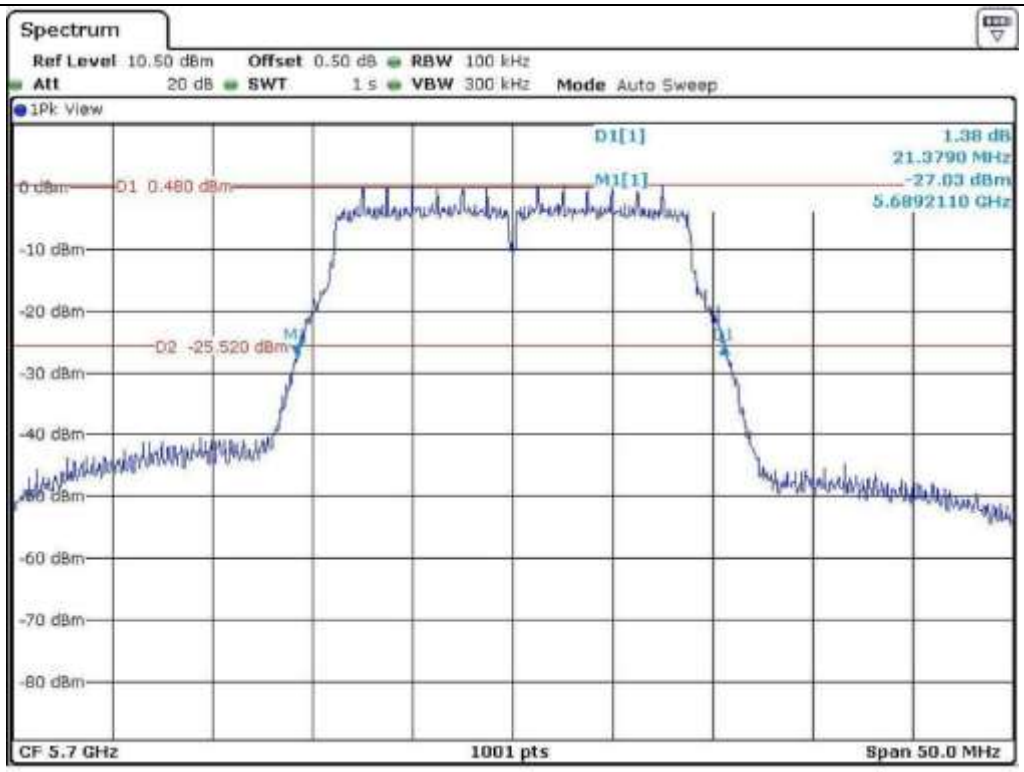
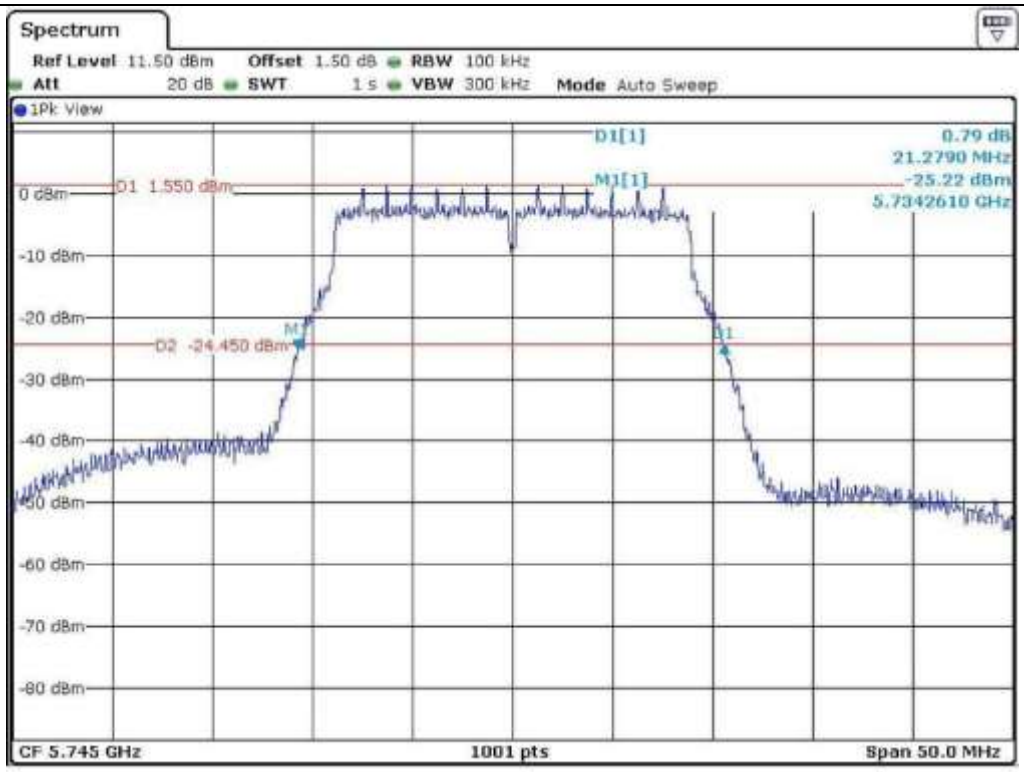
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

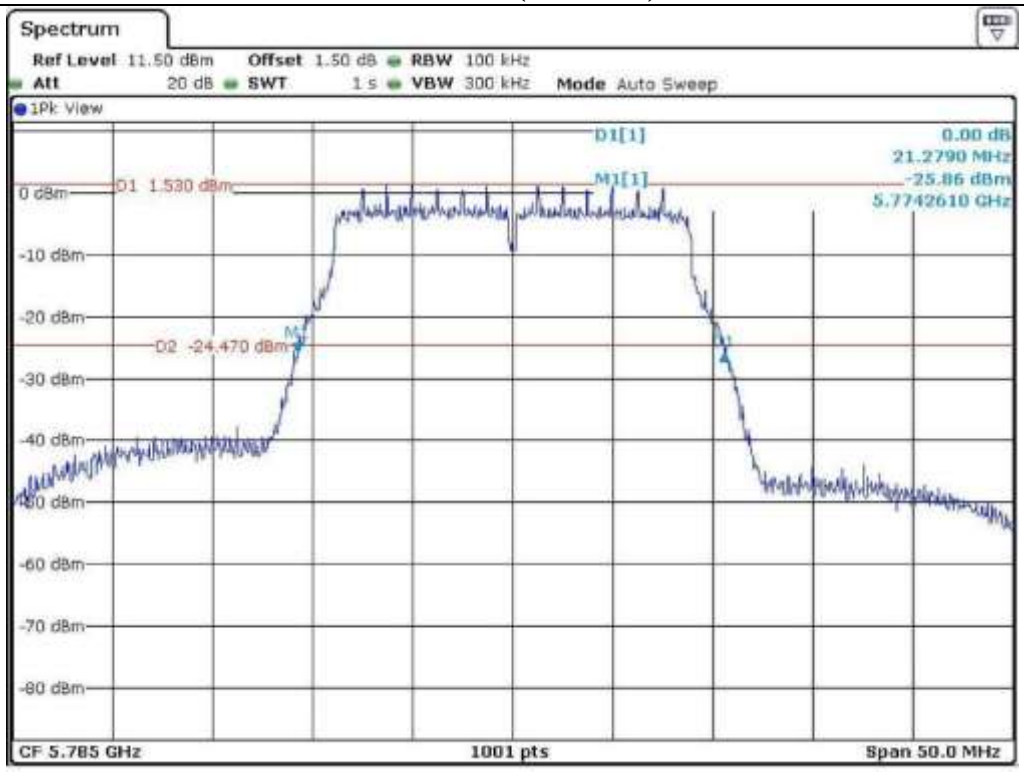


High Channel (5 700 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)

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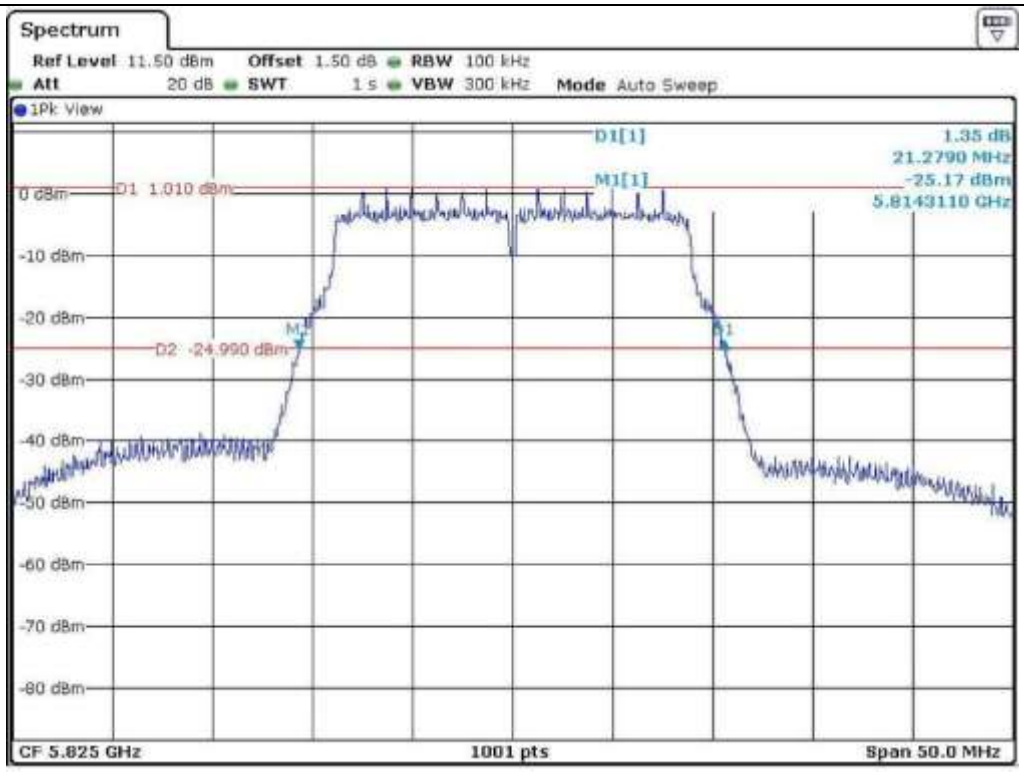
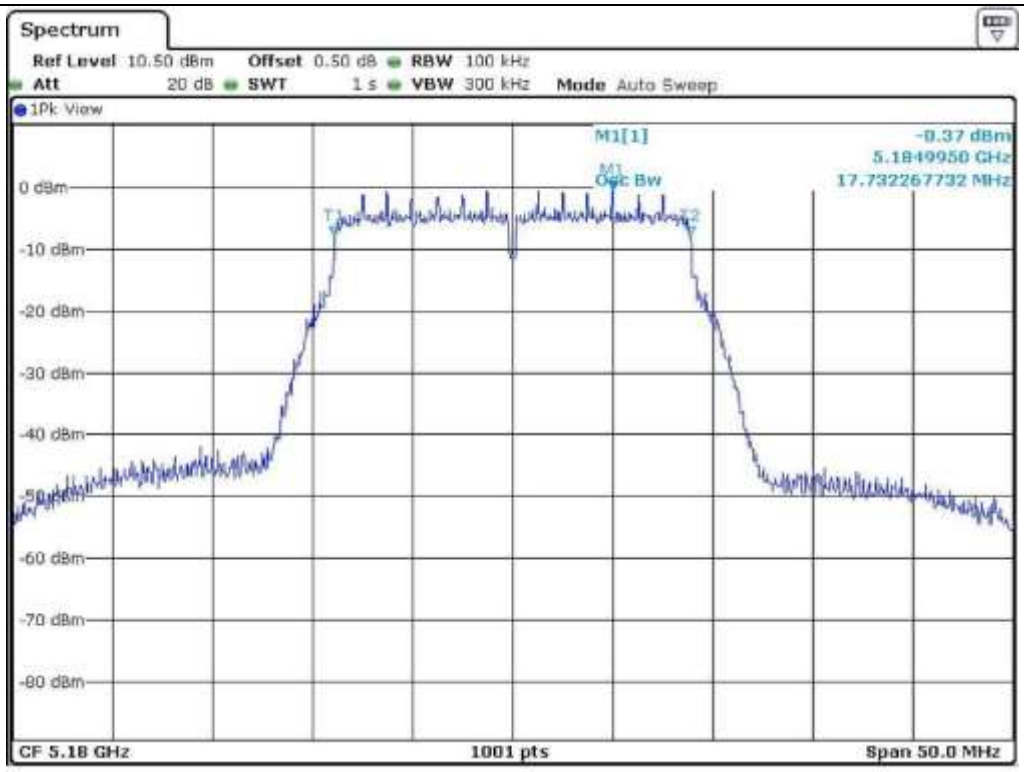
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

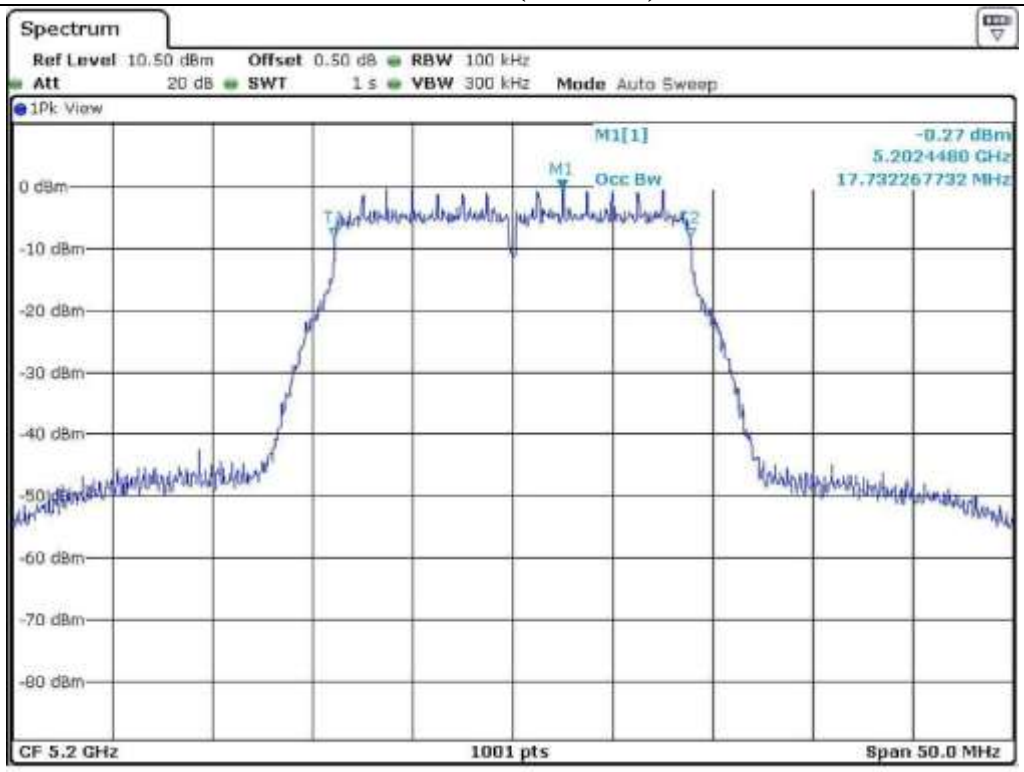


High Channel (5 825 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 180 MHz)



Middle Channel (5 200 MHz)

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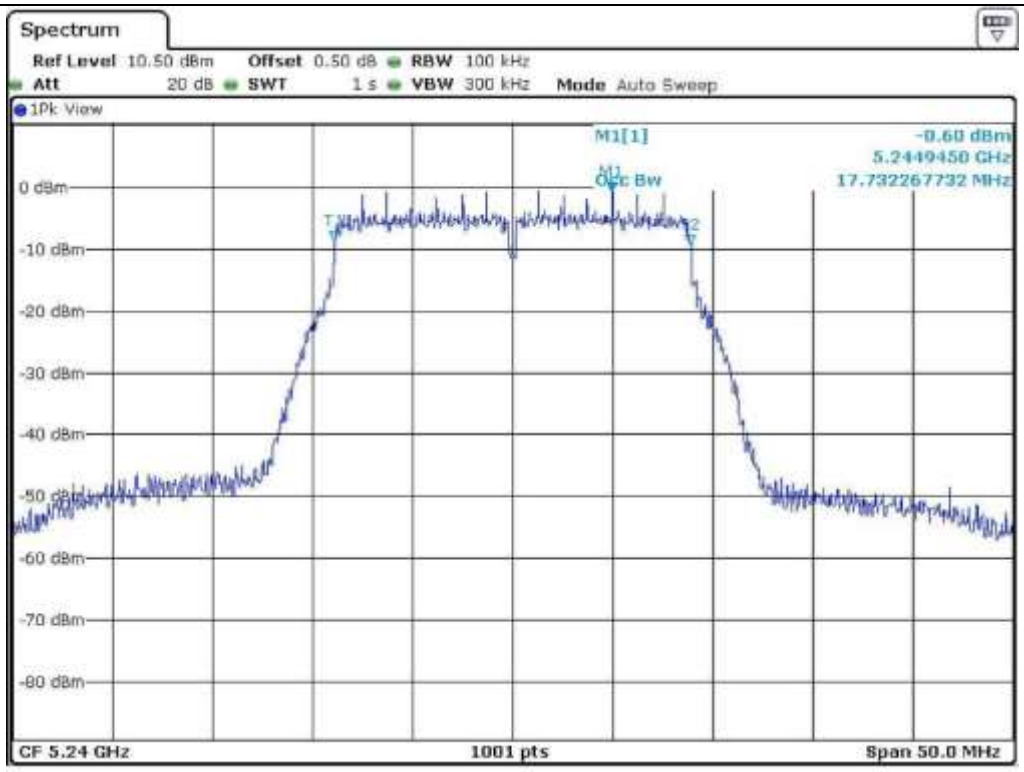
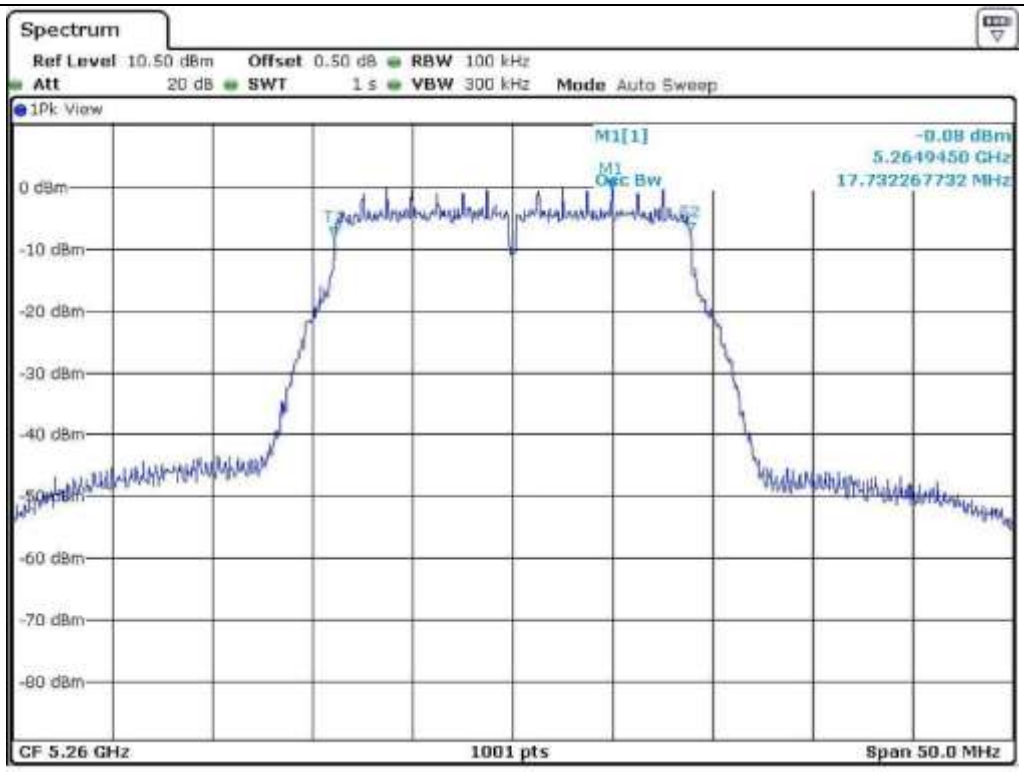
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

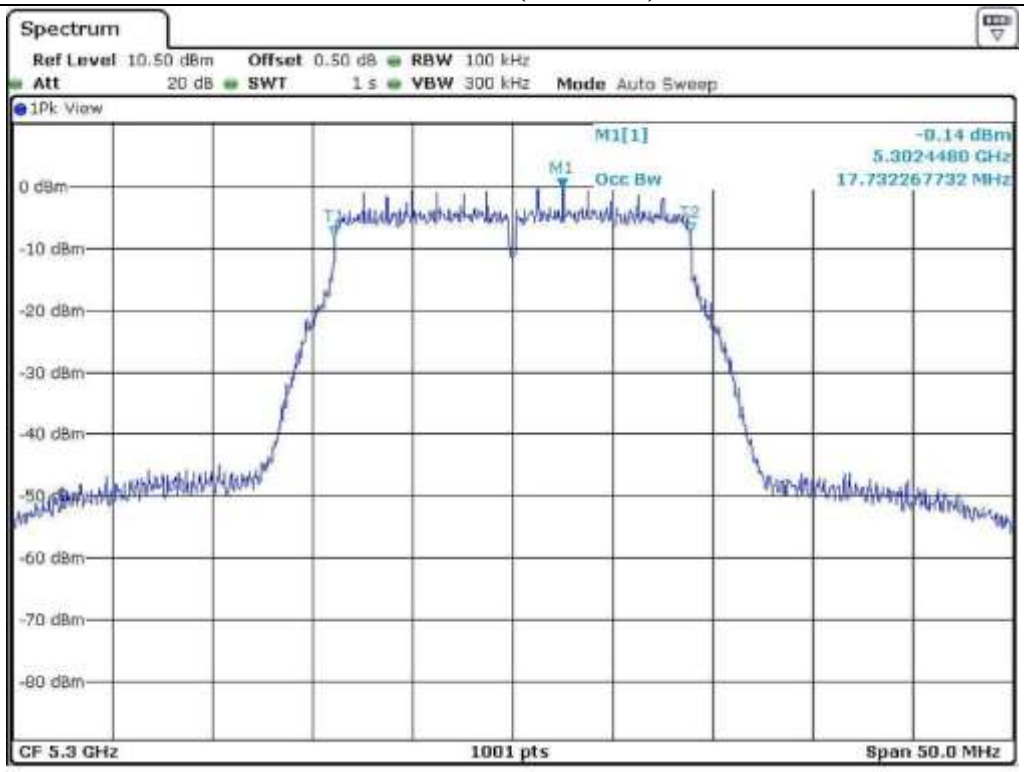


High Channel (5 240 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 260 MHz)



Middle Channel (5 300 MHz)

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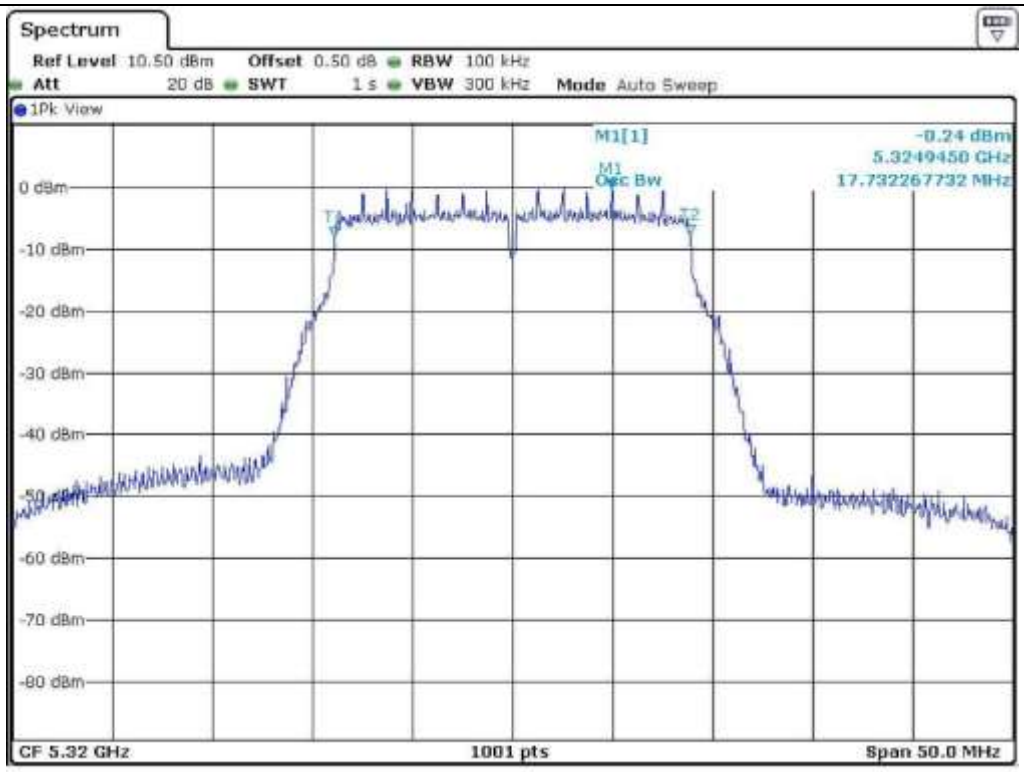
HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



High Channel (5 320 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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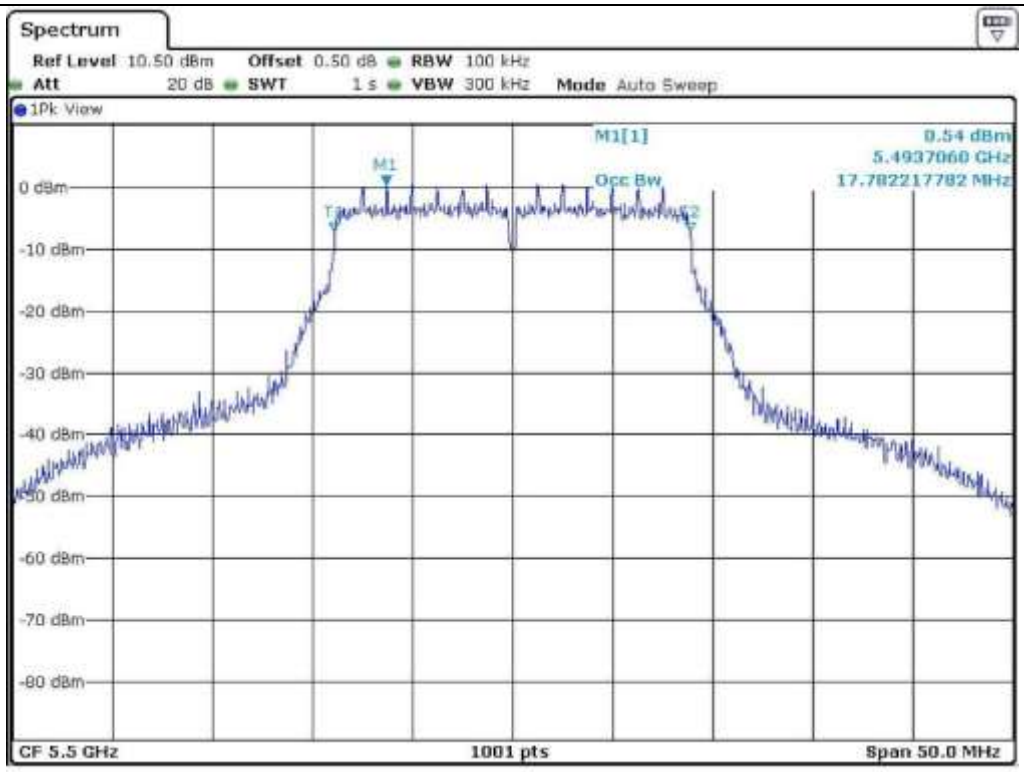
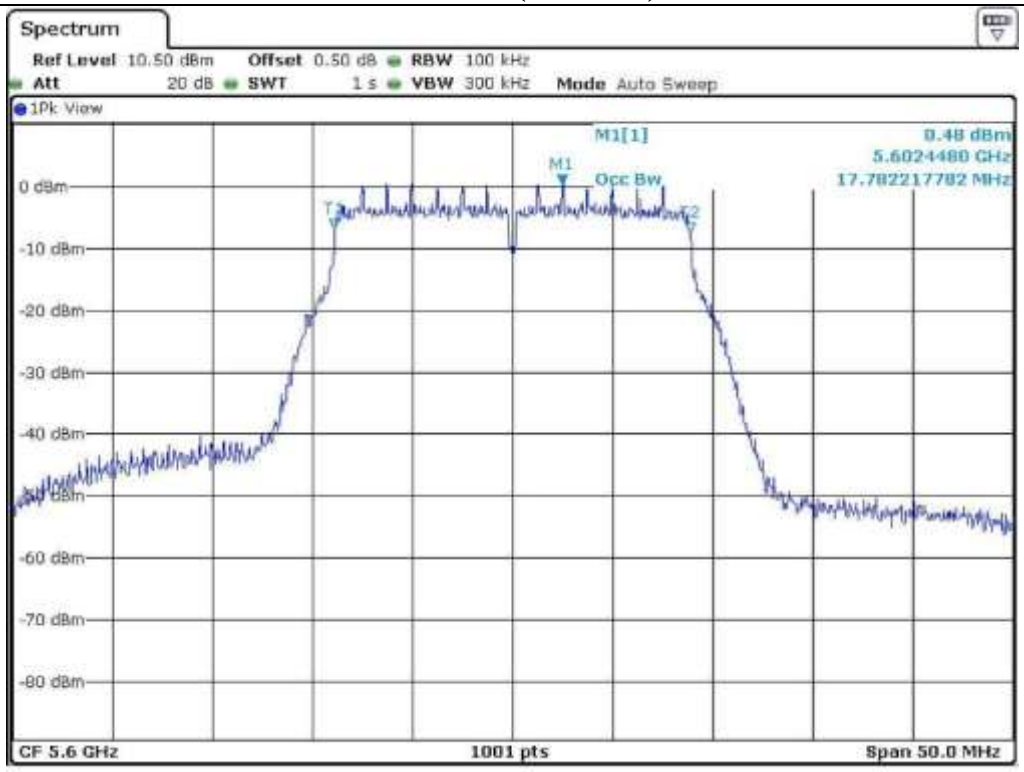


Low Channel (5 500 MHz)



Middle Channel (5 600 MHz)

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HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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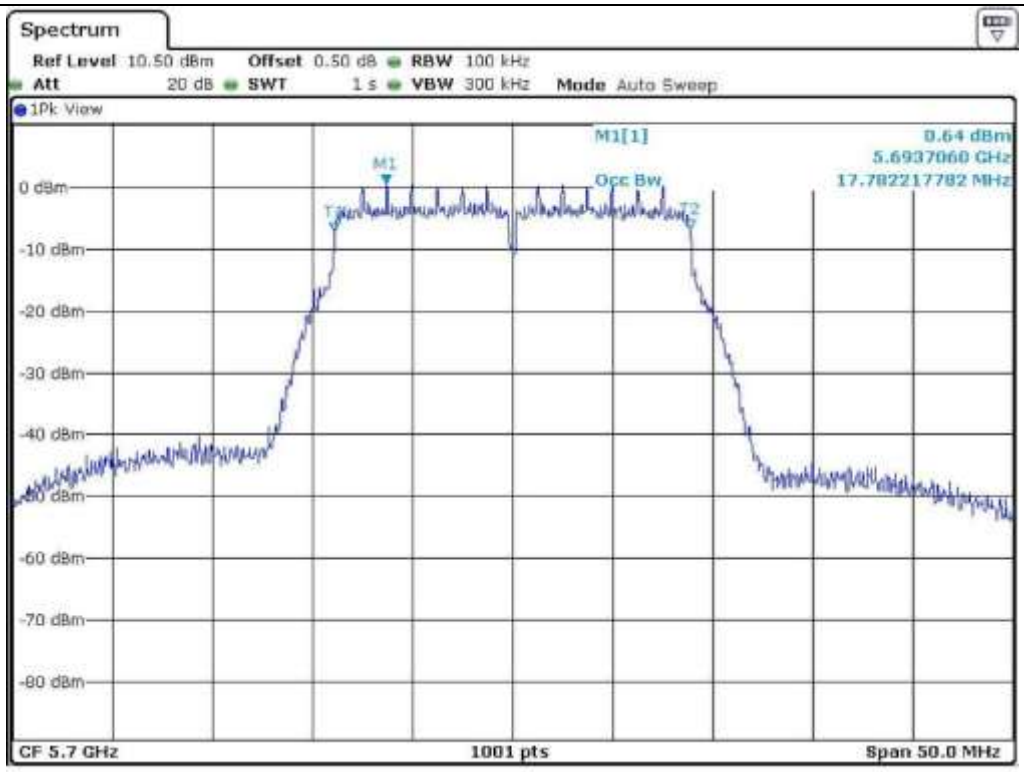
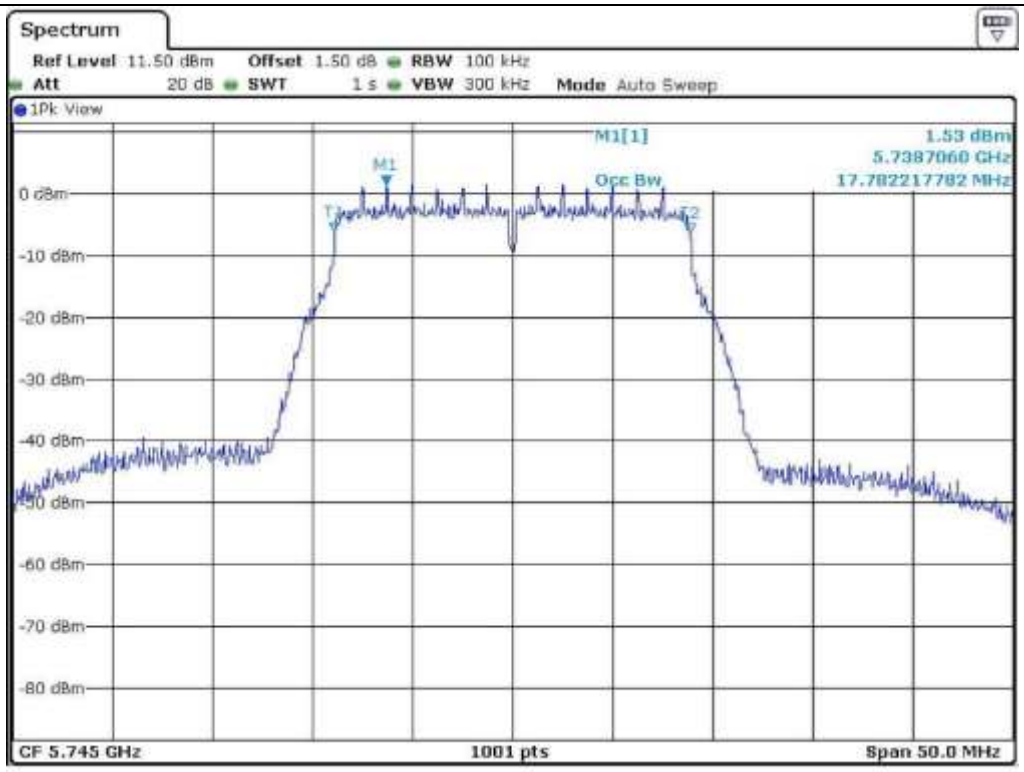
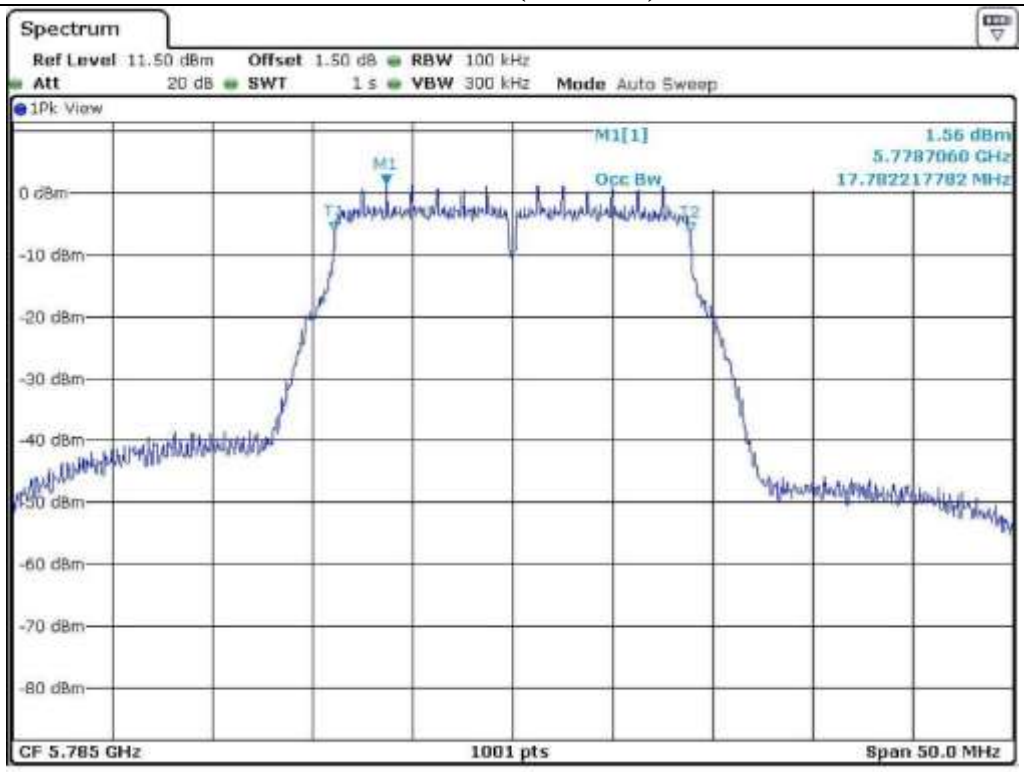


High Channel (5 700 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)

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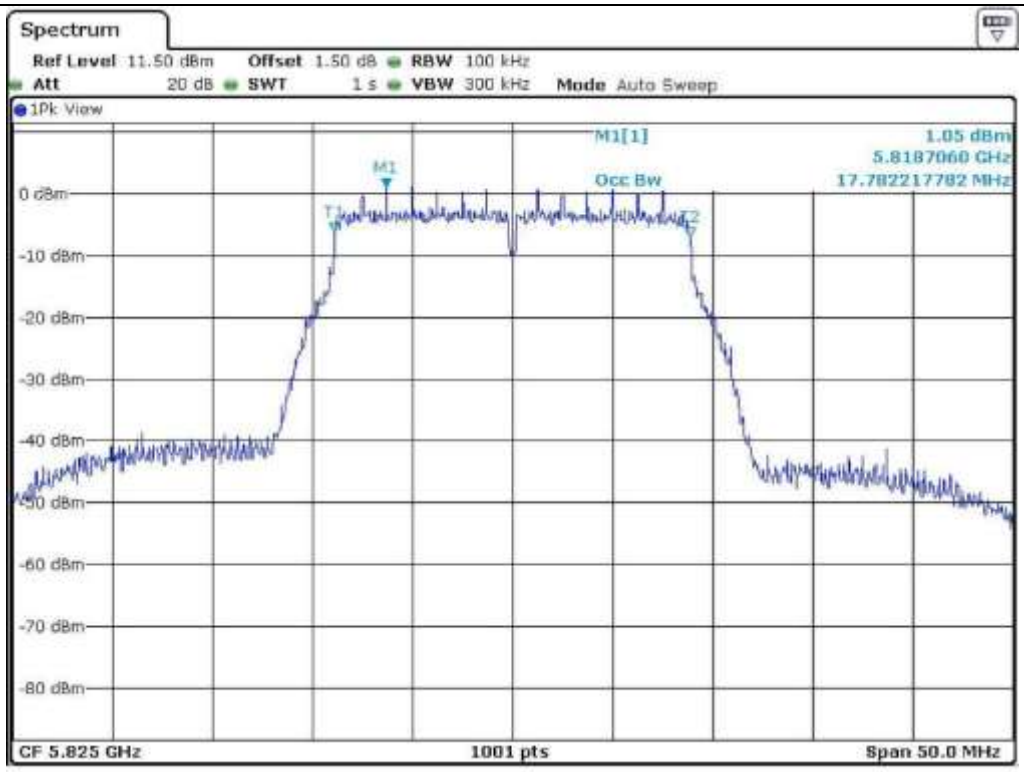
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



High Channel (5 825 MHz)

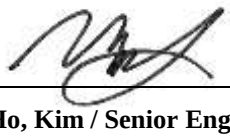
HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

7.5.2 Test data for Antenna 1

-. Test Date : June 19, 2015

-. Test Result : Pass

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5 150 ~ 5 250	Low	5 180	21.28	17.73
	Middle	5 200	21.28	17.73
	High	5 240	21.28	17.73
5 250 ~ 5 350	Low	5 260	21.28	17.73
	Middle	5 300	21.28	17.73
	High	5 320	21.28	17.73
5 470 ~ 5 725	Low	5 500	21.38	17.78
	Middle	5 600	21.38	17.78
	High	5 700	21.38	17.78
5 725 ~ 5 850	Low	5 745	21.28	17.78
	Middle	5 785	21.28	17.78
	High	5 825	21.28	17.78



Tested by: Tae-Ho, Kim / Senior Engineer

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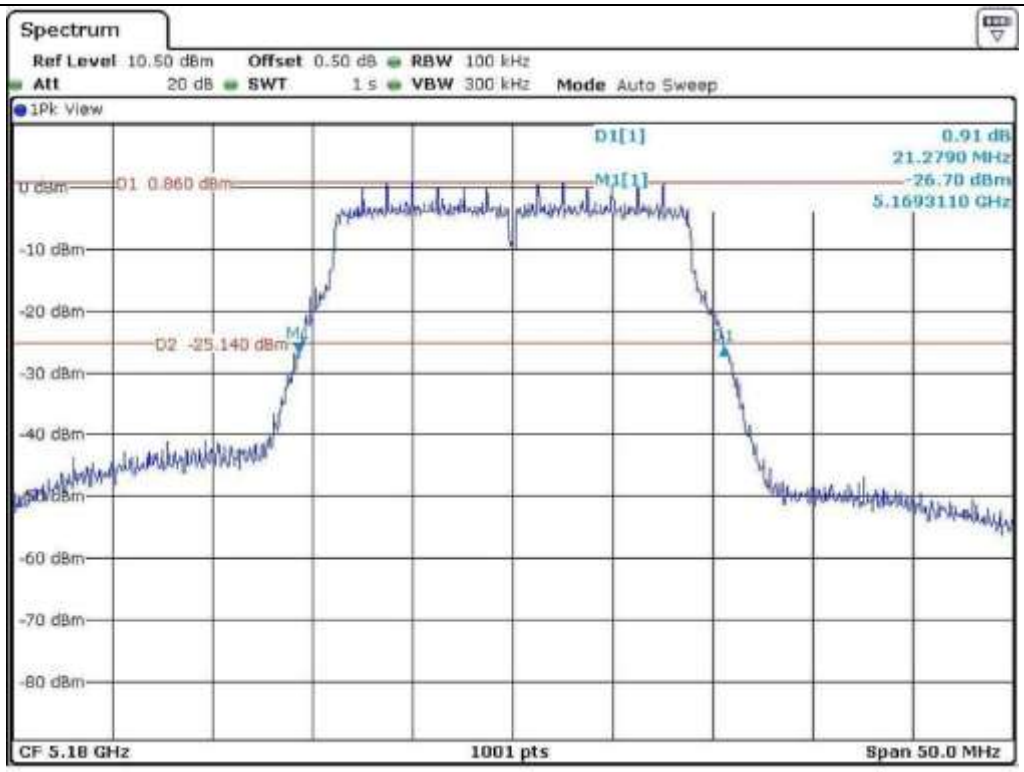
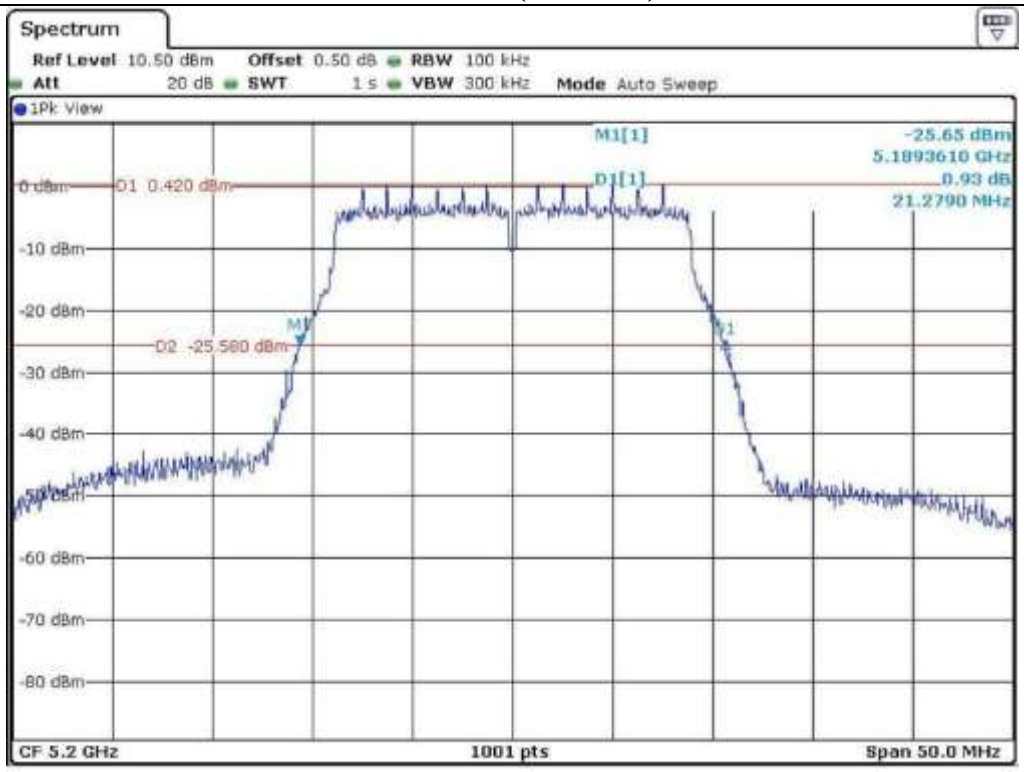


Low Channel (5 180 MHz)



Middle Channel (5 200 MHz)

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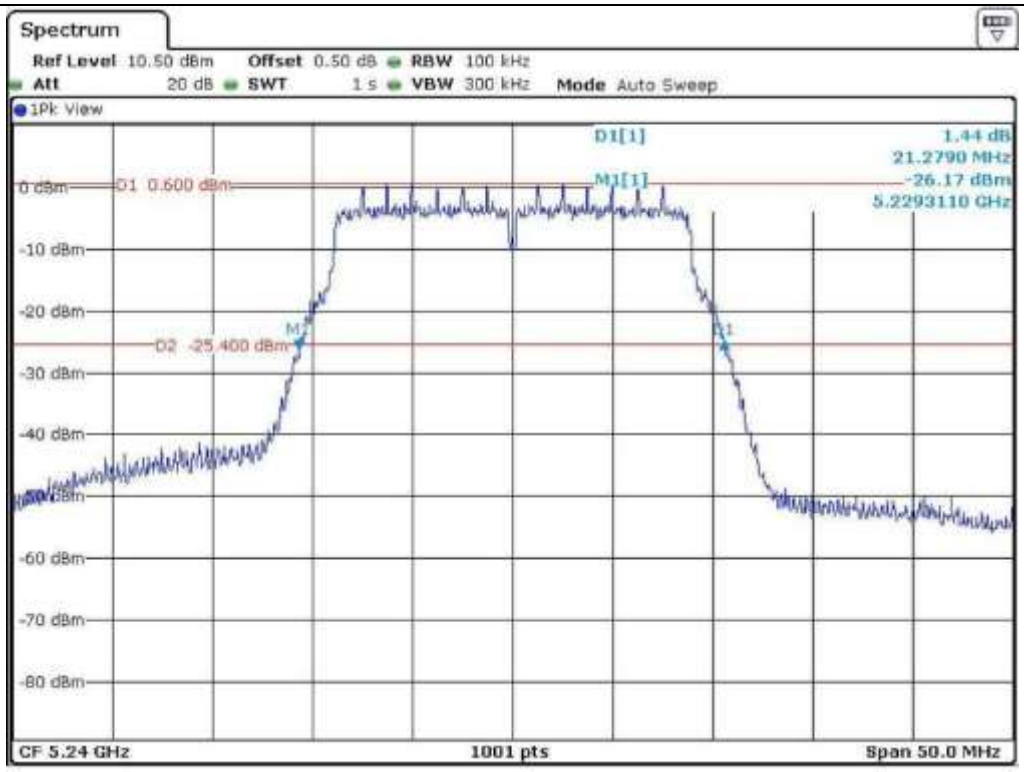

High Channel (5 240 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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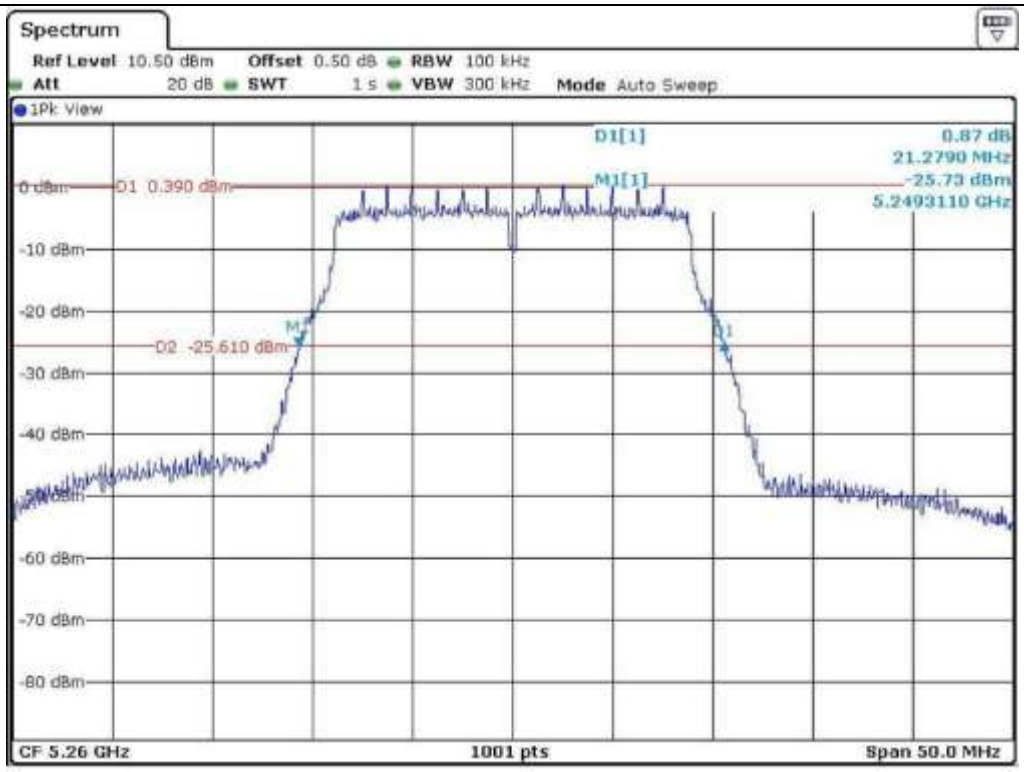
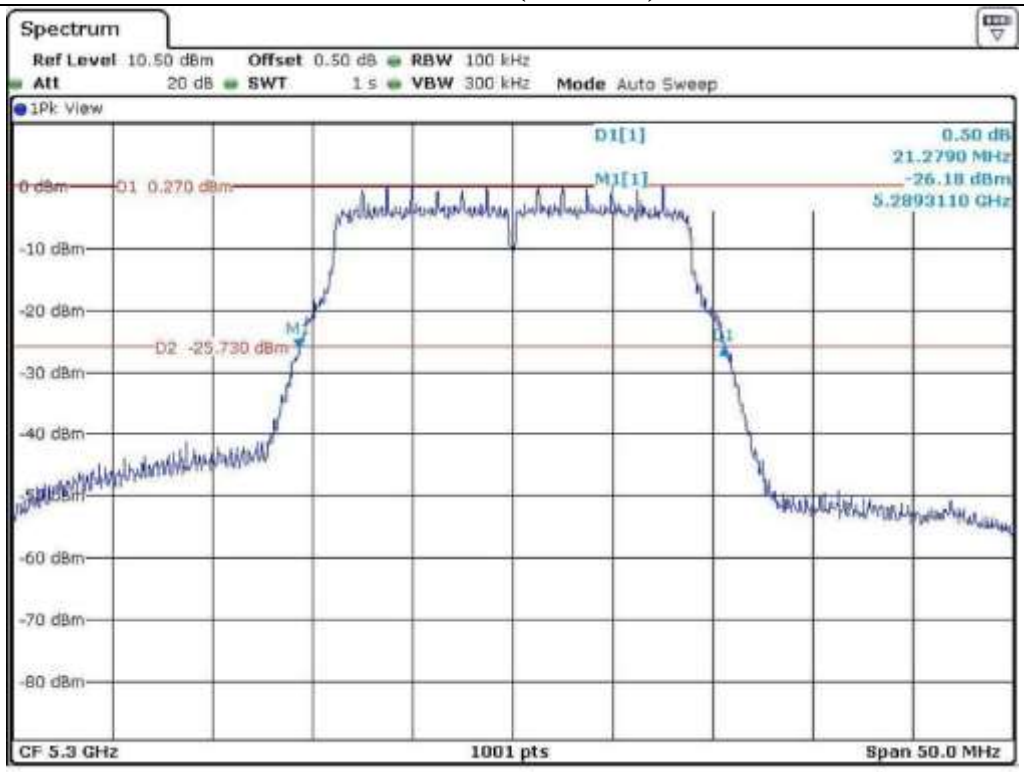


Low Channel (5 260 MHz)



Middle Channel (5 300 MHz)

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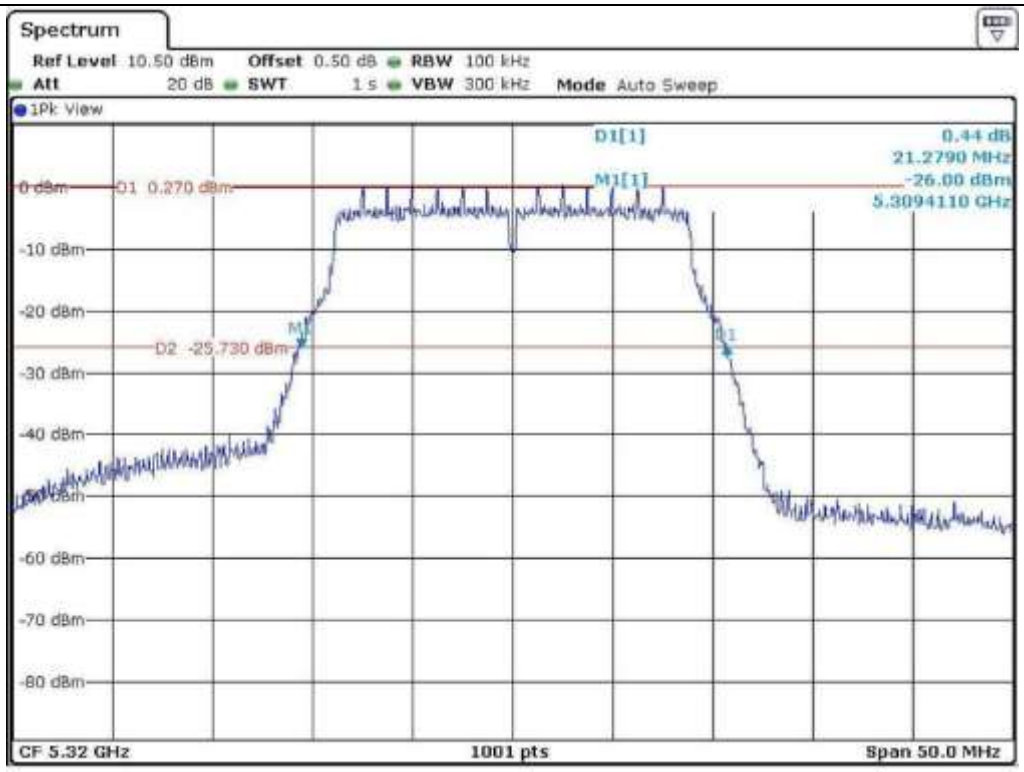

High Channel (5 320 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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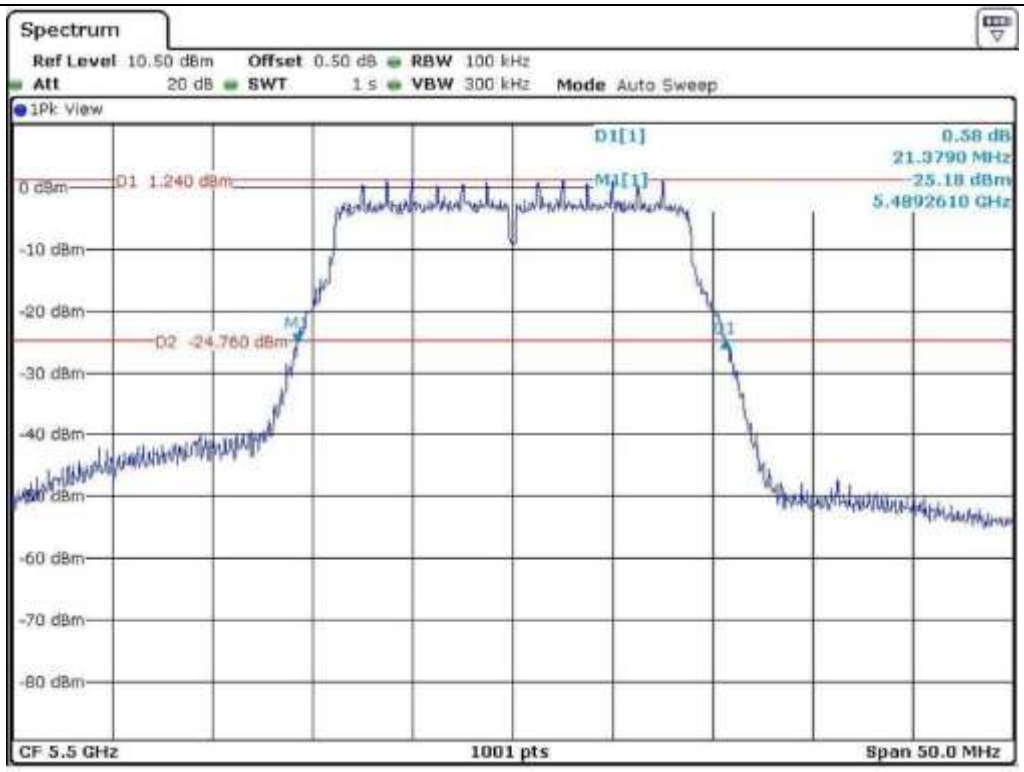
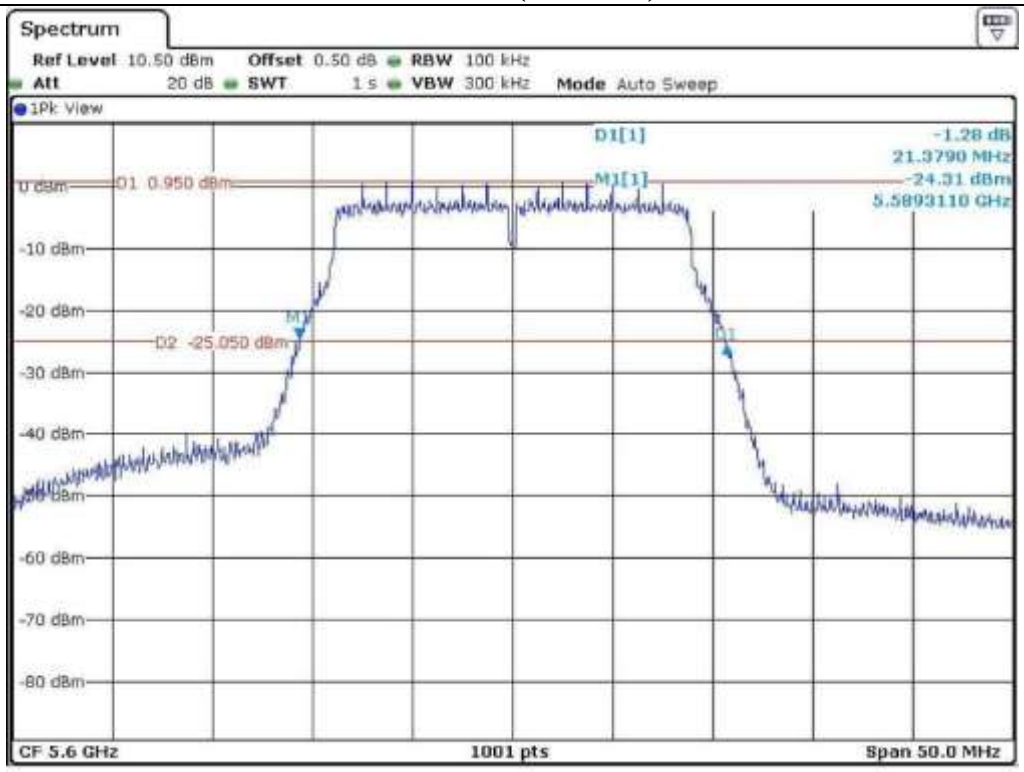


Low Channel (5 500 MHz)



Middle Channel (5 600 MHz)

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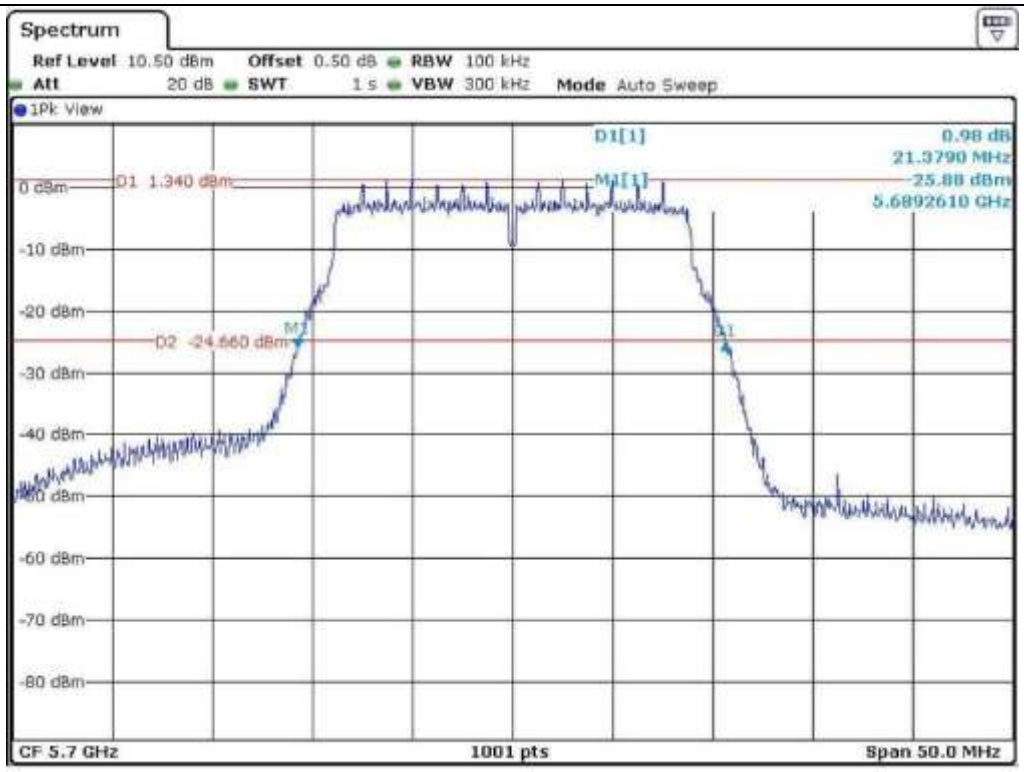

High Channel (5 700 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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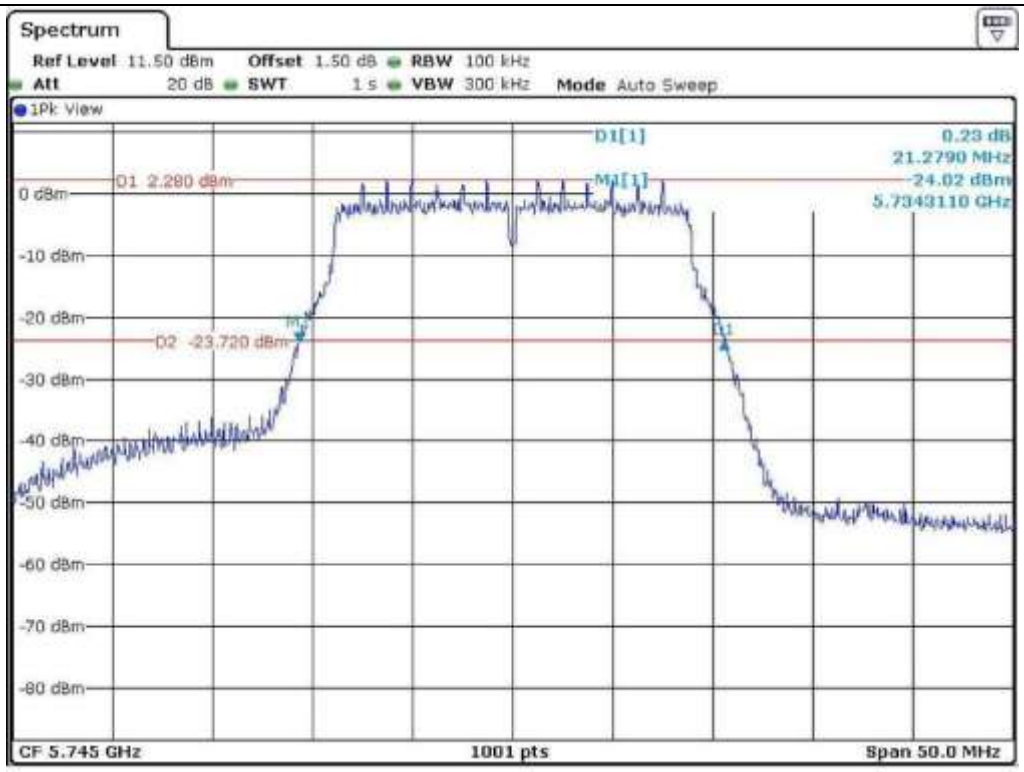
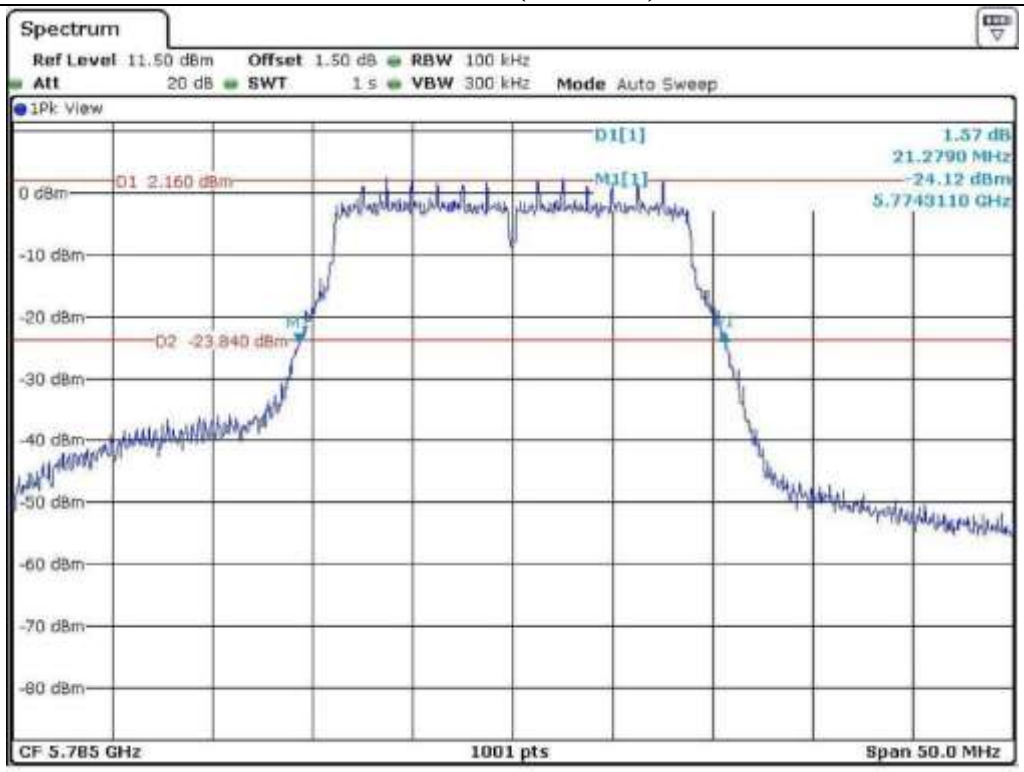


Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)

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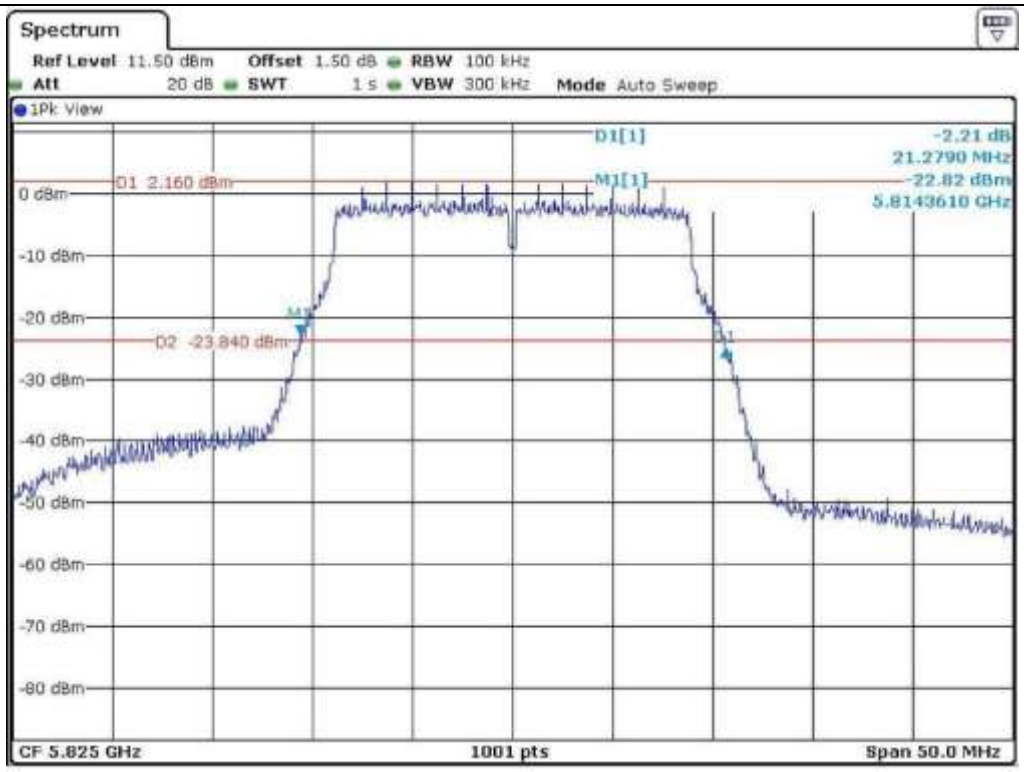
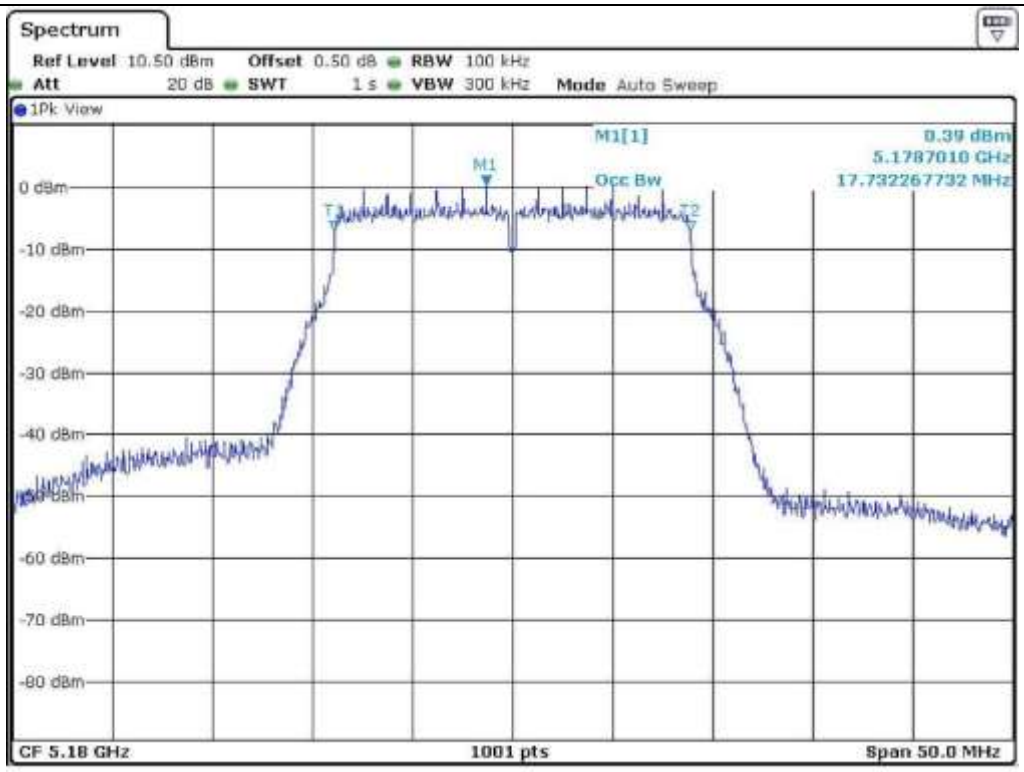
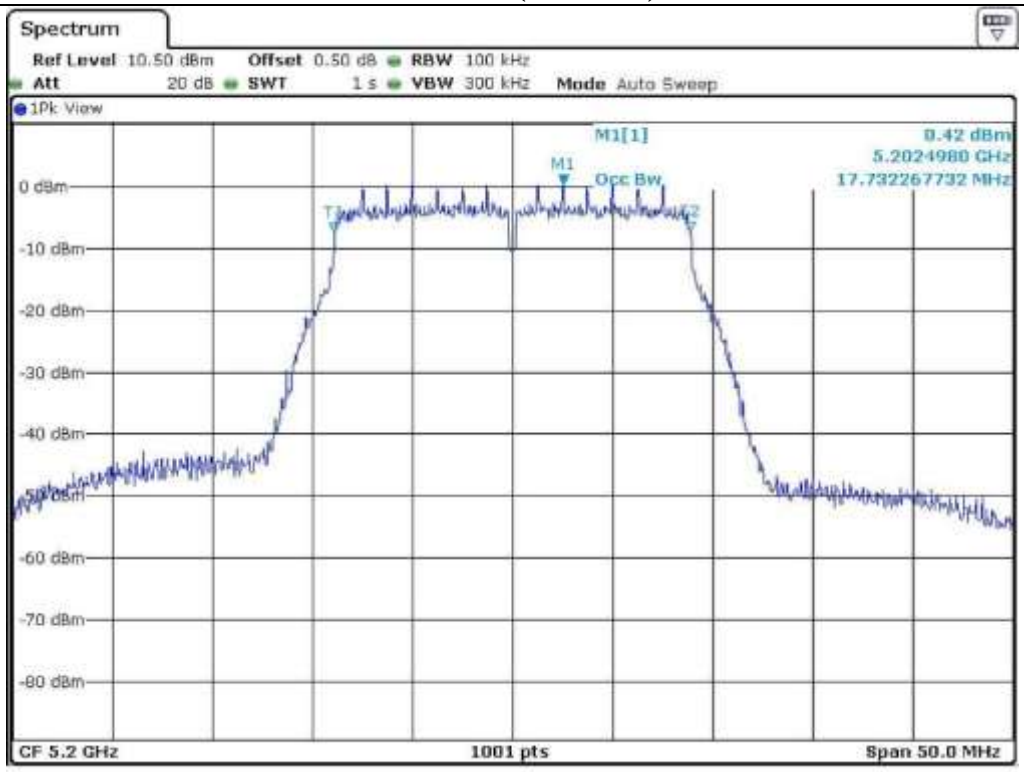


High Channel (5 825 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 180 MHz)



Middle Channel (5 200 MHz)

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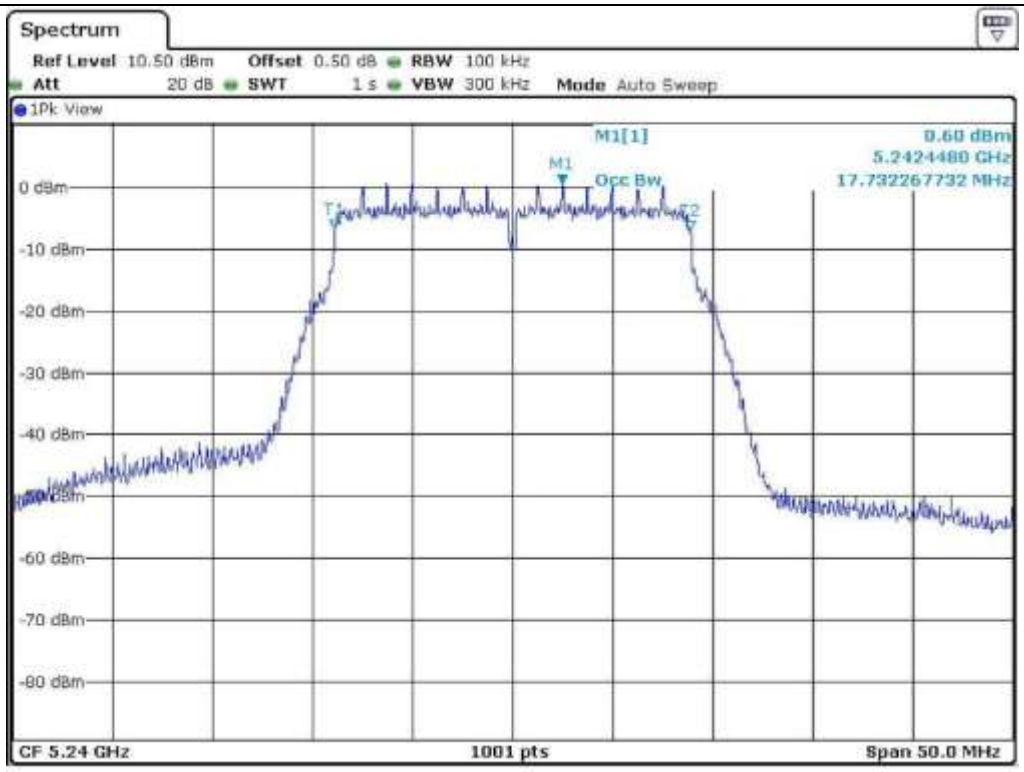
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



High Channel (5 240 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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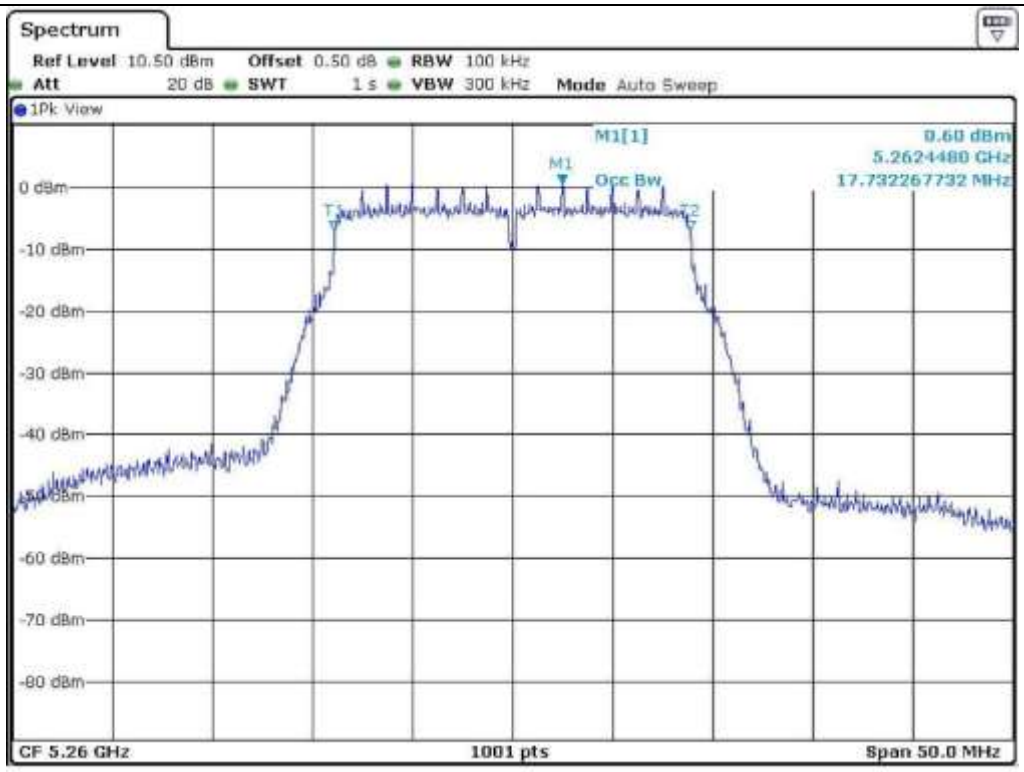
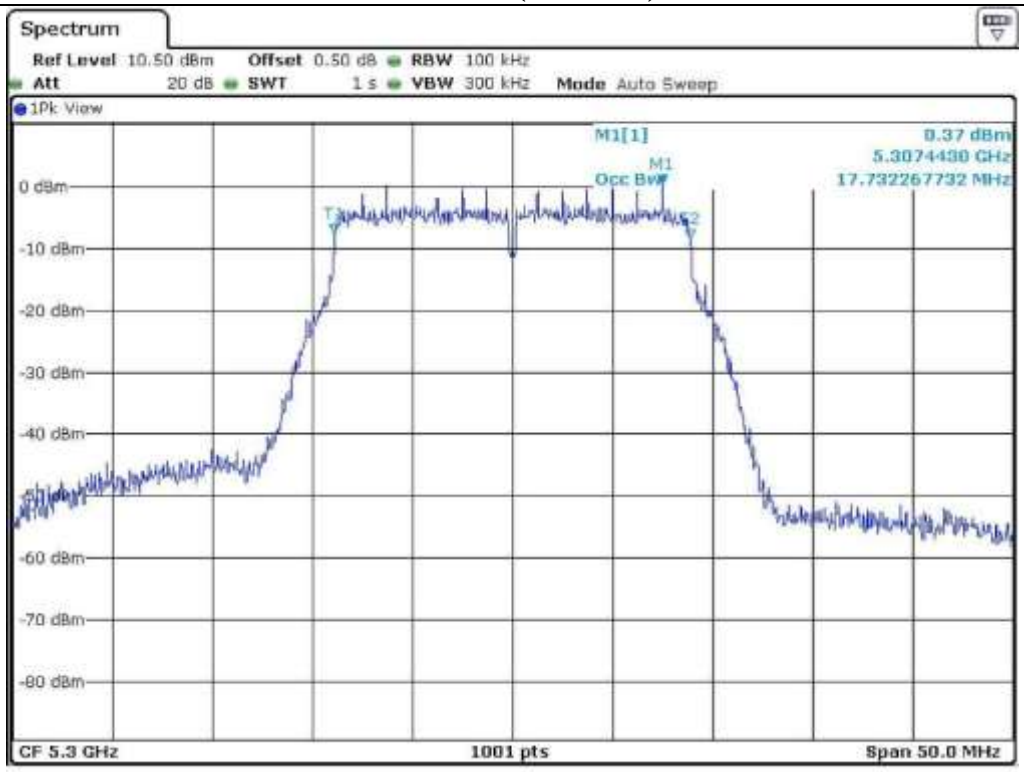


Low Channel (5 260 MHz)



Middle Channel (5 300 MHz)

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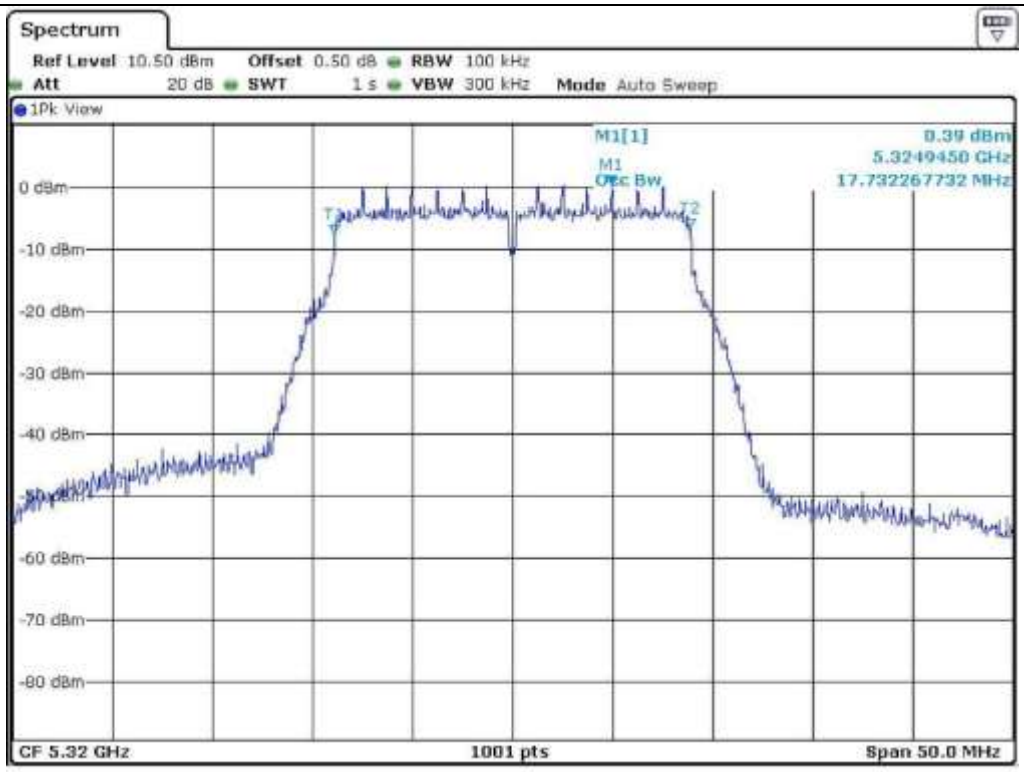

High Channel (5 320 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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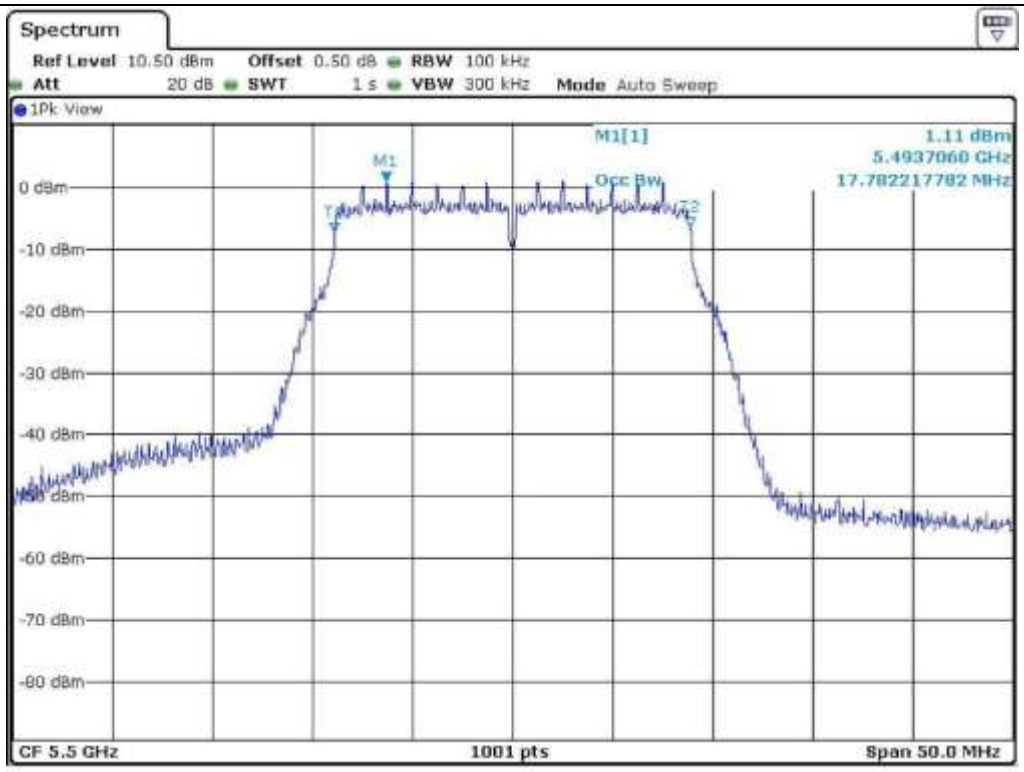
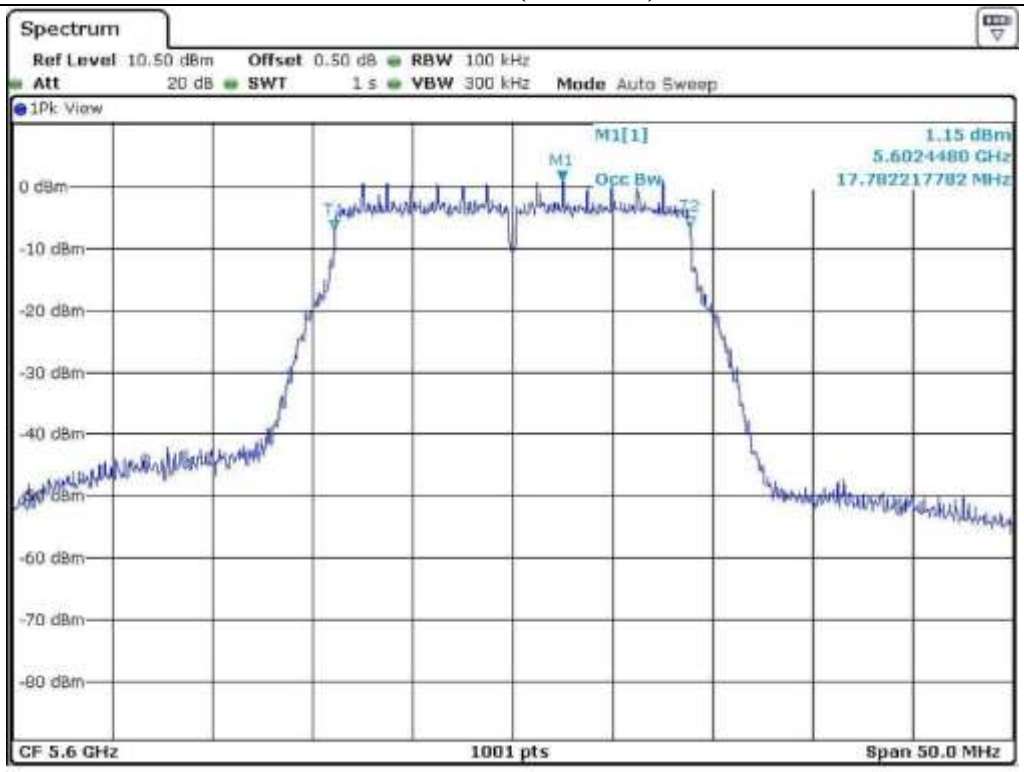


Low Channel (5 500 MHz)



Middle Channel (5 600 MHz)

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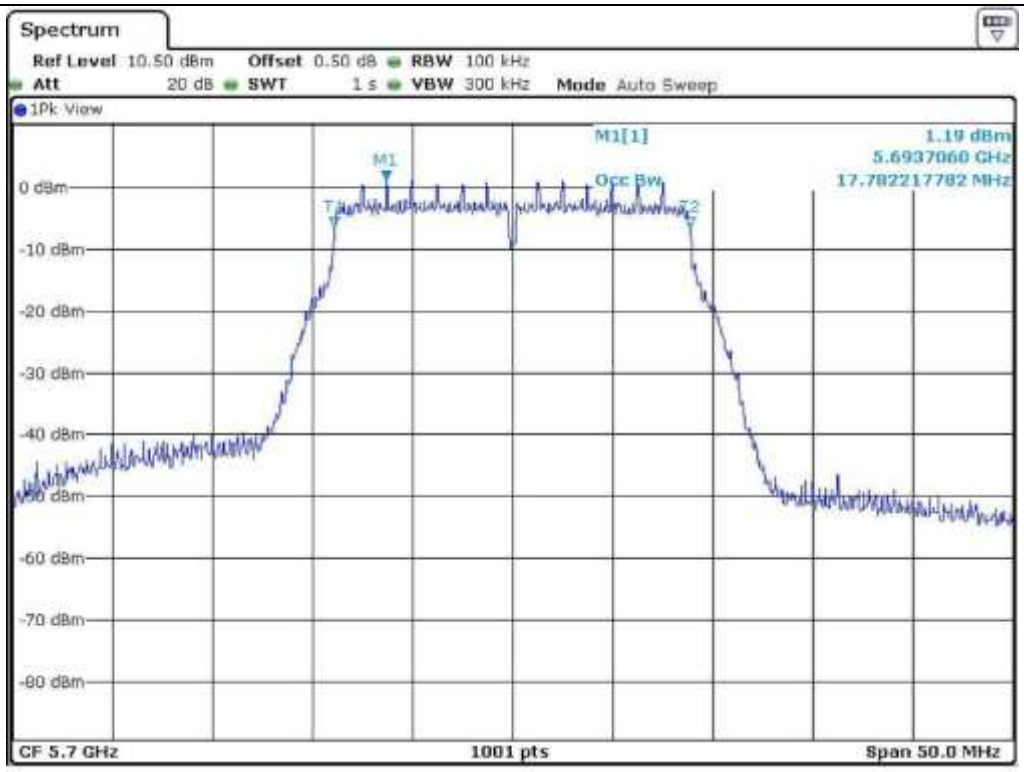

High Channel (5 700 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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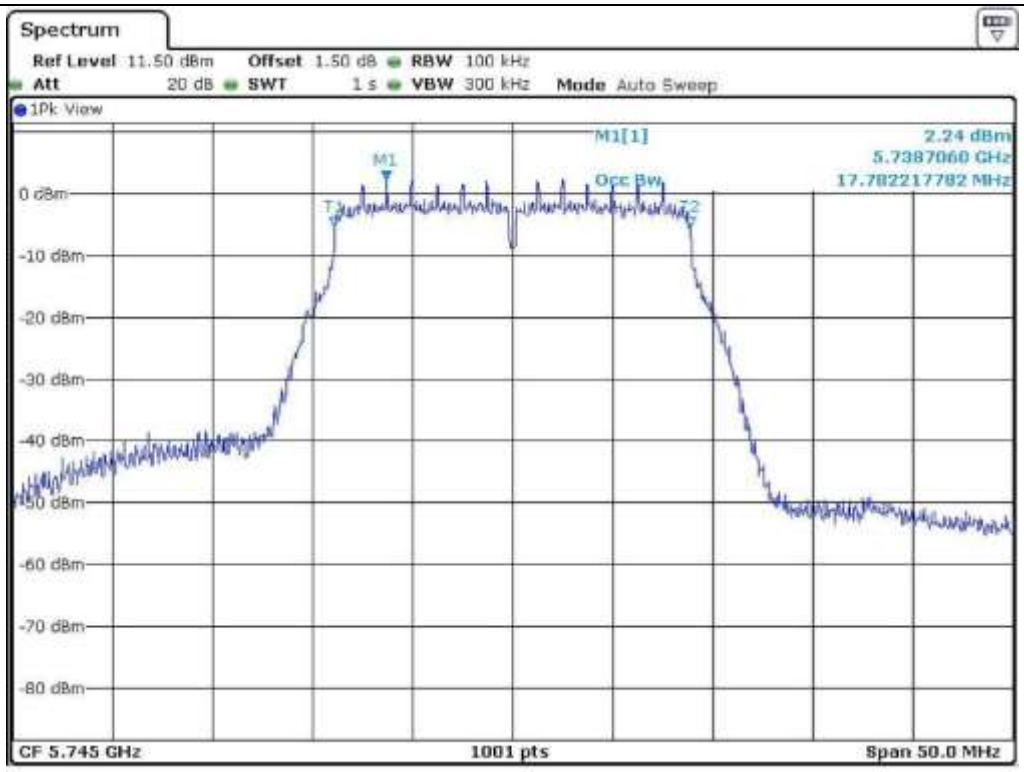
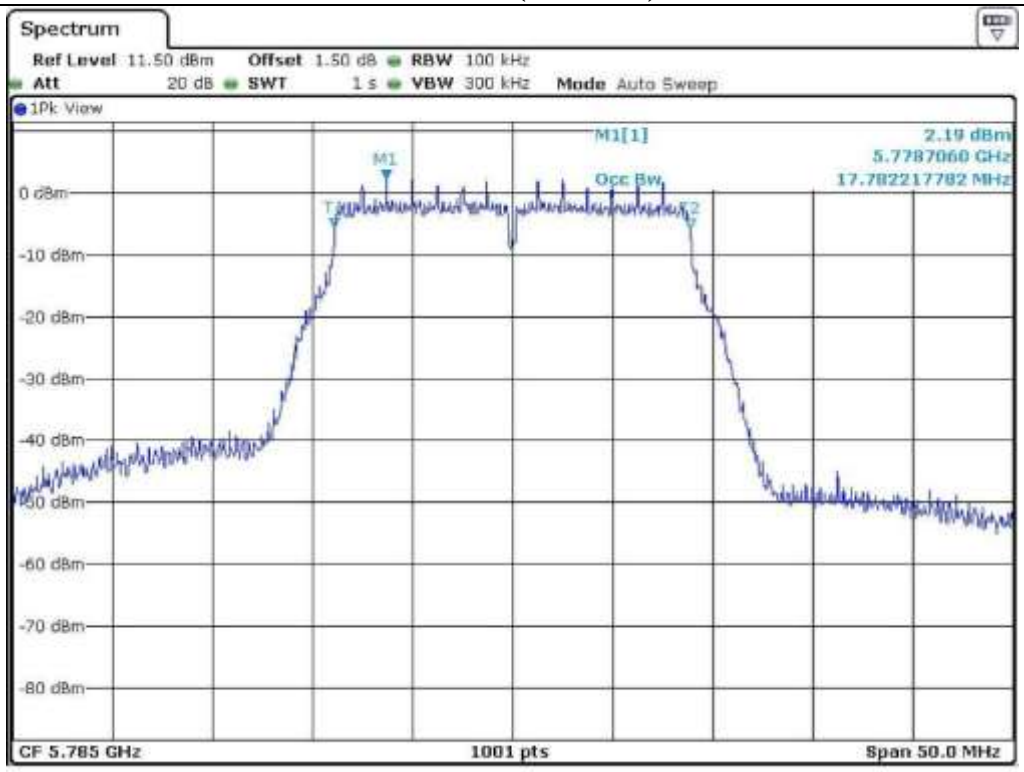


Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)

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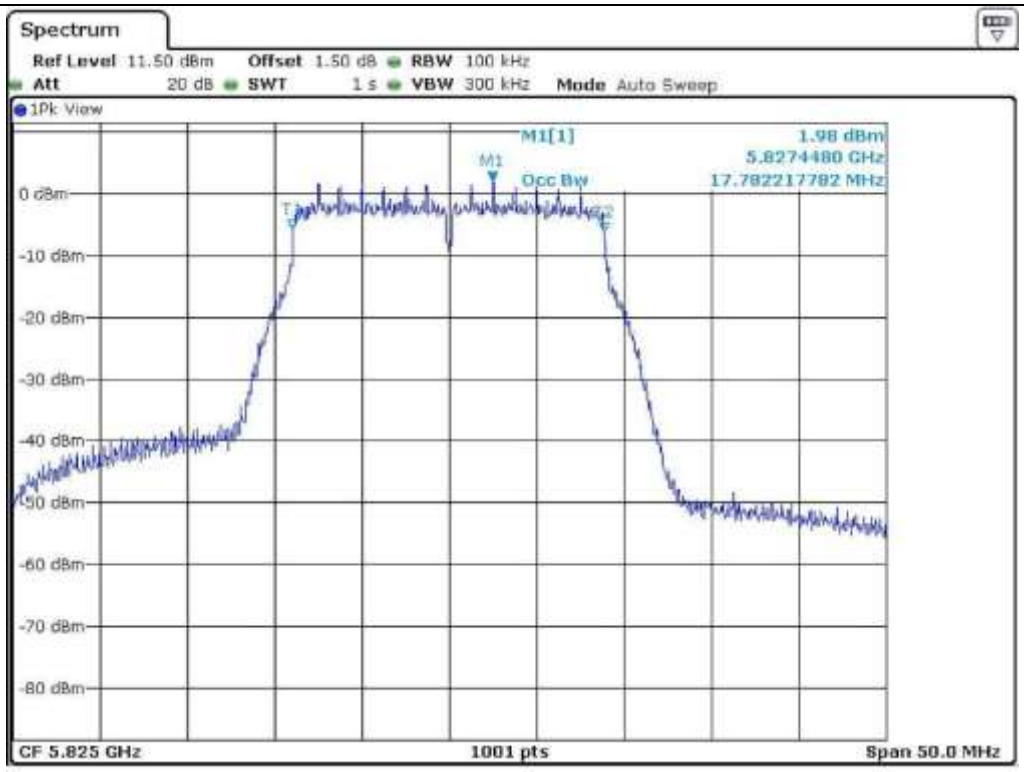

High Channel (5 825 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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7.6 Test data for 802.11n_HT40 RLAN Mode

7.6.1 Test data for Antenna 0

-. Test Date : June 20, 2015

-. Test Result : Pass

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5 150 ~ 5 250	Low	5 190	38.96	36.16
	High	5 230	38.96	36.16
5 250 ~ 5 350	Low	5 270	38.86	36.16
	High	5 310	38.86	36.16
5 470 ~ 5 725	Low	5 510	38.86	36.26
	Middle	5 590	38.86	36.26
	High	5 670	38.86	36.26
5 725 ~ 5 850	Low	5 755	38.92	36.16
	High	5 795	38.92	36.16

Tested by: Tae-Ho, Kim / Senior Engineer

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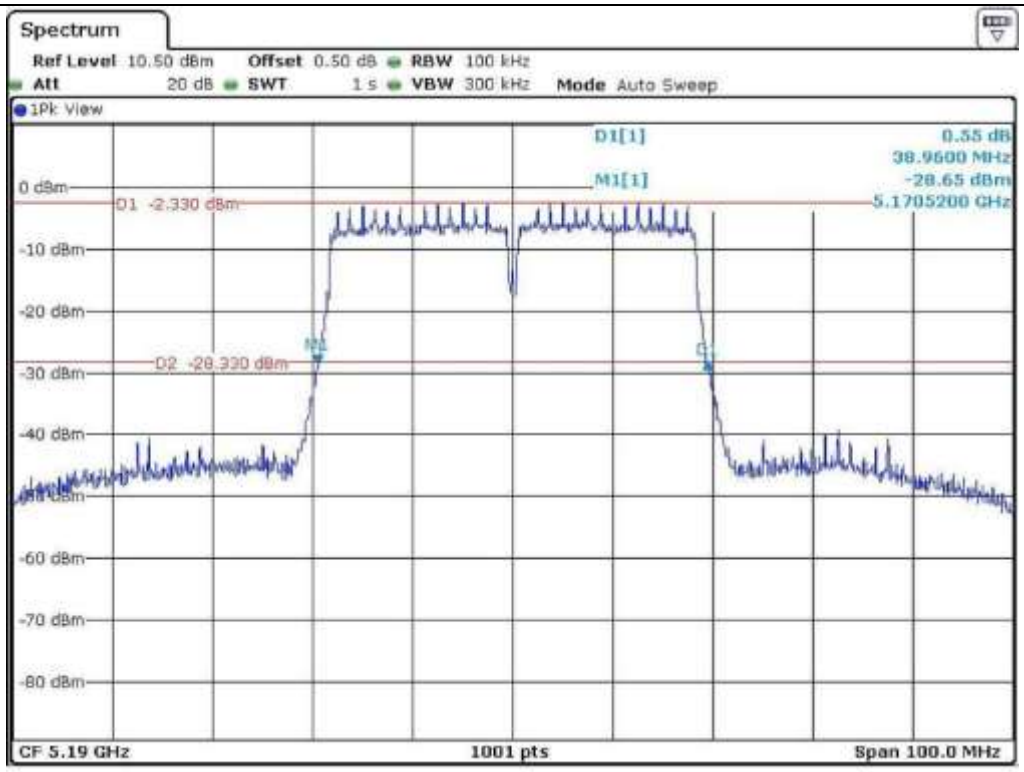
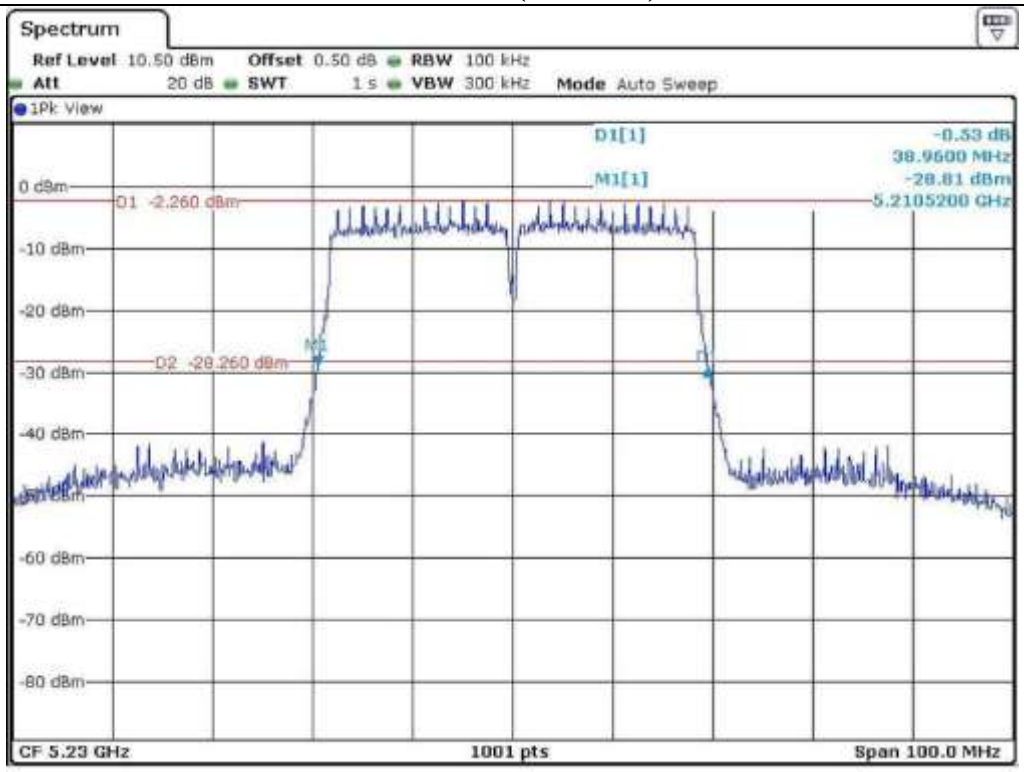


Low Channel (5 190 MHz)



High Channel (5 230 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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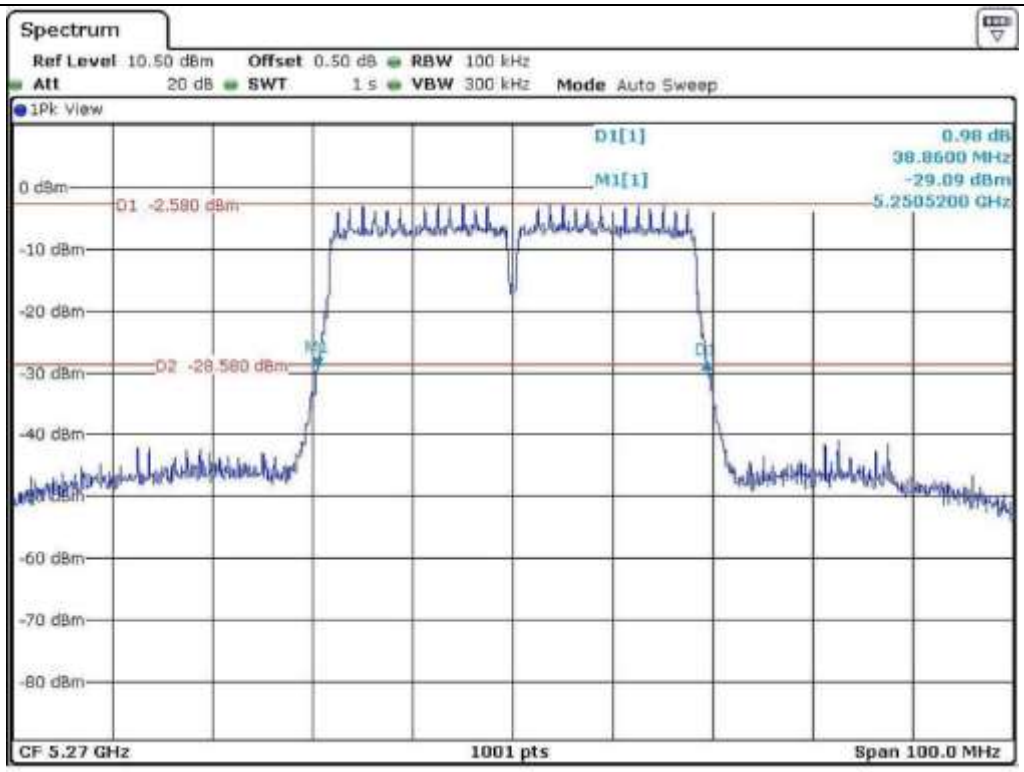
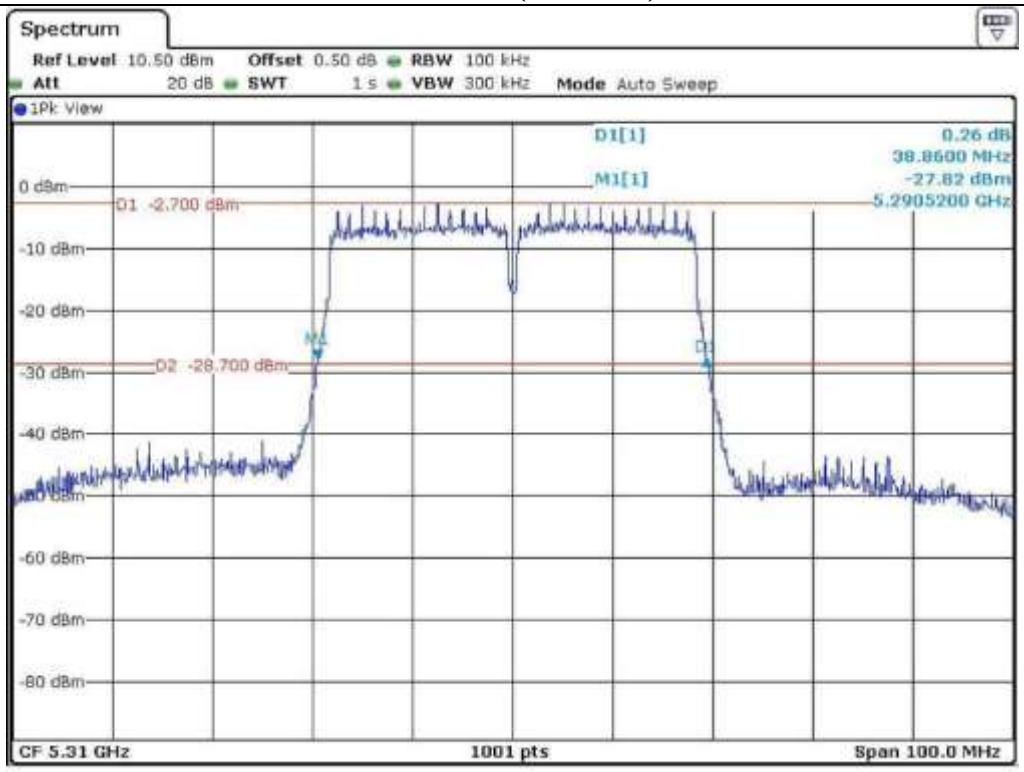
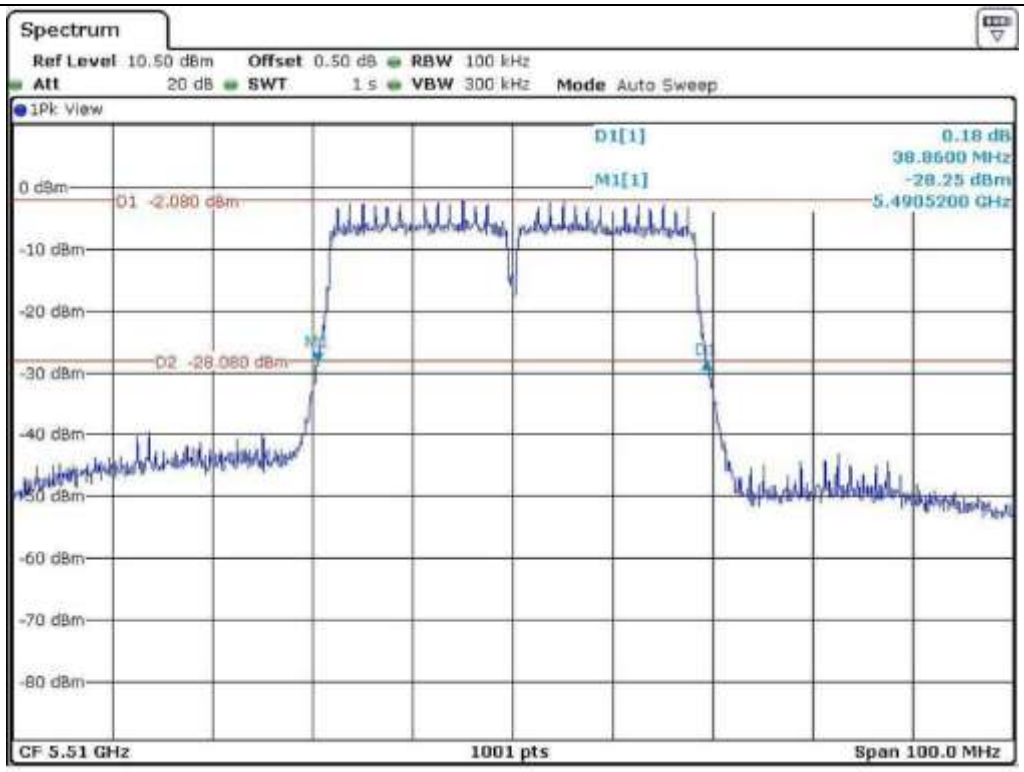


Low Channel (5 270 MHz)

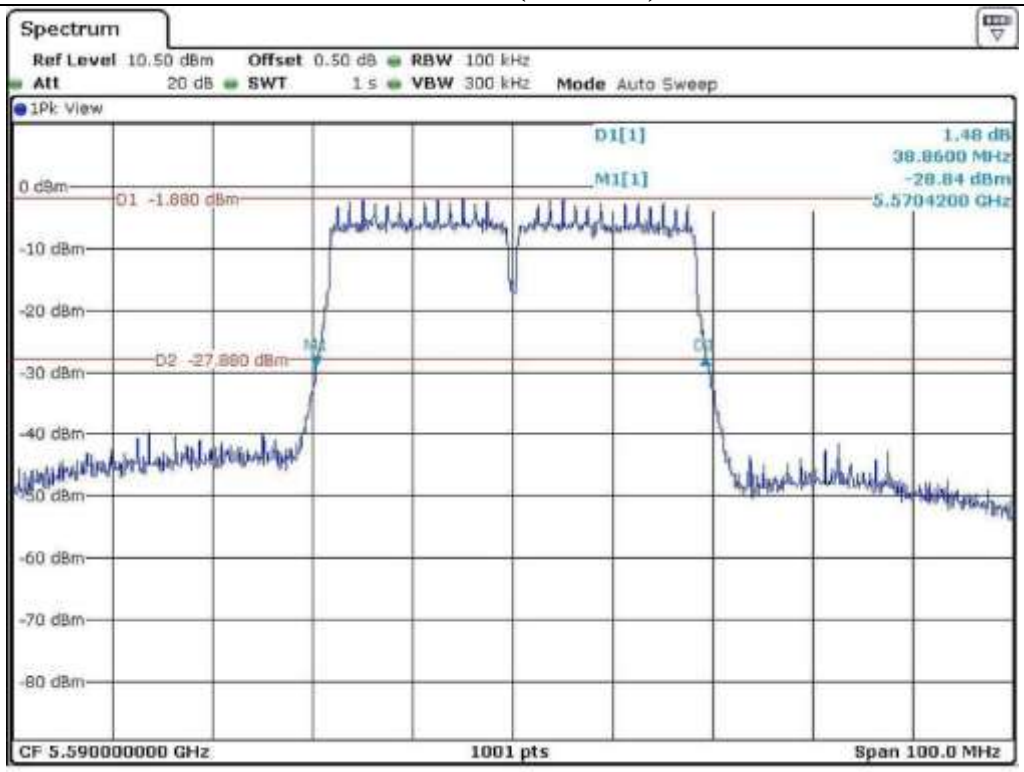


High Channel (5 310 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 510 MHz)



Middle Channel (5 590 MHz)

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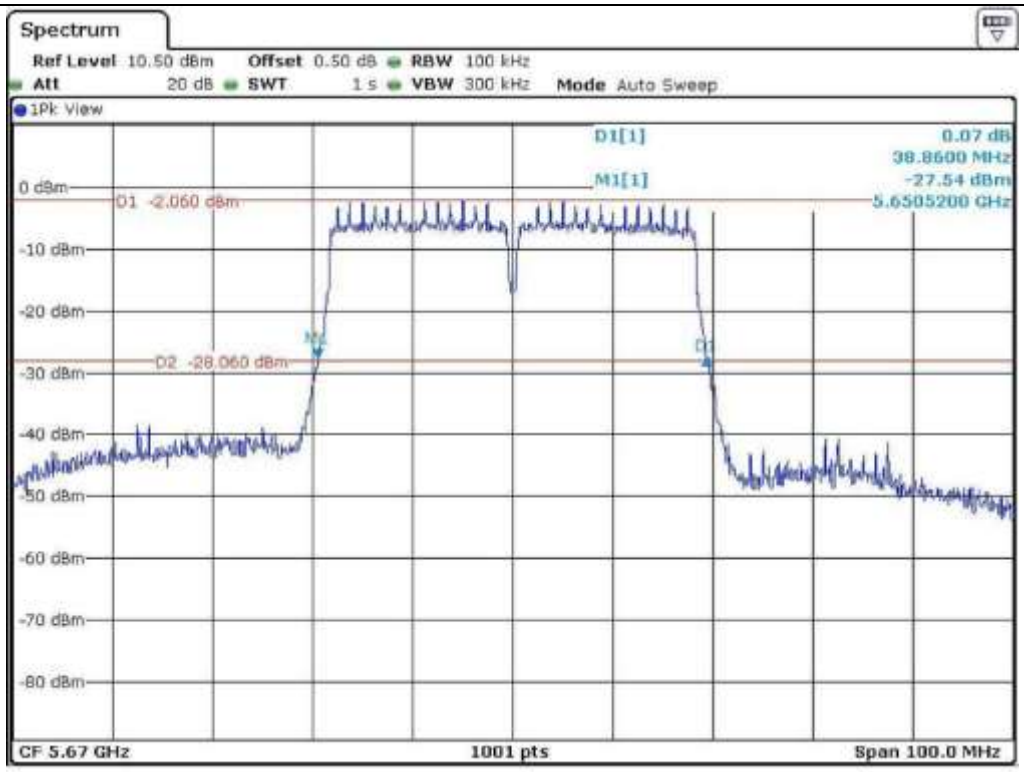
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



High Channel (5 670 MHz)

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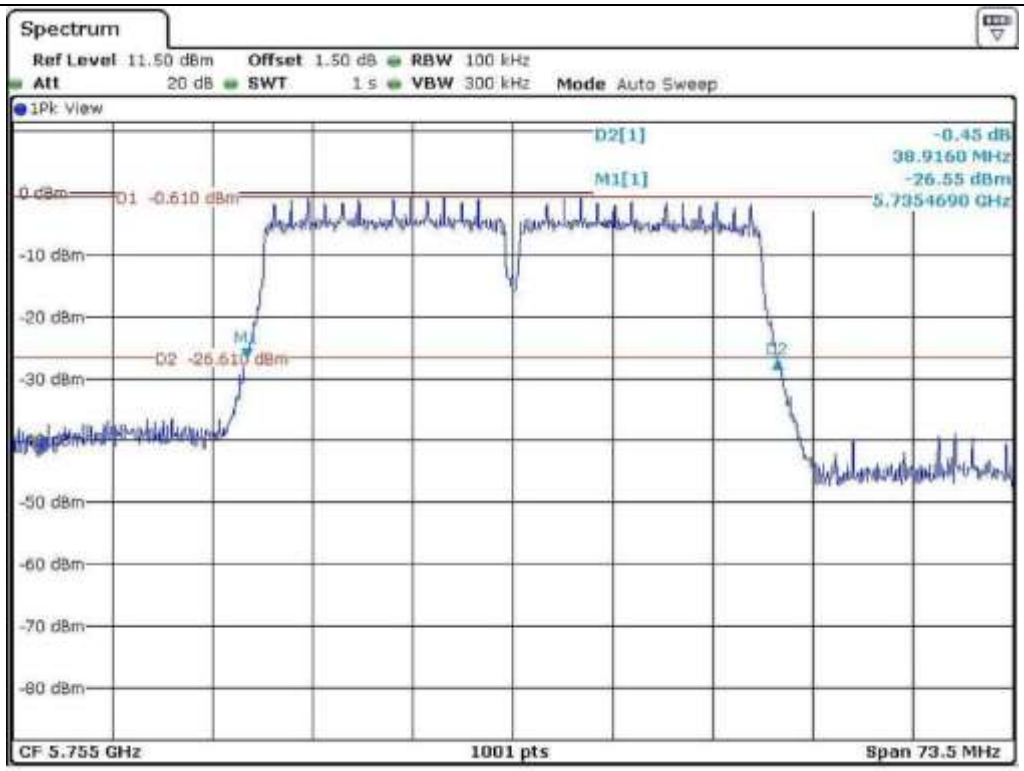
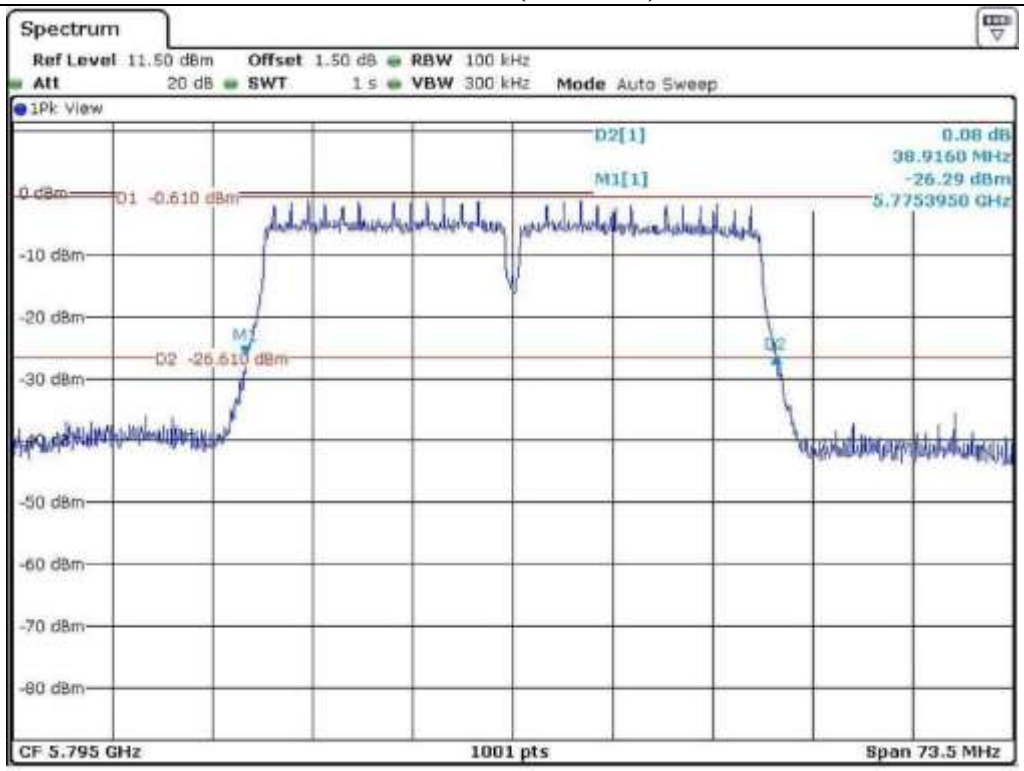
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 755 MHz)



High Channel (5 795 MHz)

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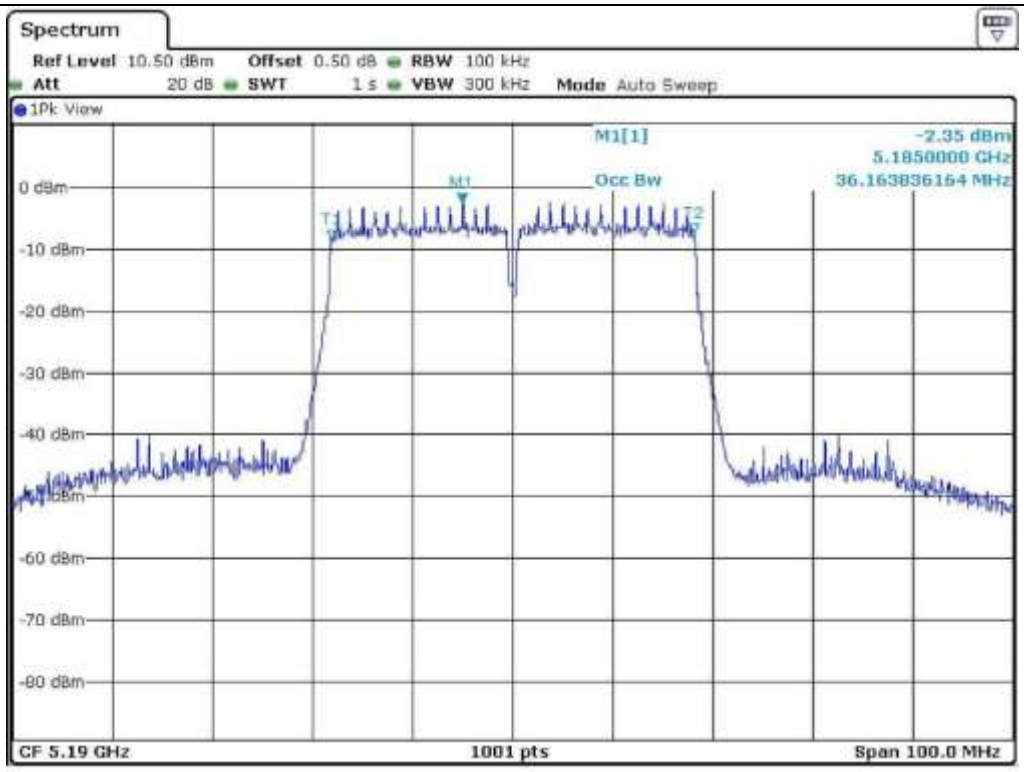
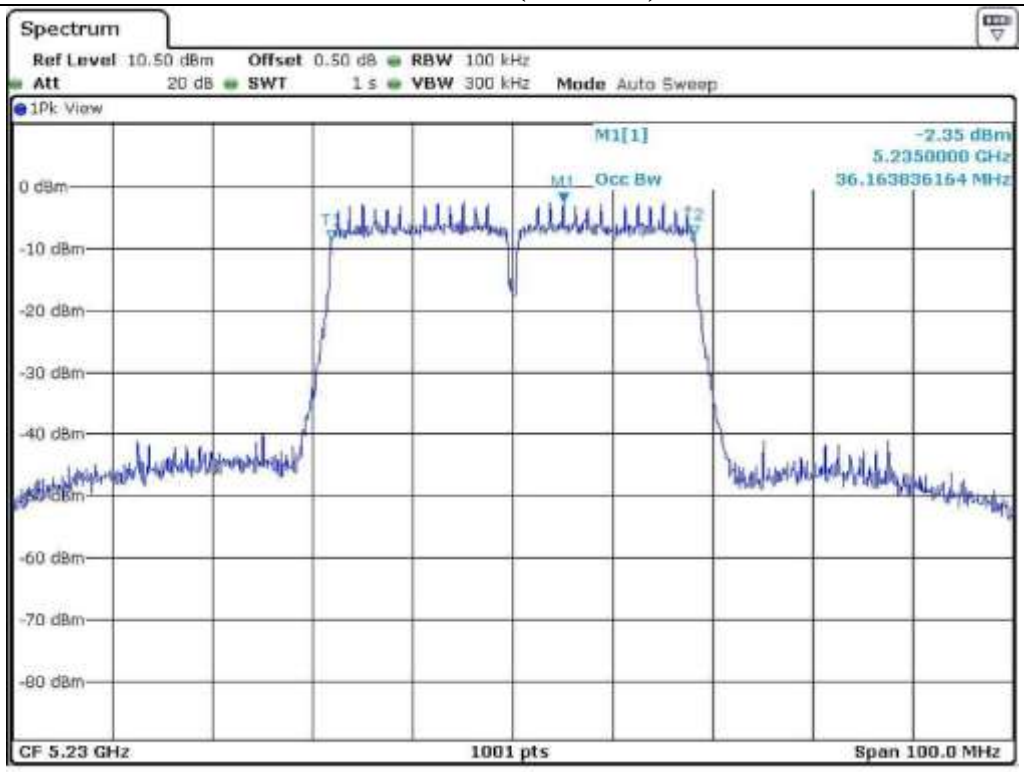


Low Channel (5 190 MHz)



High Channel (5 230 MHz)

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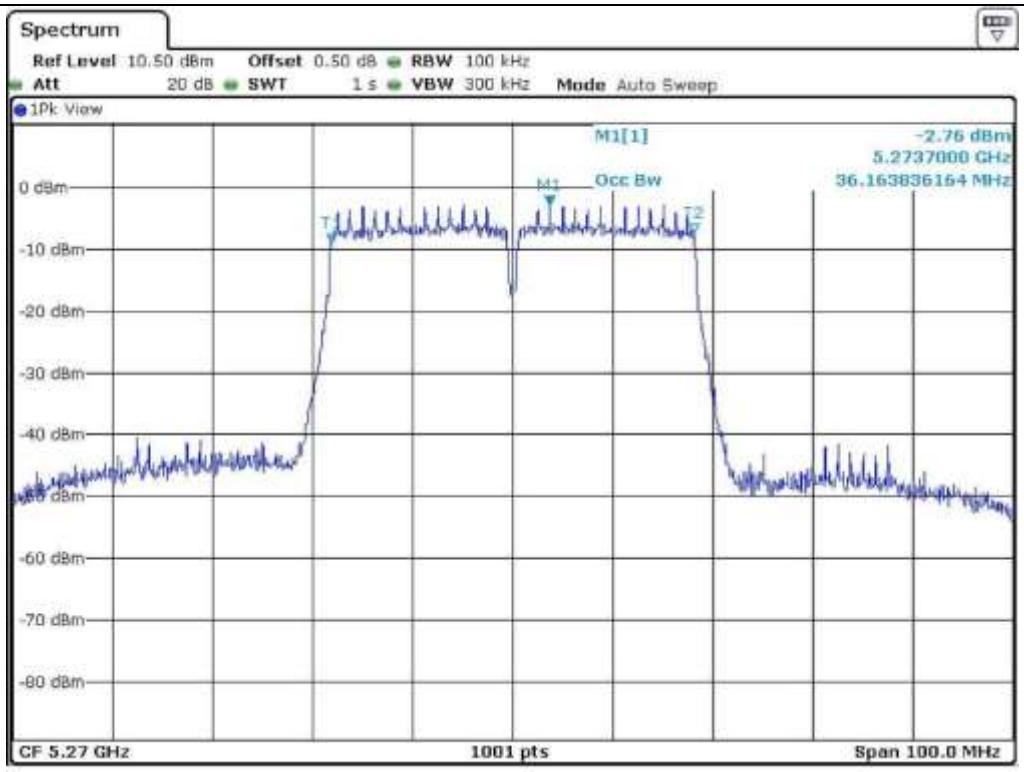
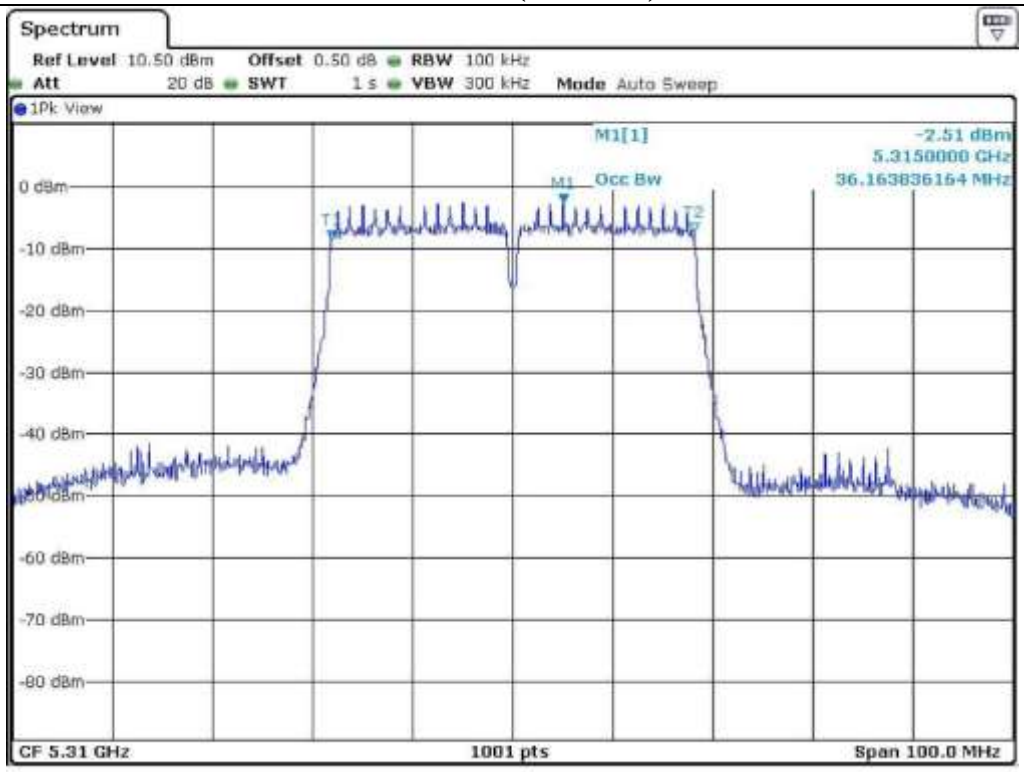


Low Channel (5 270 MHz)



High Channel (5 310 MHz)

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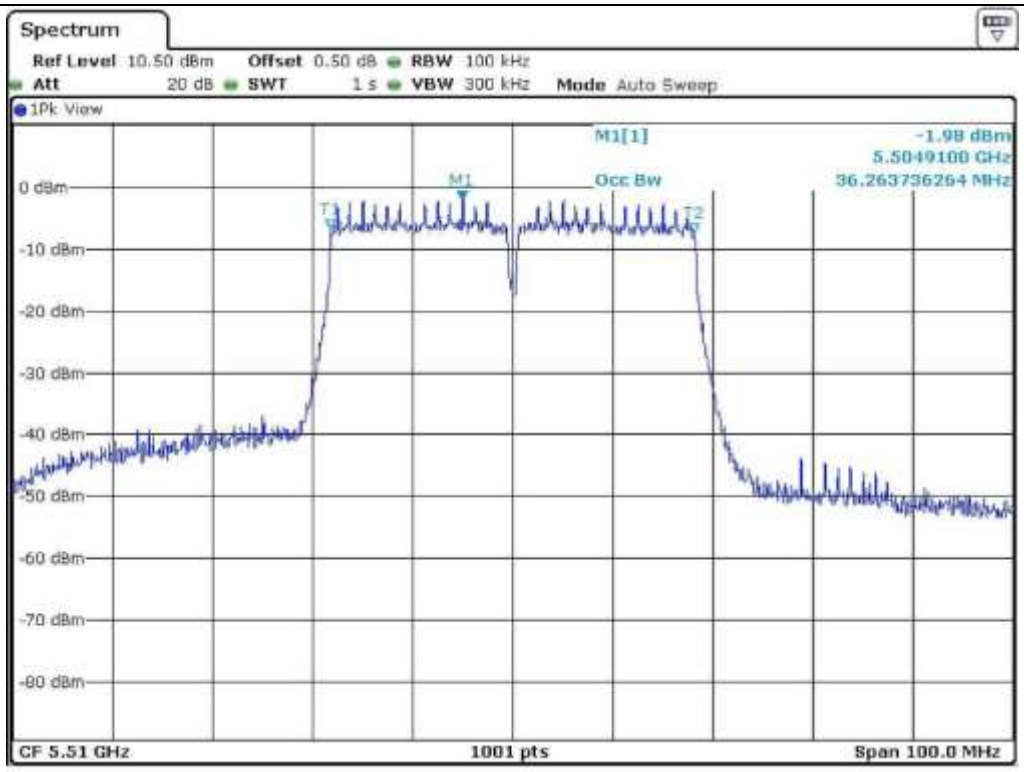
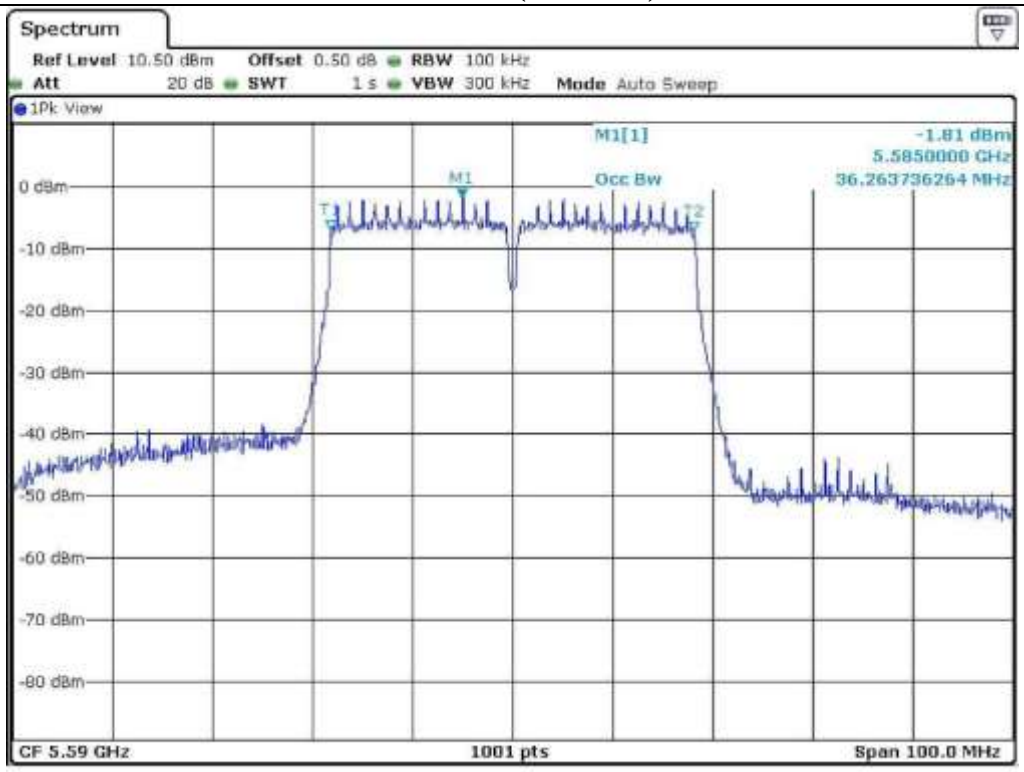
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 510 MHz)



Middle Channel (5 590 MHz)

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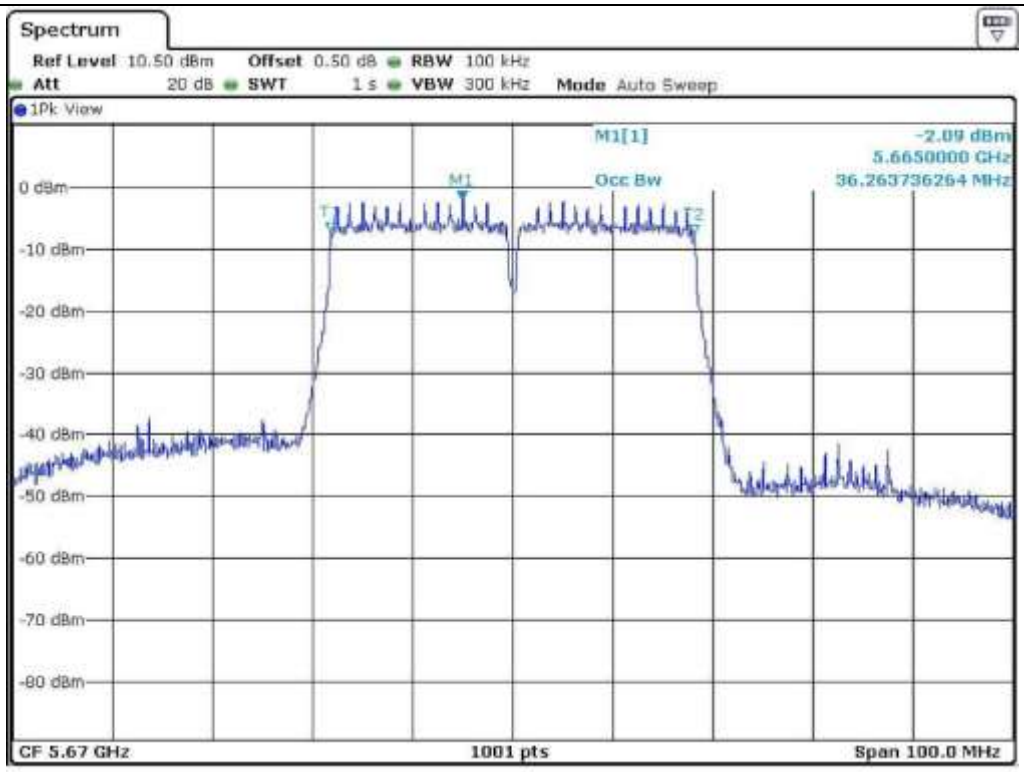
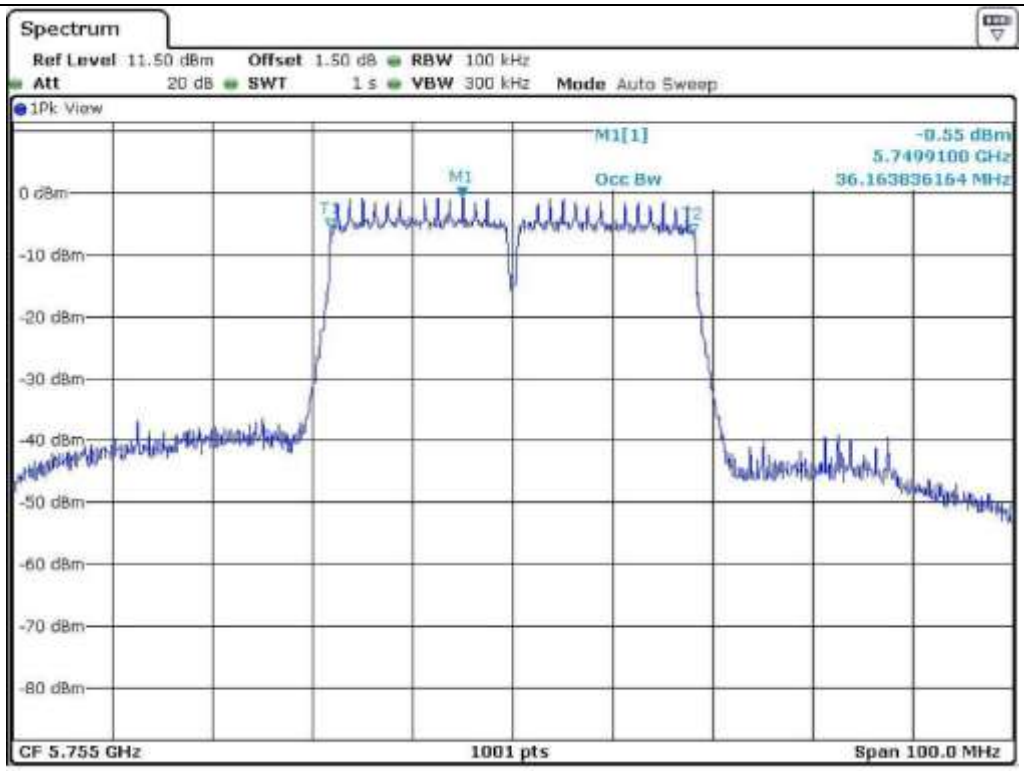
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

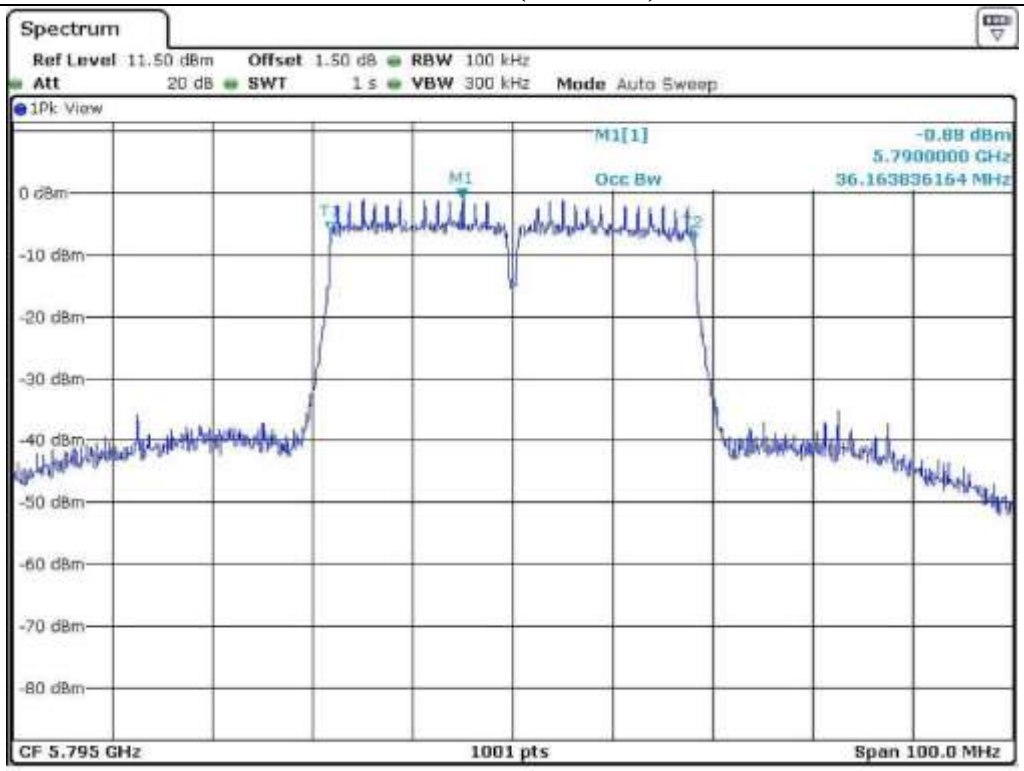


High Channel (5 670 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 755 MHz)



High Channel (5 795 MHz)

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EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

7.6.2 Test data for Antenna 1

-. Test Date : June 20, 2015

-. Test Result : Pass

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5 150 ~ 5 250	Low	5 190	38.96	36.16
	High	5 230	38.96	36.16
5 250 ~ 5 350	Low	5 270	38.86	36.16
	High	5 310	38.86	36.16
5 470 ~ 5 725	Low	5 510	38.86	36.26
	Middle	5 590	38.86	36.26
	High	5 670	38.86	36.26
5 725 ~ 5 850	Low	5 755	38.86	36.16
	High	5 795	38.86	36.16

Tested by: Tae-Ho, Kim / Senior Engineer

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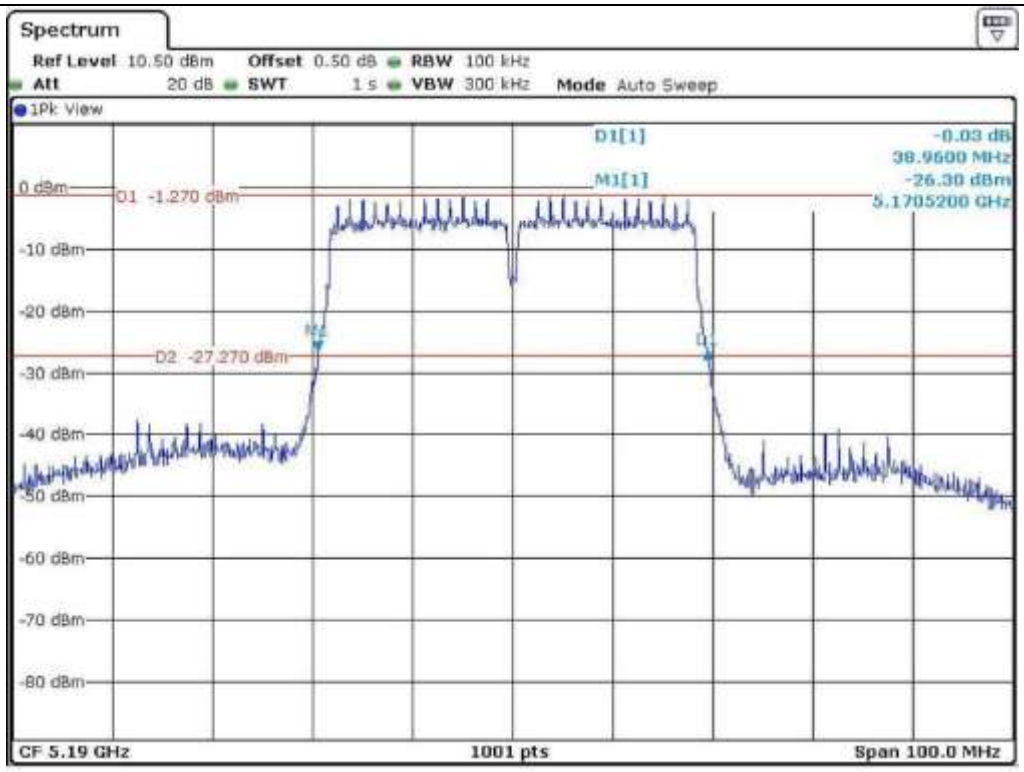
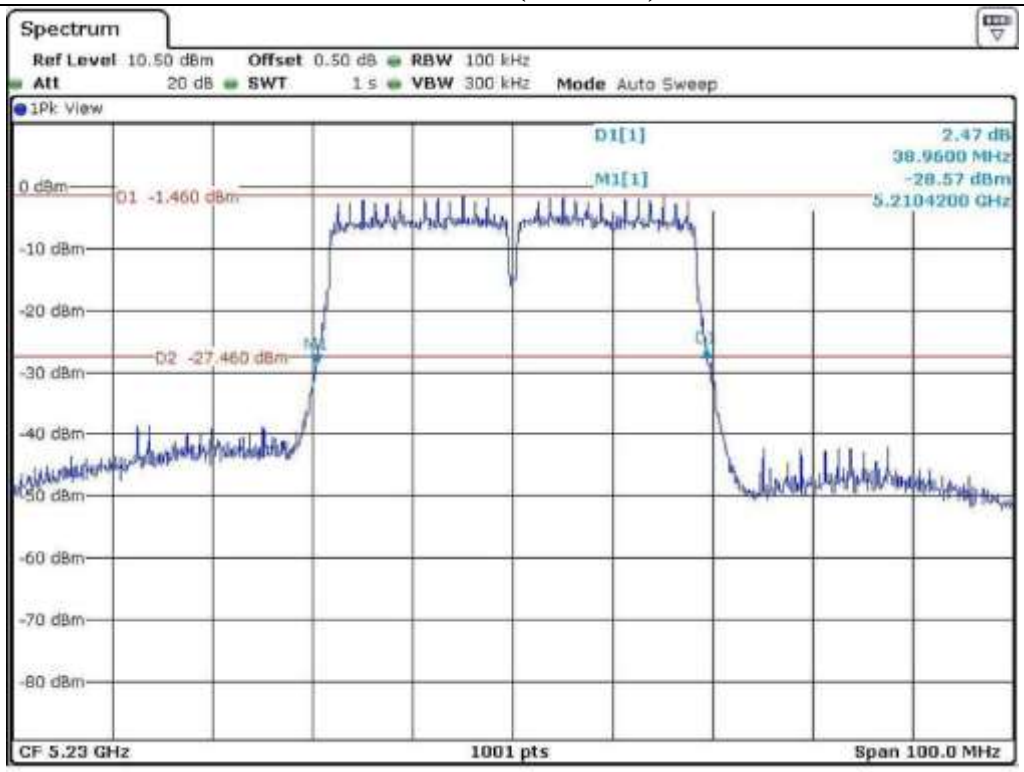
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 190 MHz)



High Channel (5 230 MHz)

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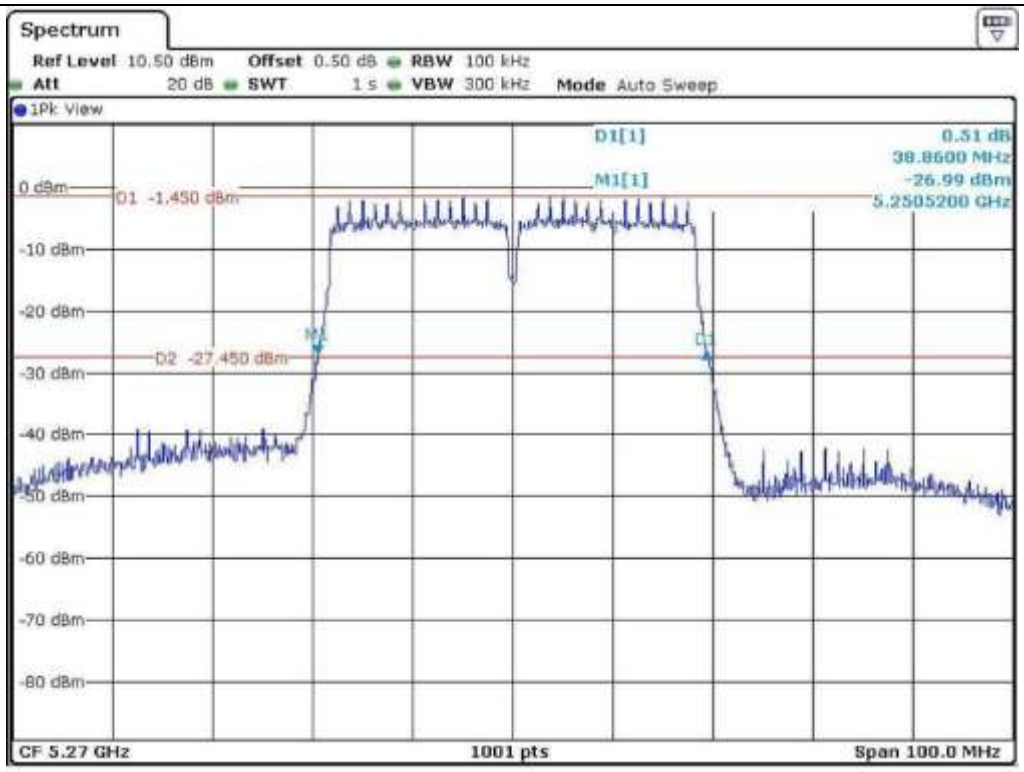
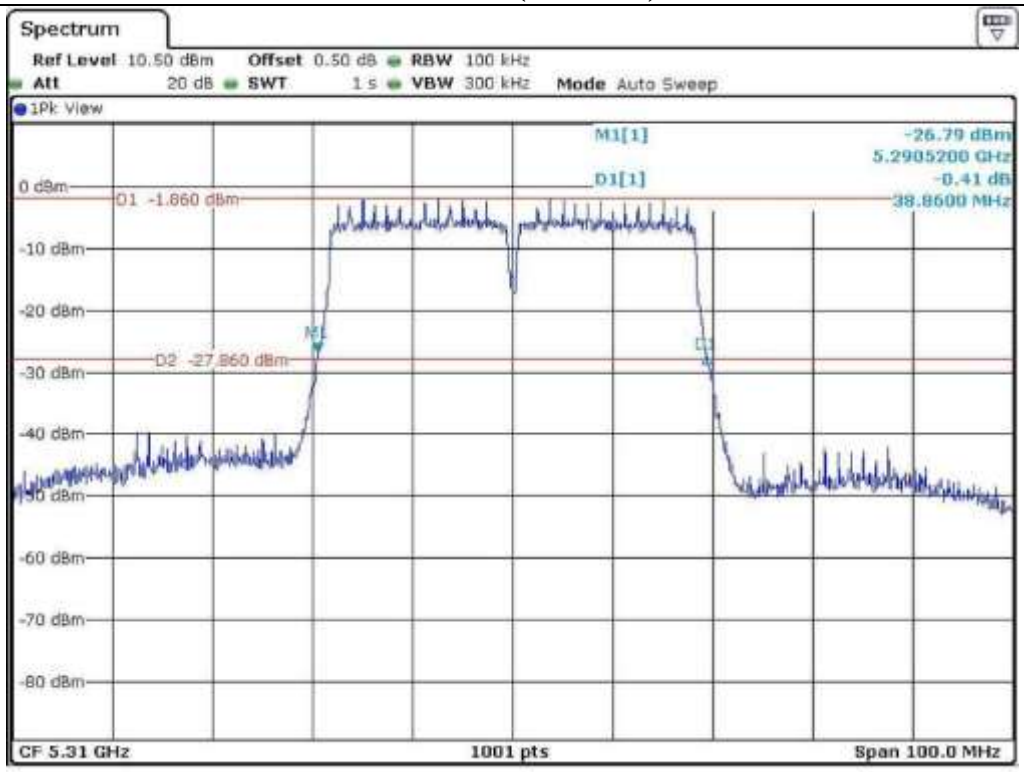
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 270 MHz)



High Channel (5 310 MHz)

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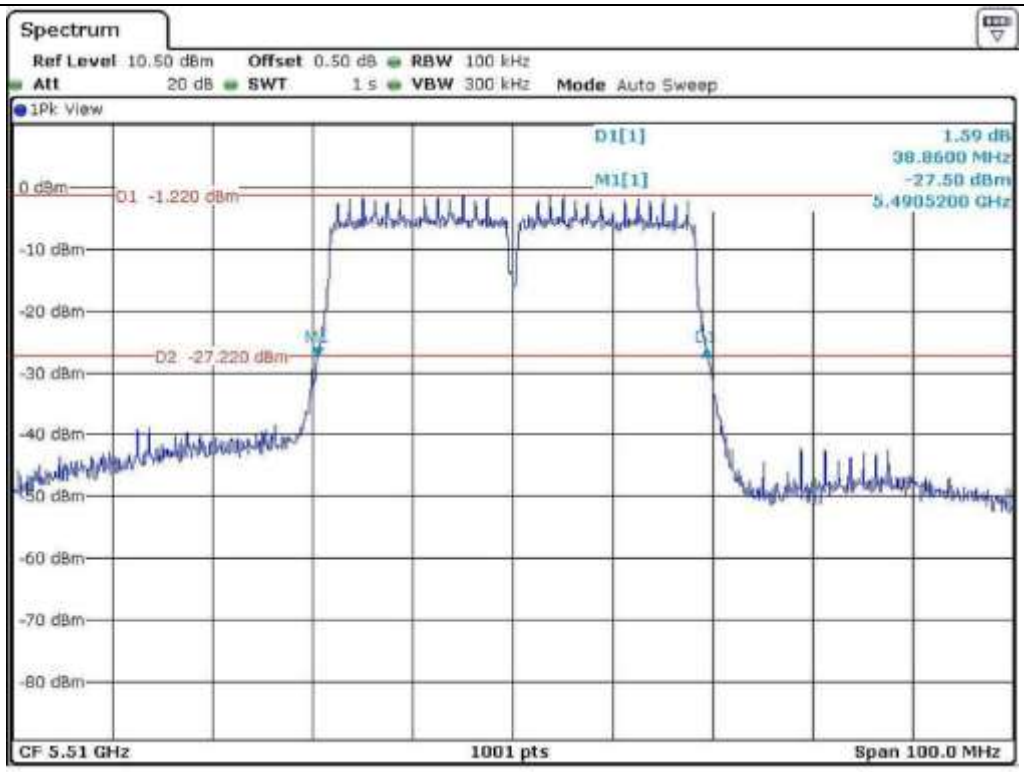
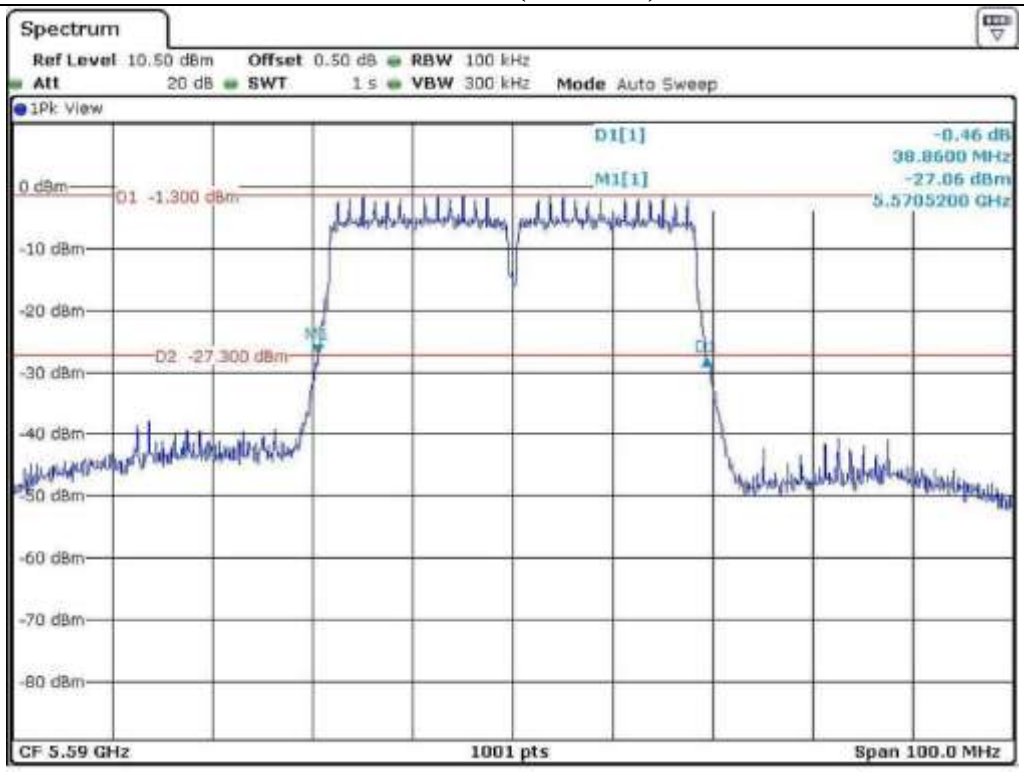
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 510 MHz)



Middle Channel (5 590 MHz)

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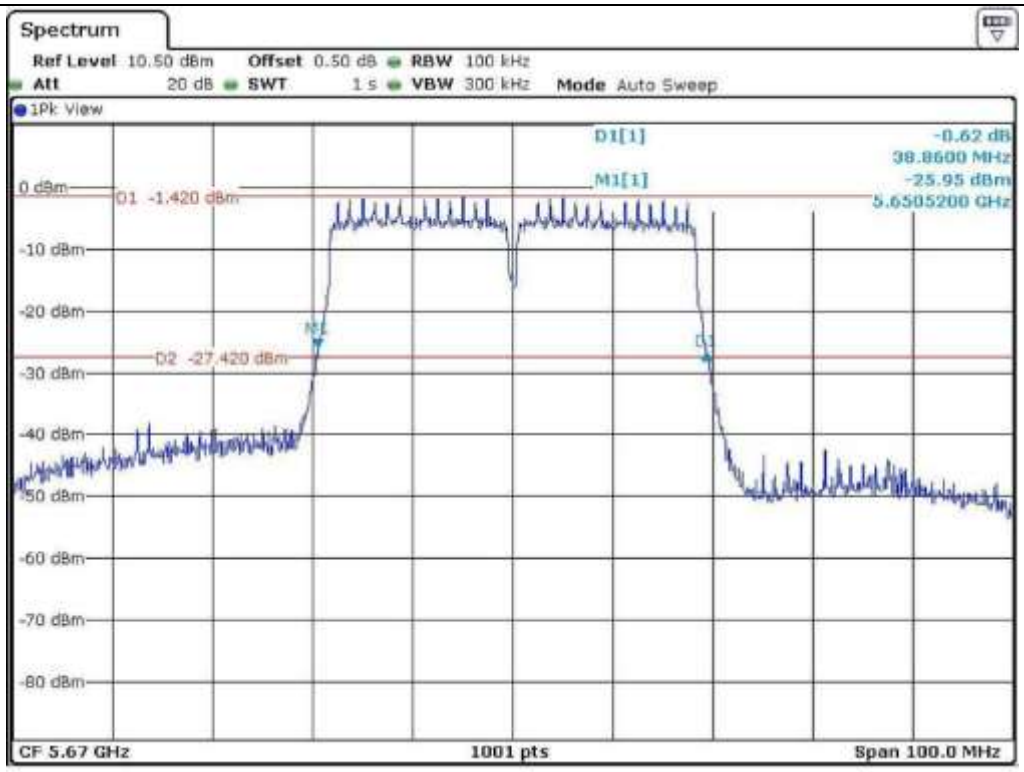
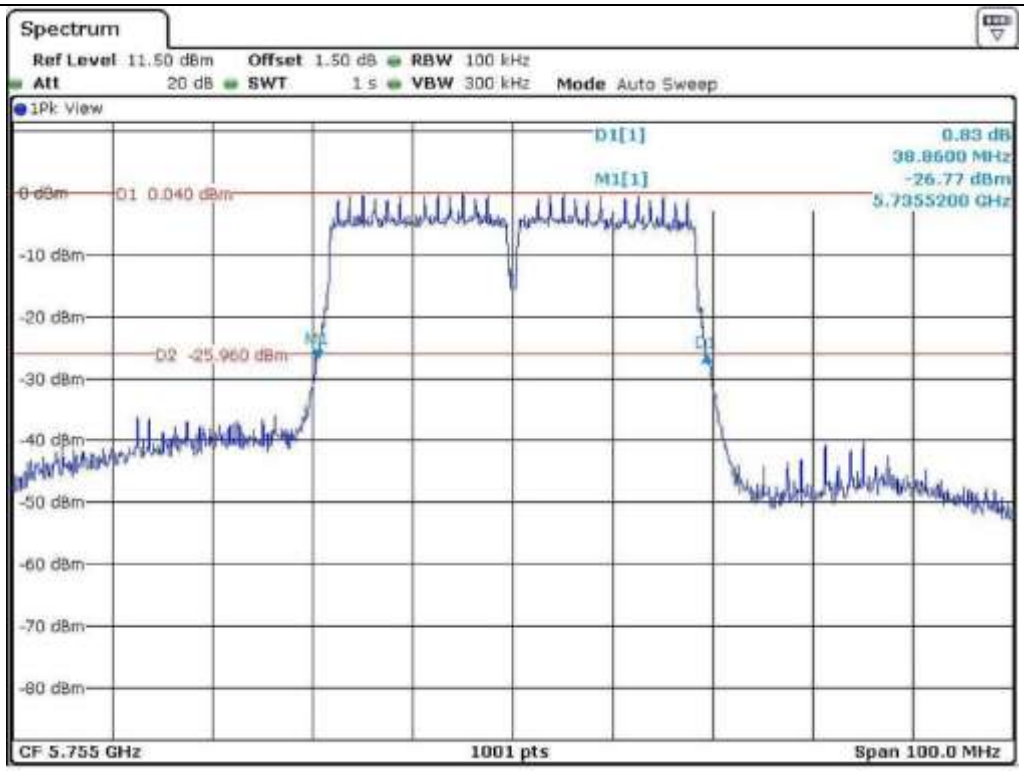
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

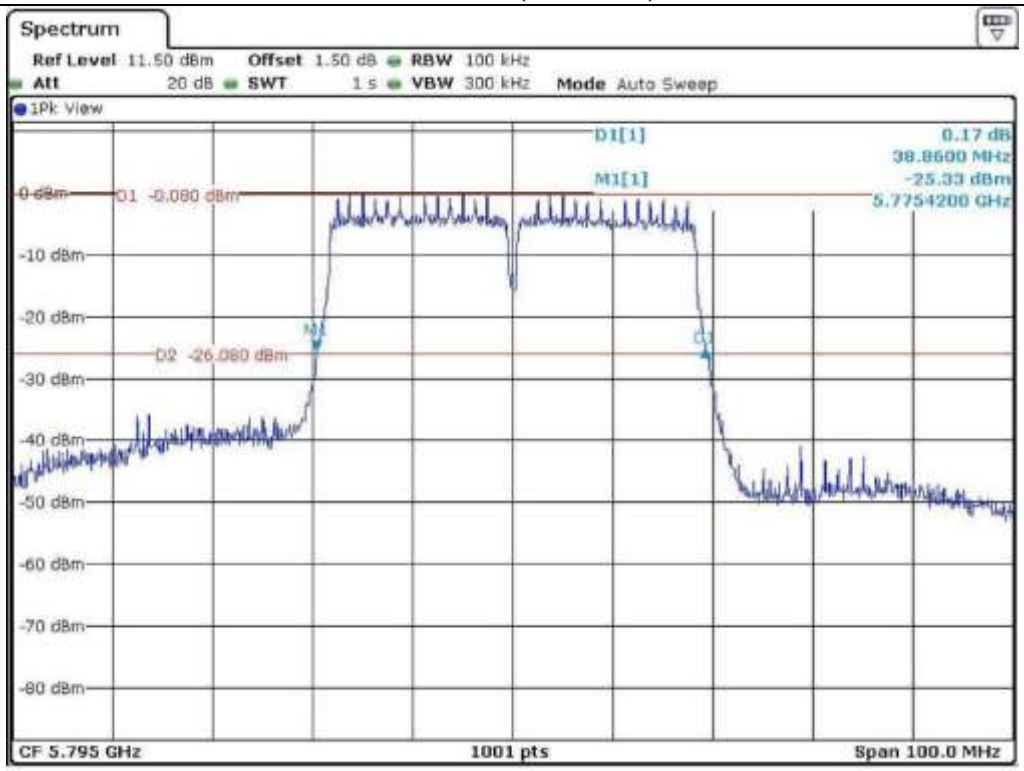


High Channel (5 670 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 755 MHz)



High Channel (5 795 MHz)

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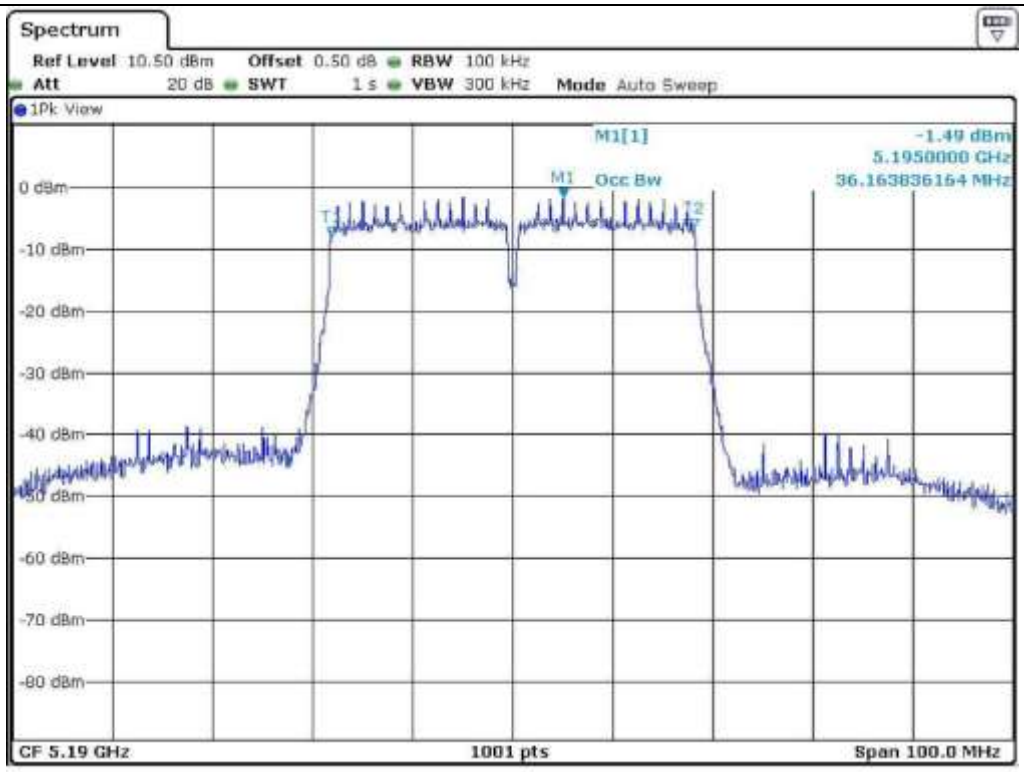
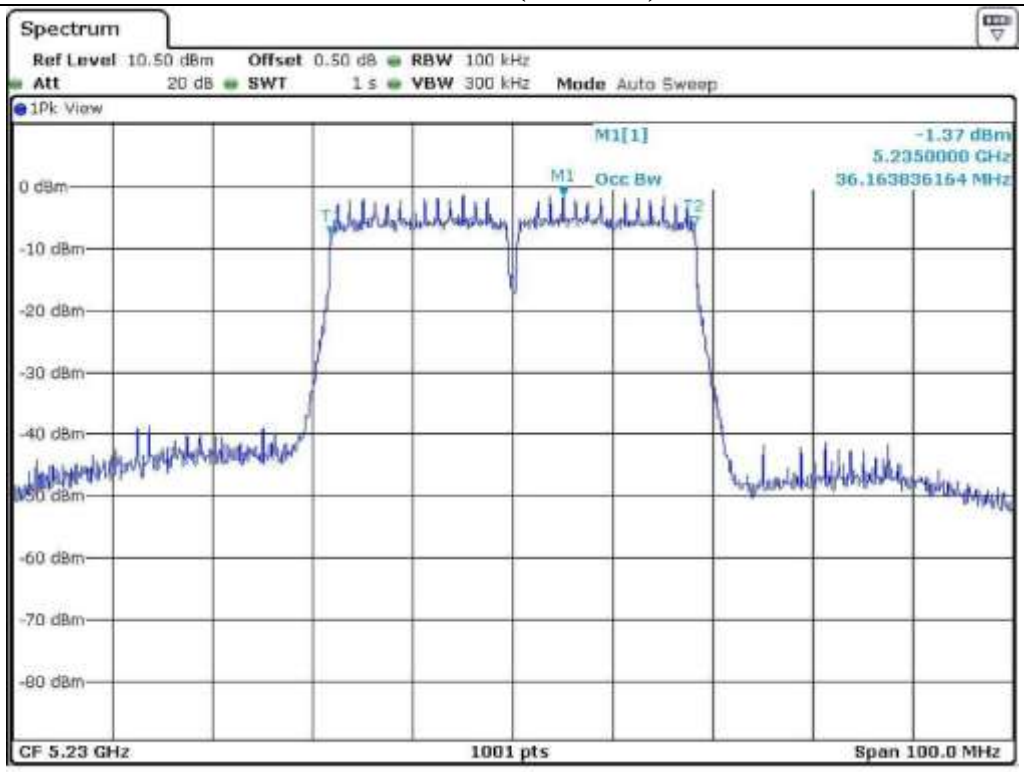
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 190 MHz)



High Channel (5 230 MHz)

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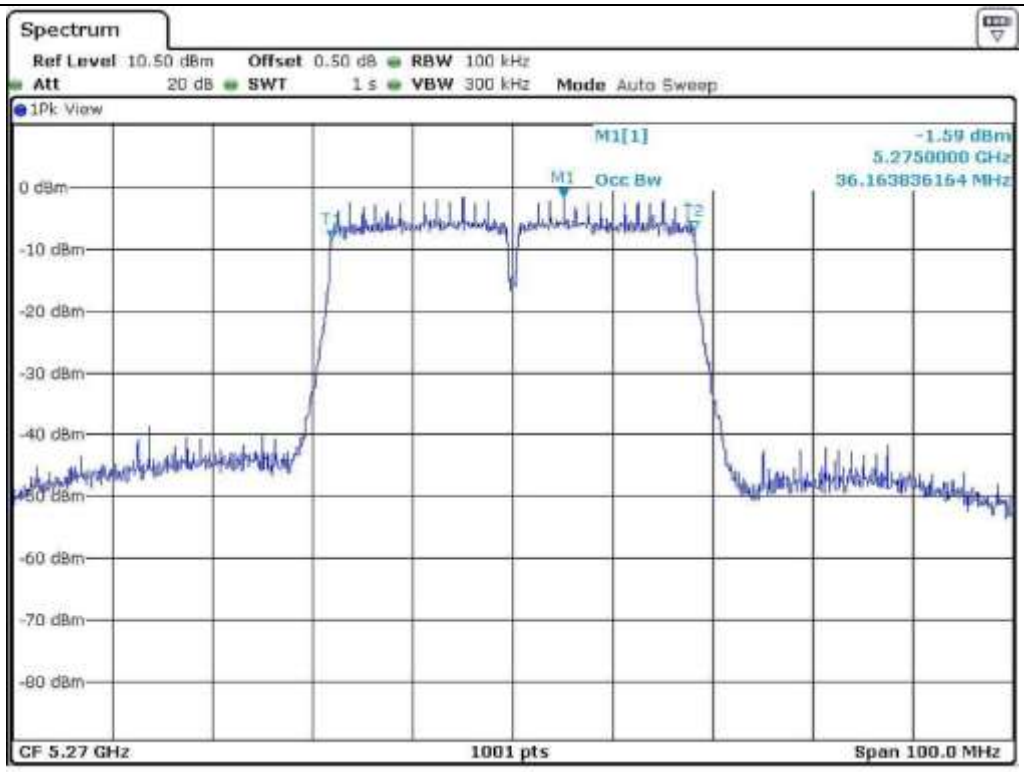
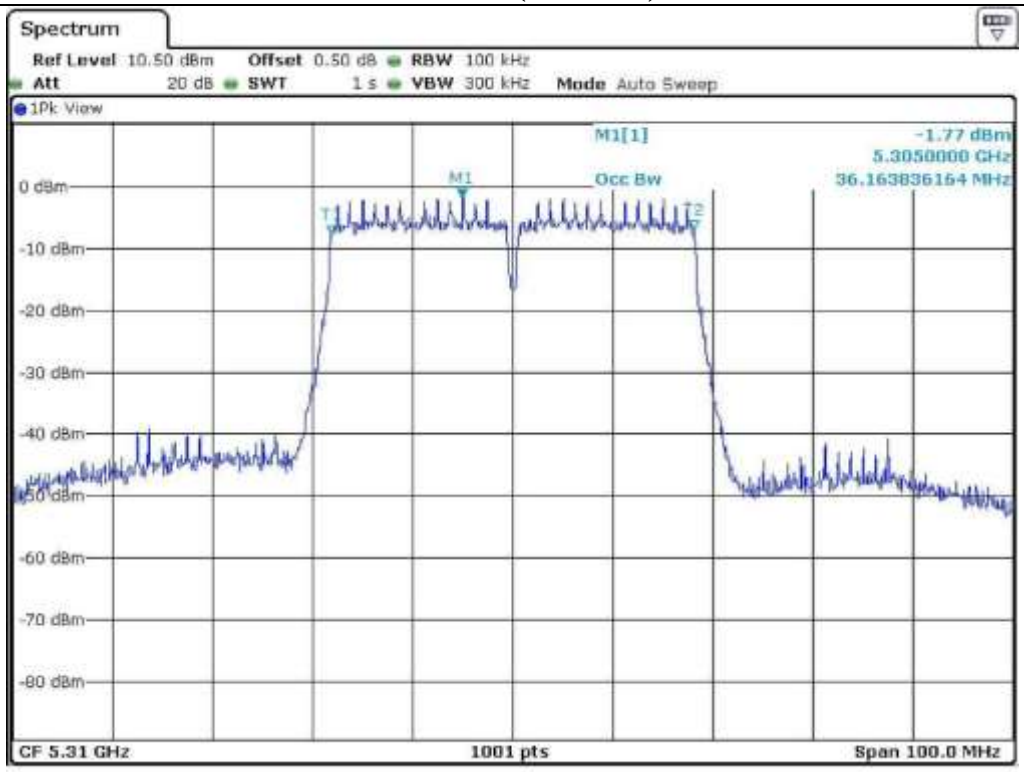


Low Channel (5 270 MHz)



High Channel (5 310 MHz)

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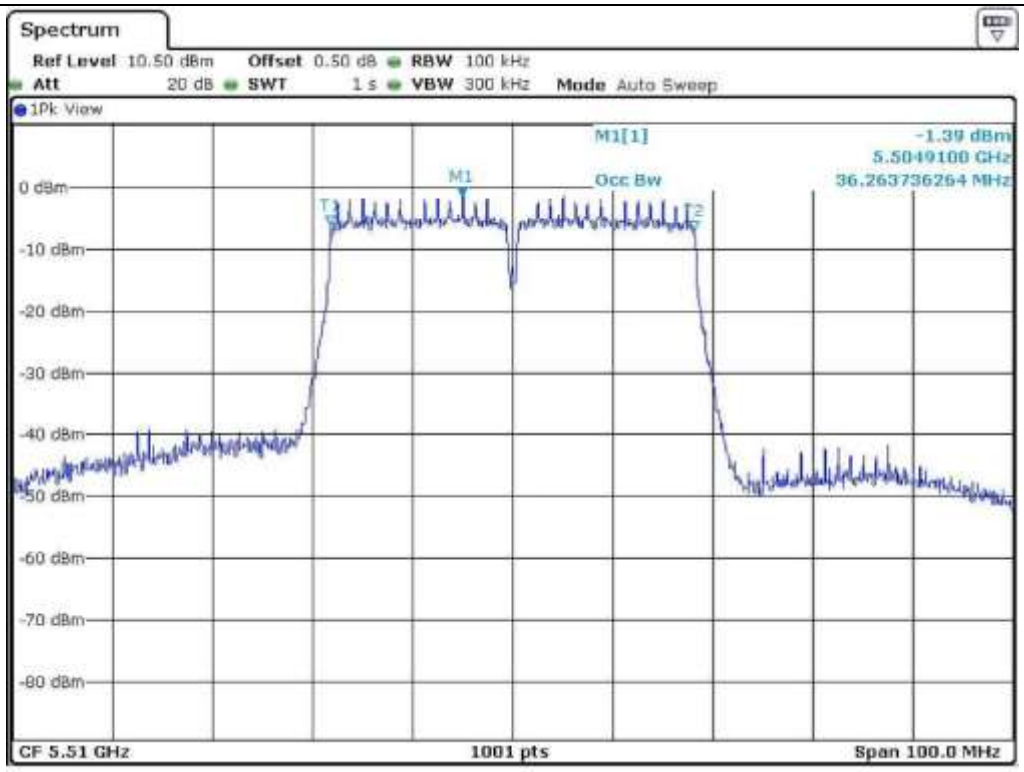
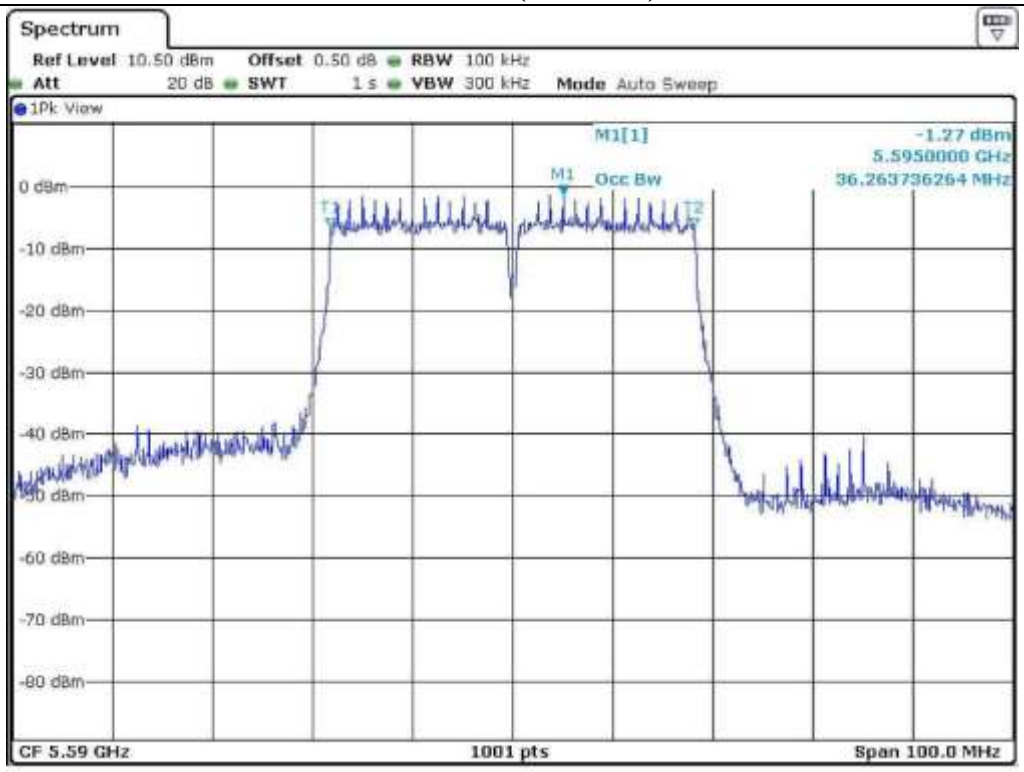


Low Channel (5 510 MHz)



Middle Channel (5 590 MHz)

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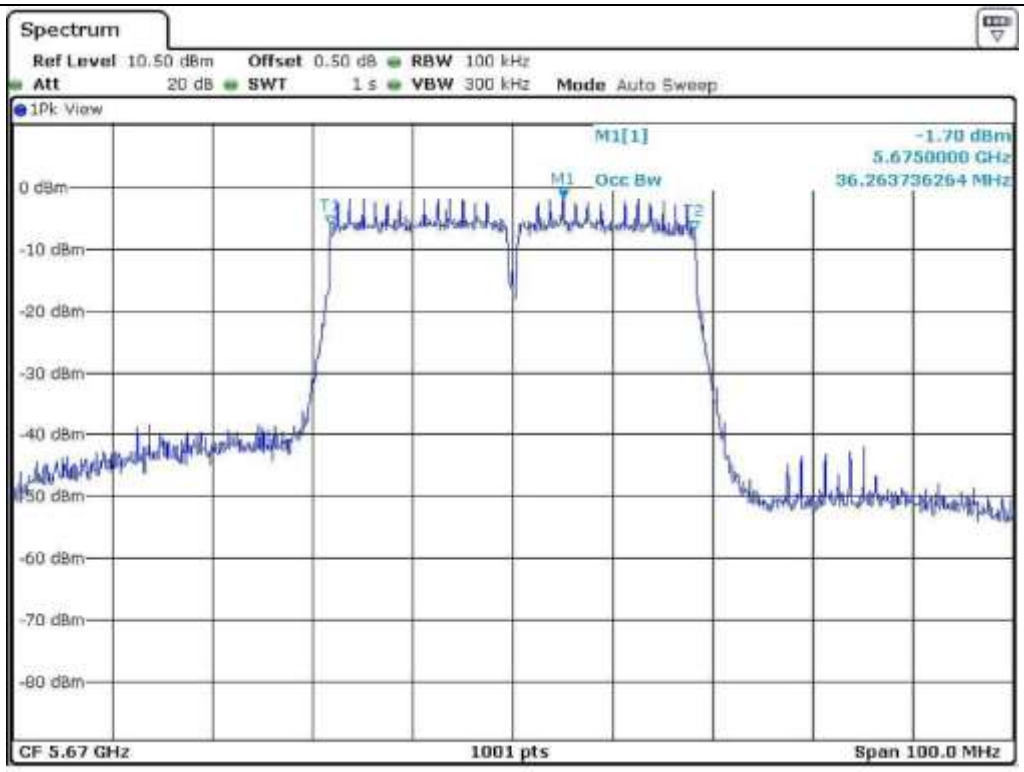
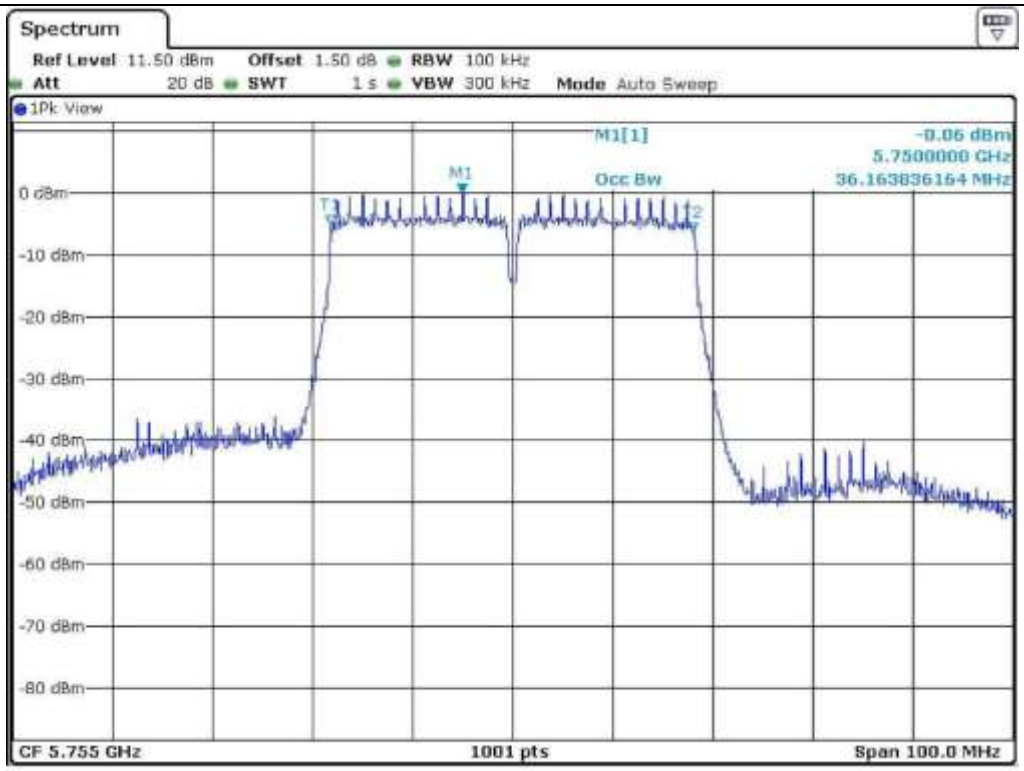
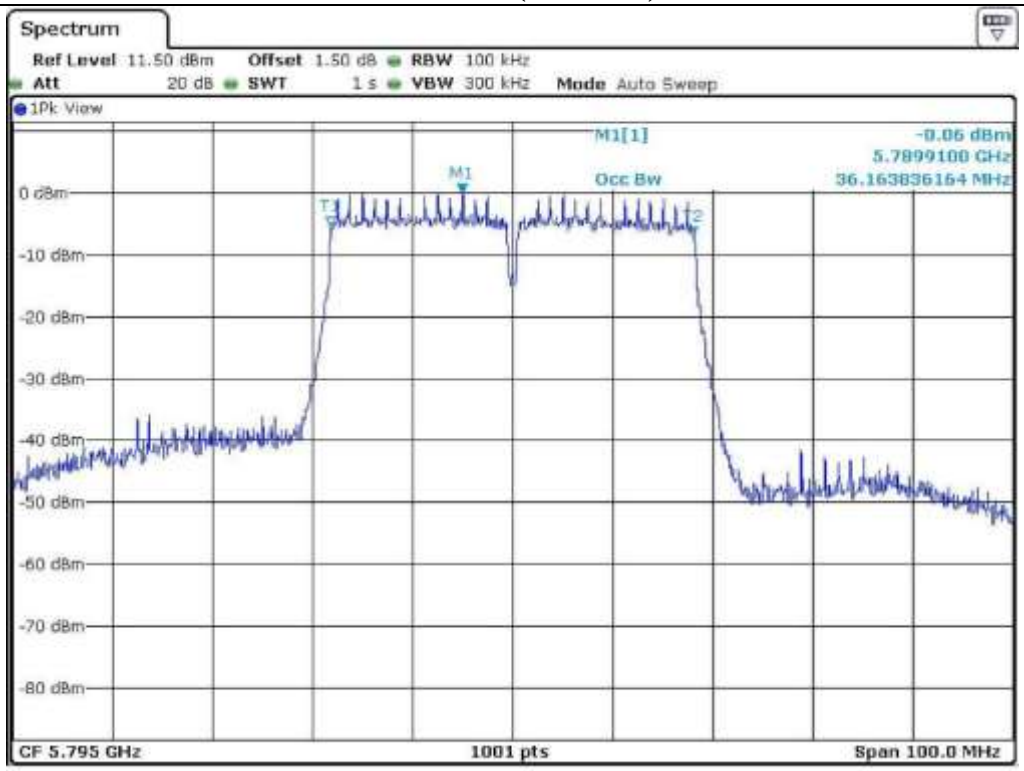


High Channel (5 670 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 755 MHz)



High Channel (5 795 MHz)

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EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

7.7 Test data for 802.11ac_HT20 RLAN Mode

7.7.1 Test data for Antenna 0

-. Test Date : June 16, 2015

-. Test Result : Pass

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5 150 ~ 5 250	Low	5 180	21.28	17.73
	Middle	5 200	21.28	17.73
	High	5 240	21.28	17.73
5 250 ~ 5 350	Low	5 260	21.28	17.73
	Middle	5 300	21.28	17.73
	High	5 320	21.28	17.73
5 470 ~ 5 725	Low	5 500	21.38	17.78
	Middle	5 600	21.38	17.78
	High	5 700	21.38	17.78
5 725 ~ 5 850	Low	5 745	21.28	17.78
	Middle	5 785	21.28	17.78
	High	5 825	21.28	17.78

Tested by: Tae-Ho, Kim / Senior Engineer

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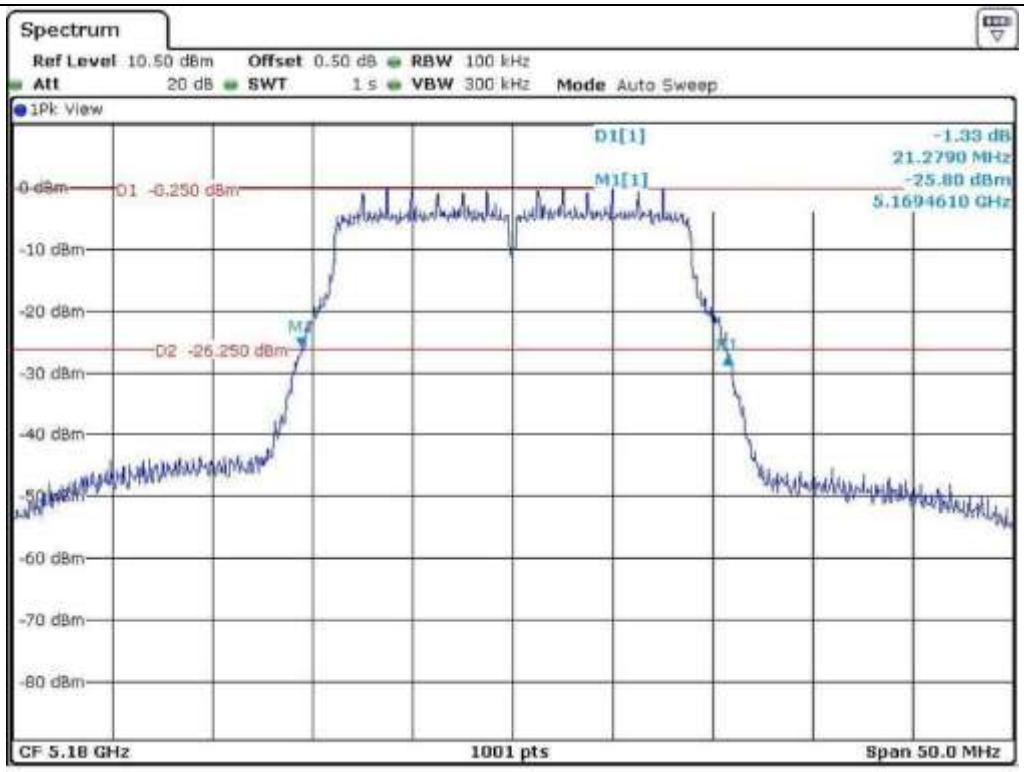
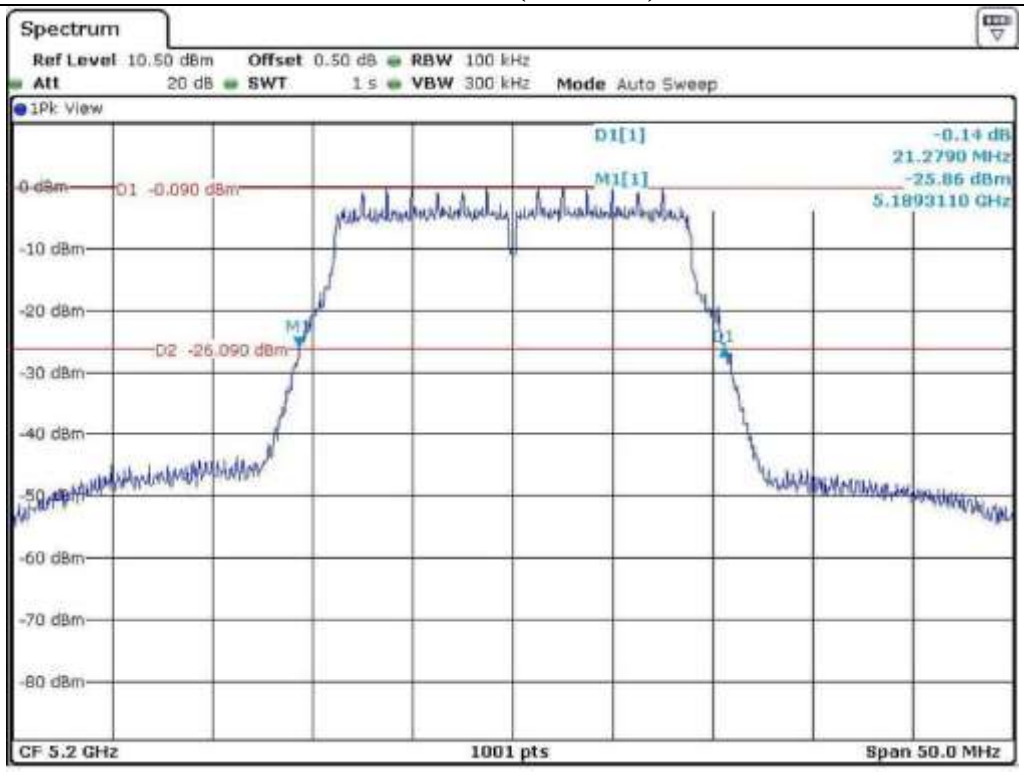
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 180 MHz)



Middle Channel (5 200 MHz)

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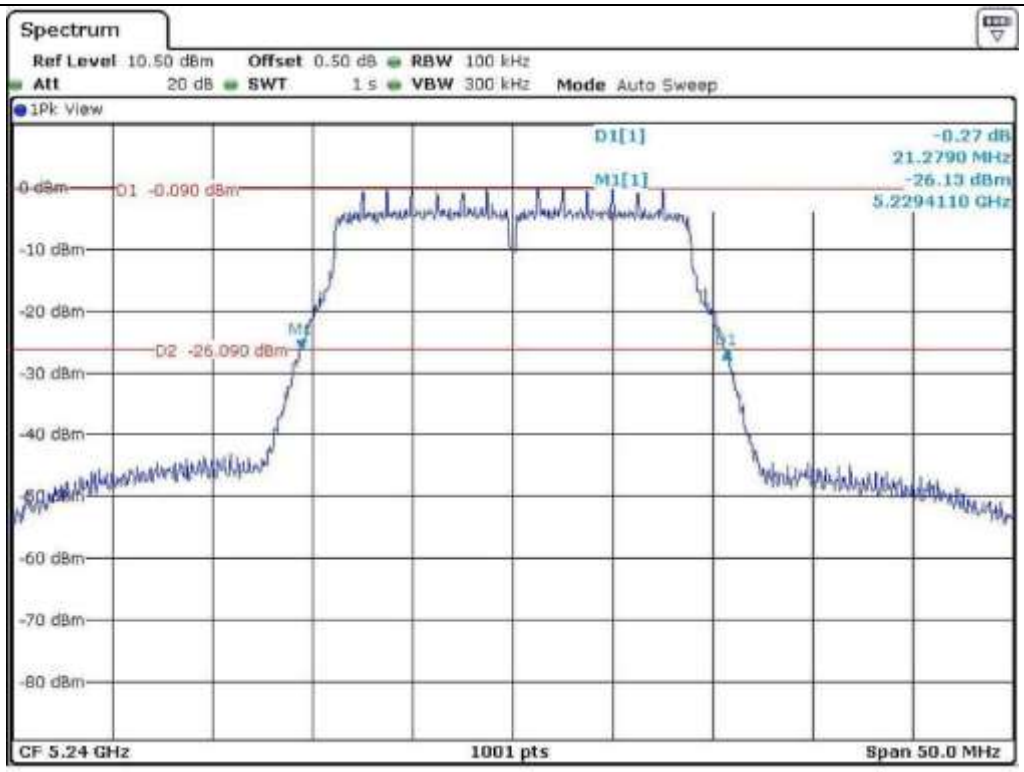
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



High Channel (5 240 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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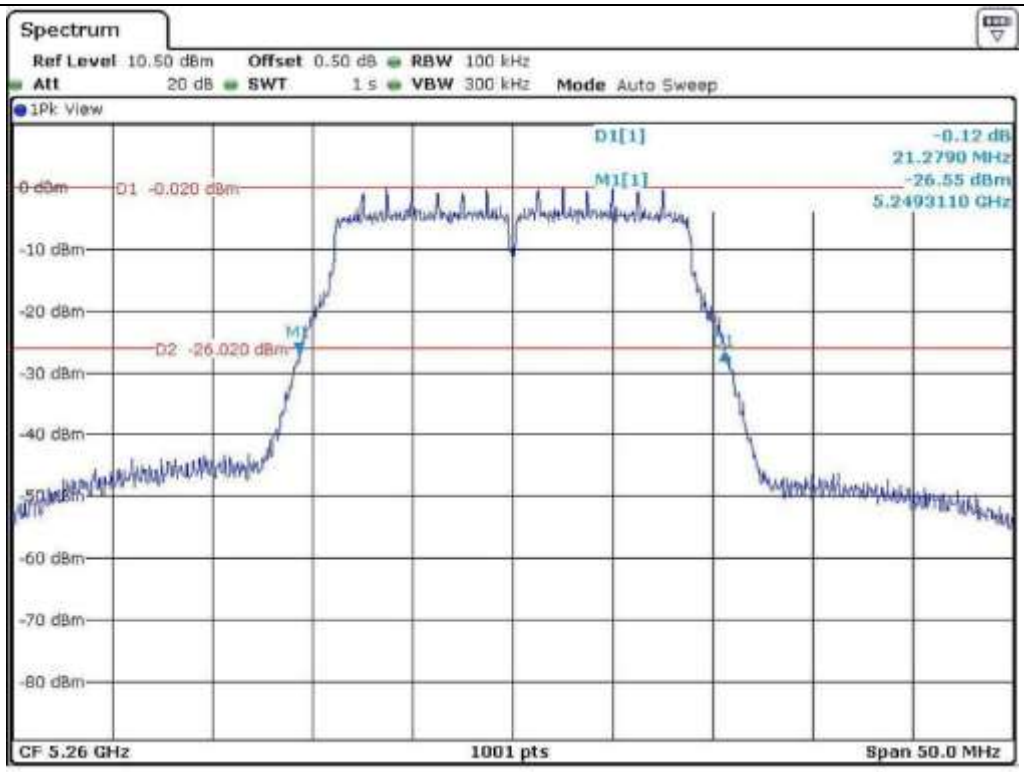
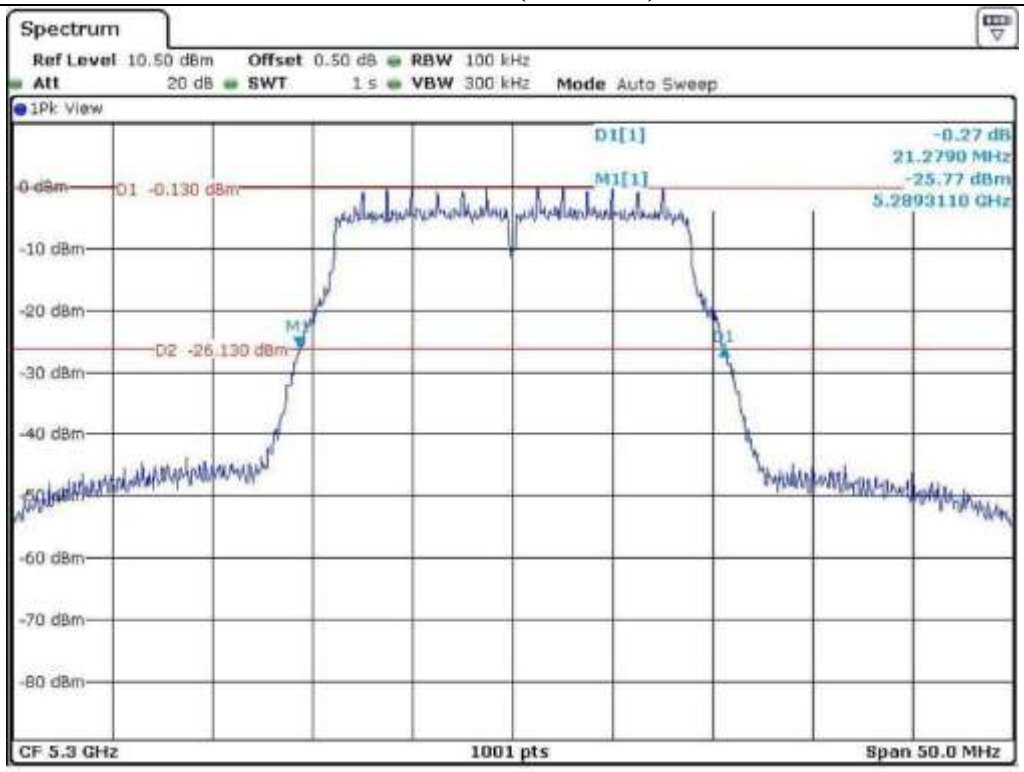


Low Channel (5 260 MHz)



Middle Channel (5 300 MHz)

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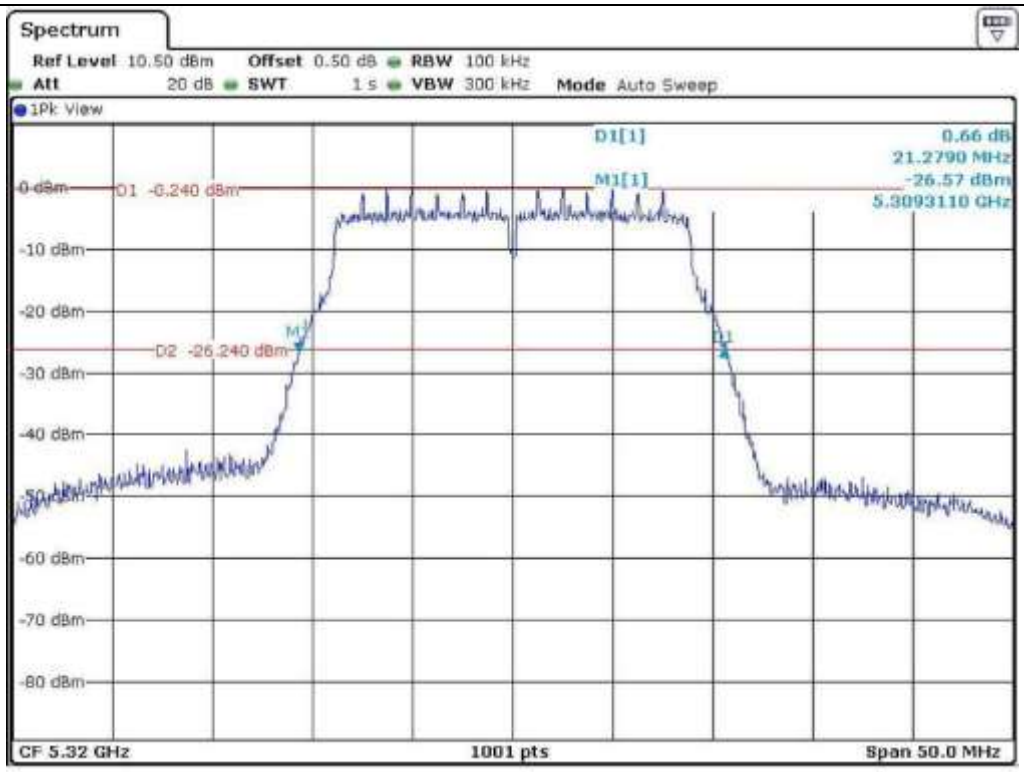
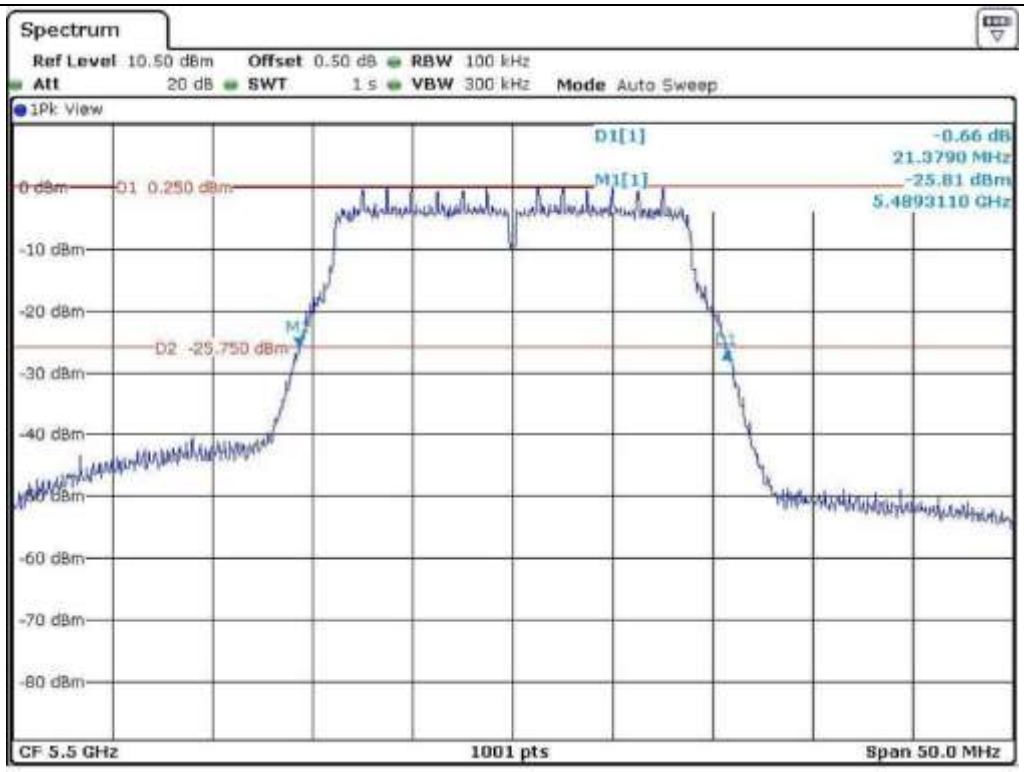
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

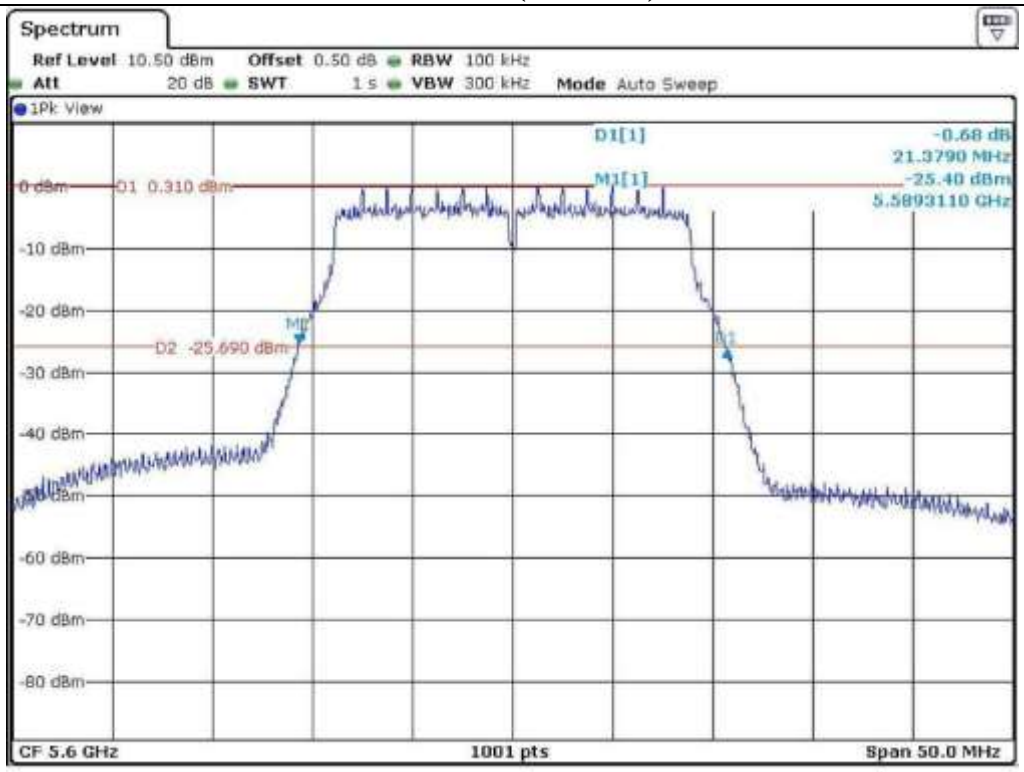


High Channel (5 320 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 500 MHz)



Middle Channel (5 600 MHz)

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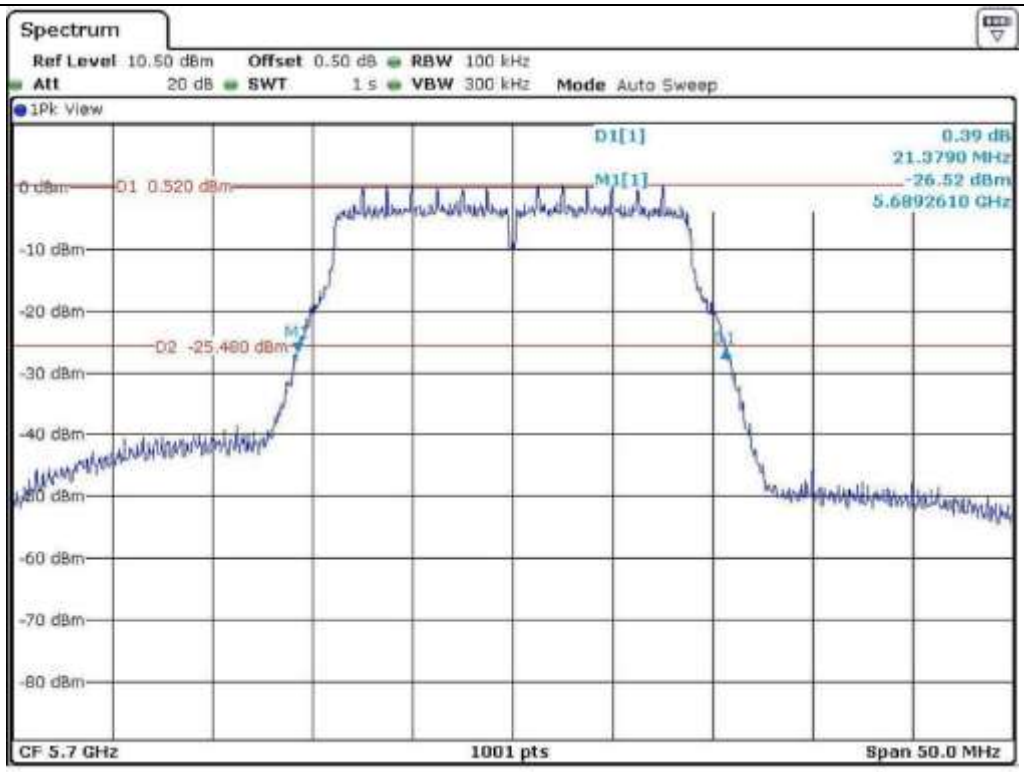
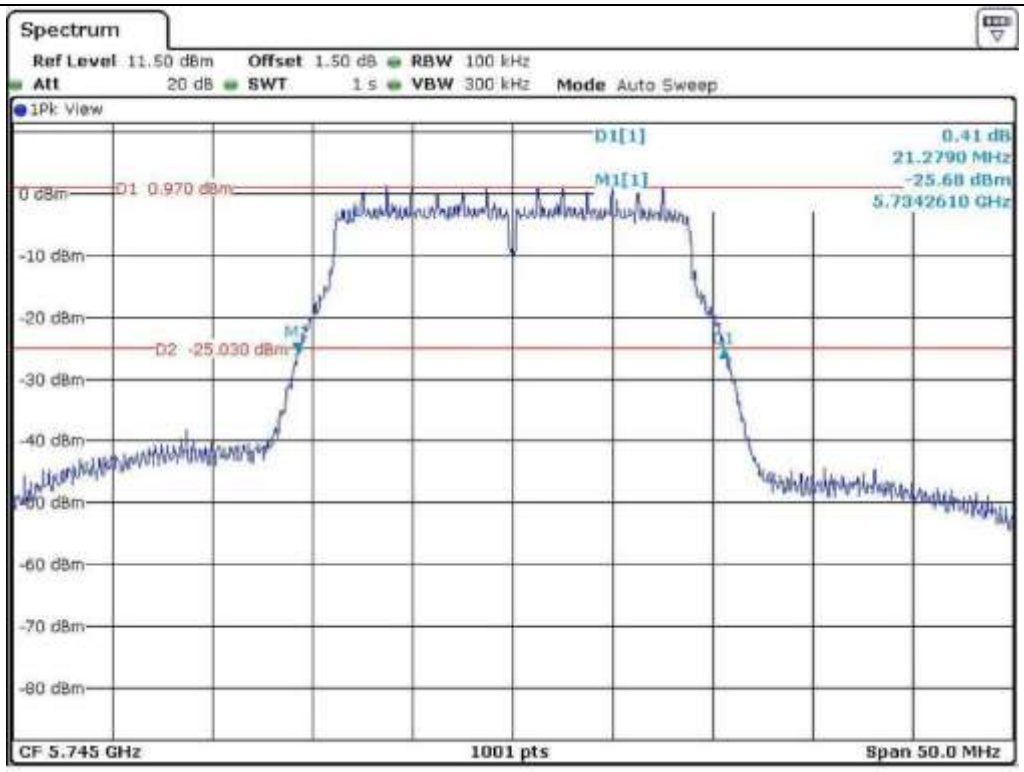
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

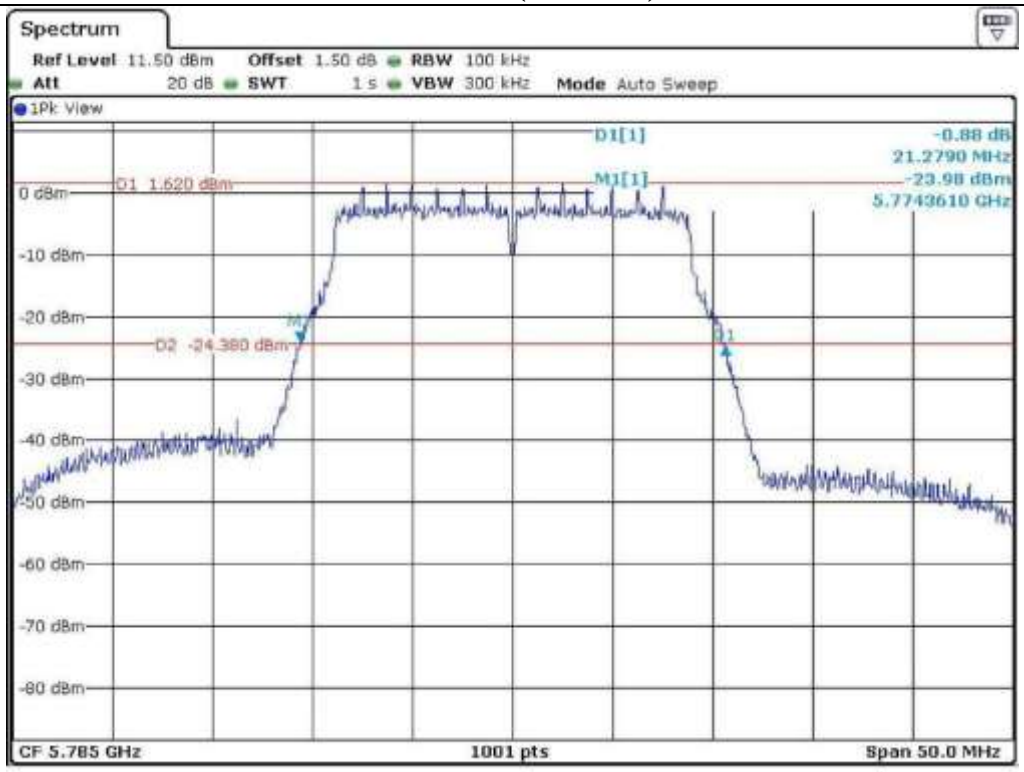


High Channel (5 700 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)

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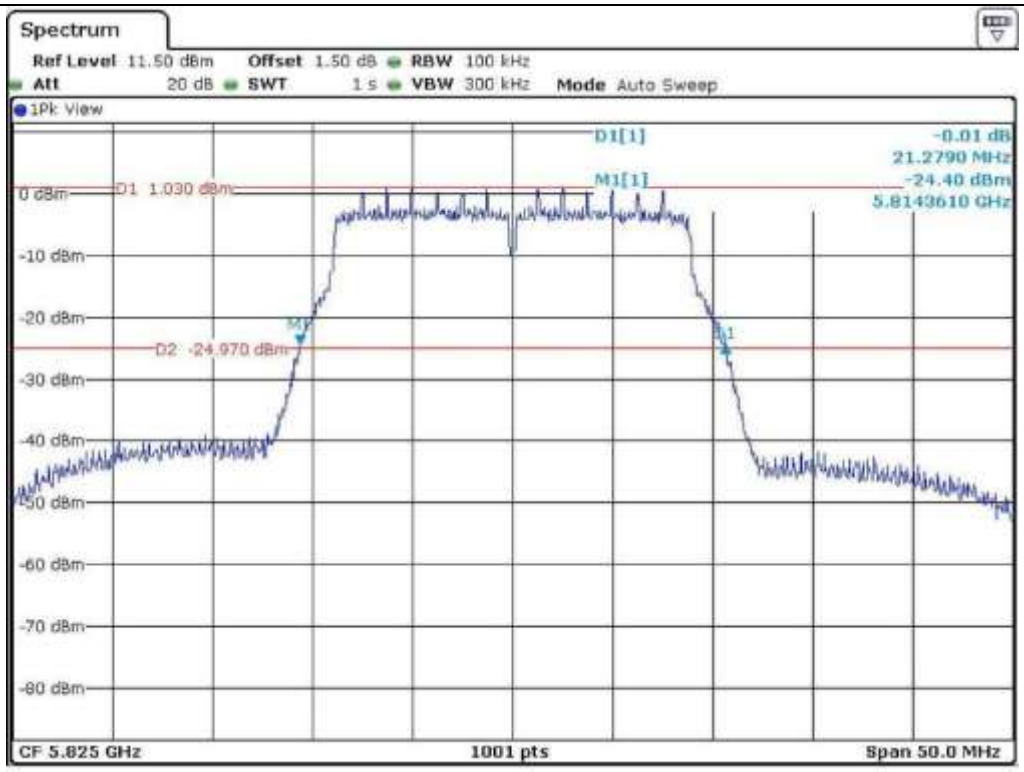
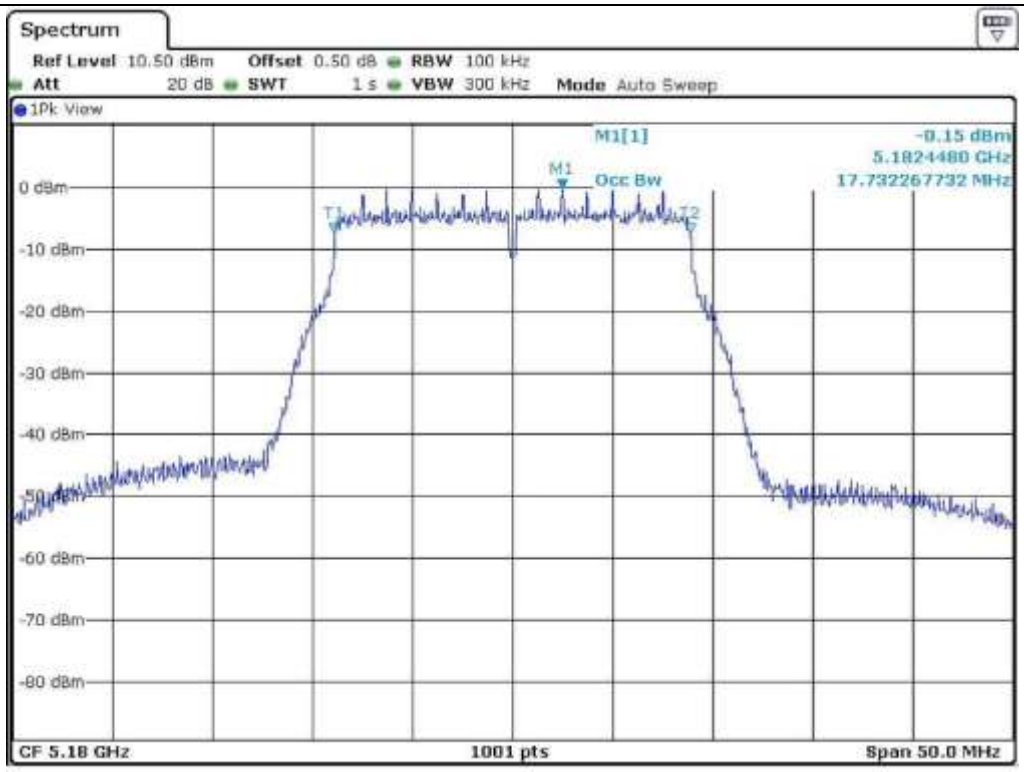
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

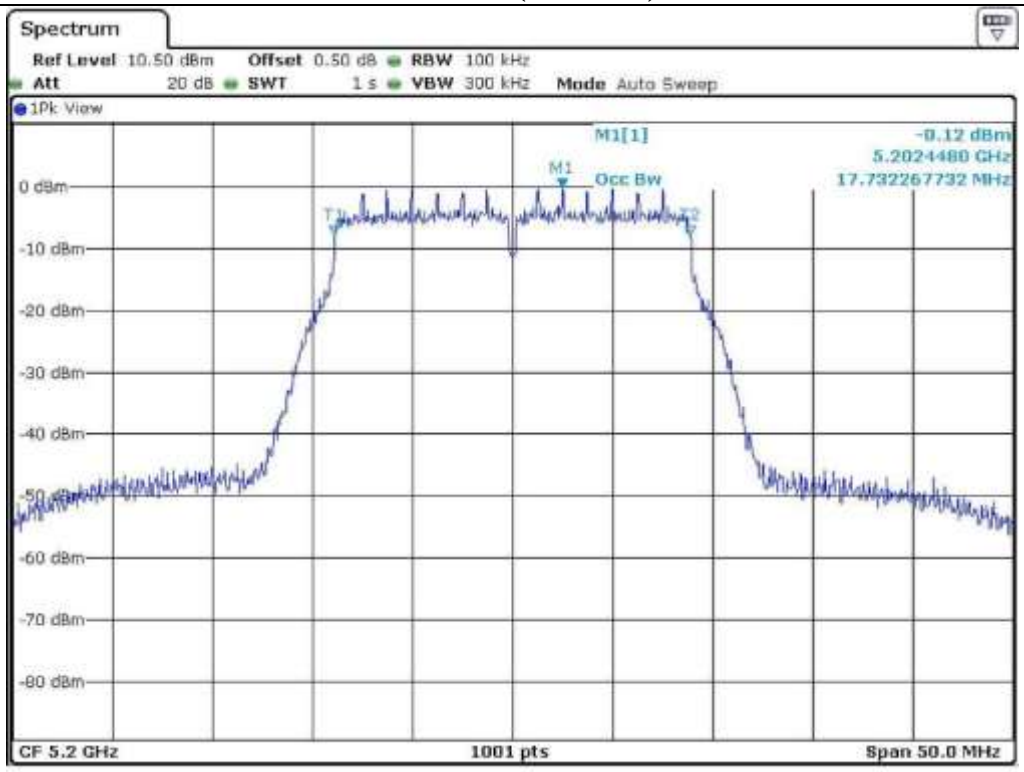


High Channel (5 825 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 180 MHz)



Middle Channel (5 200 MHz)

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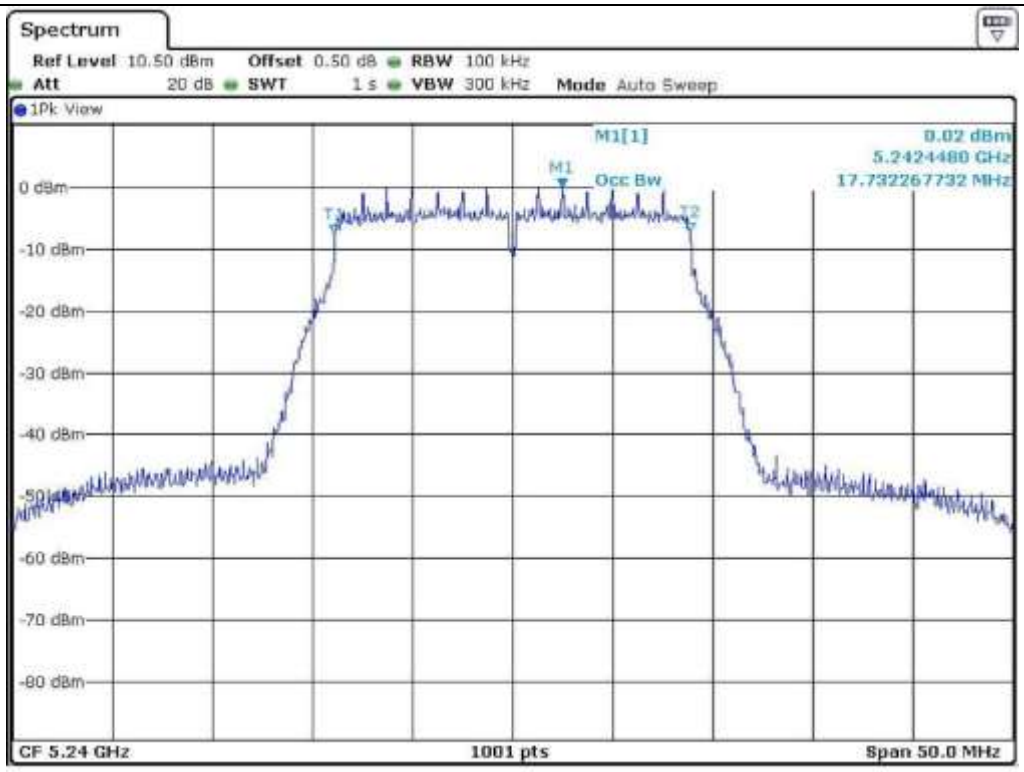
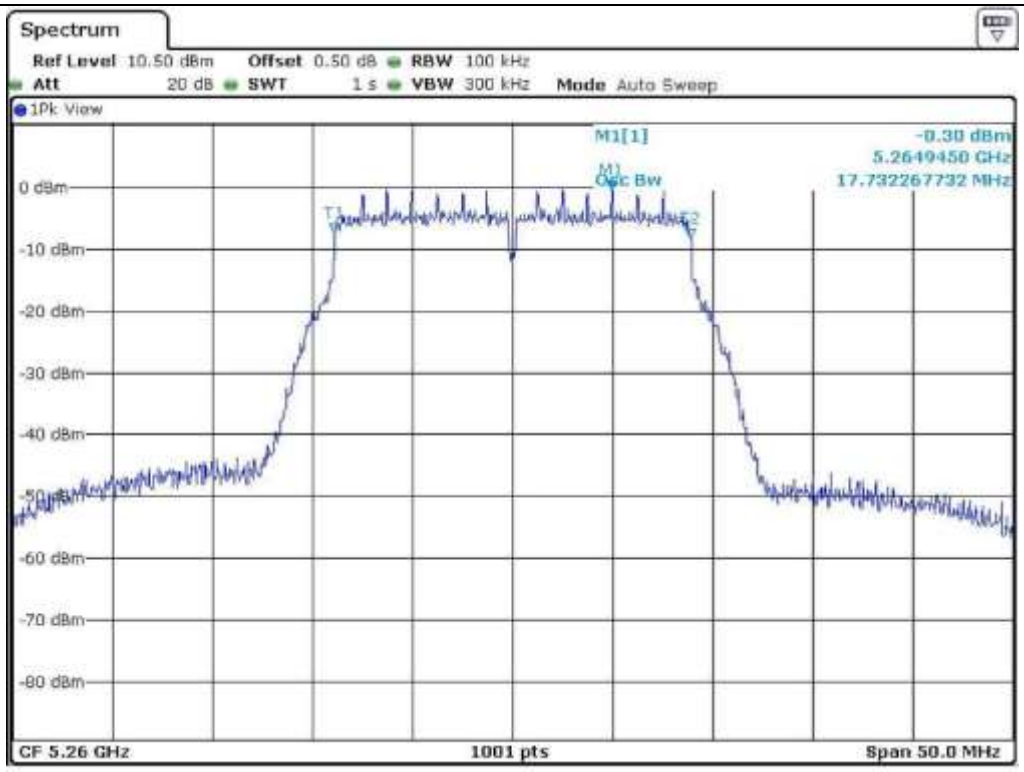
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

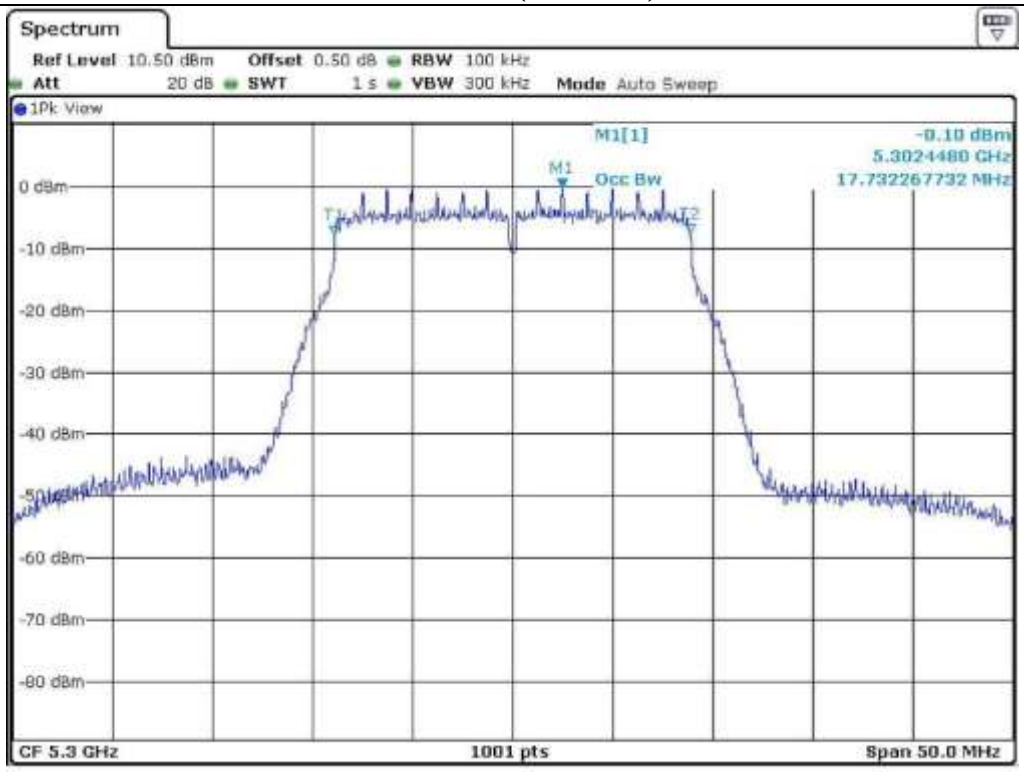


High Channel (5 240 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 260 MHz)



Middle Channel (5 300 MHz)

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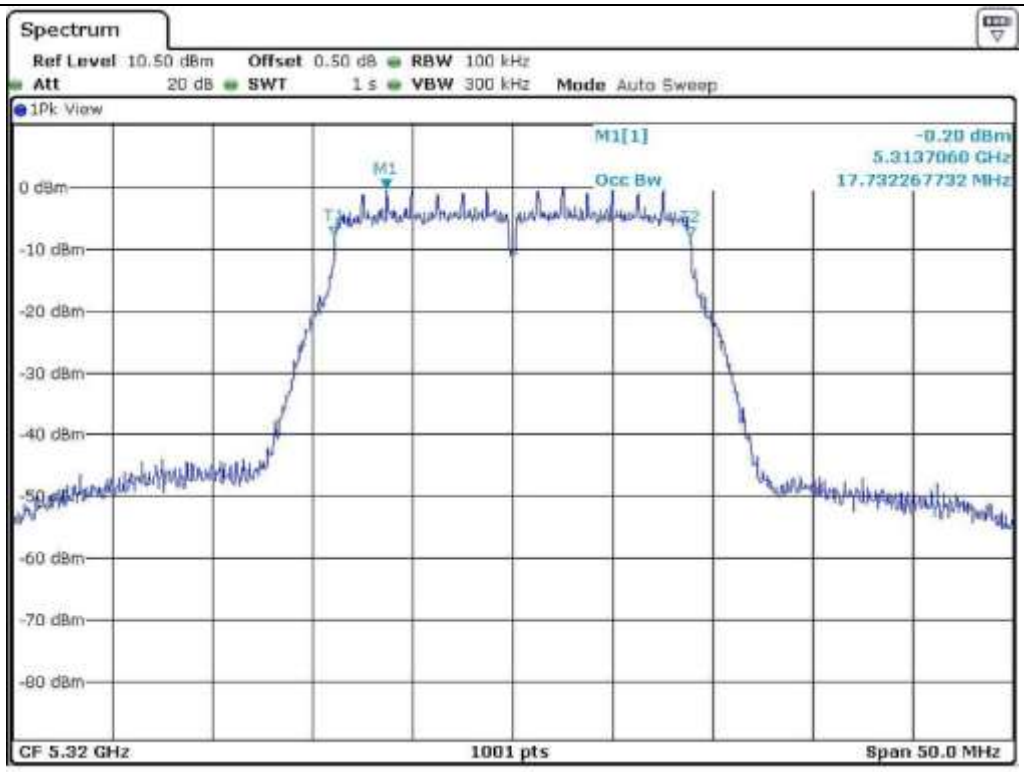
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



High Channel (5 320 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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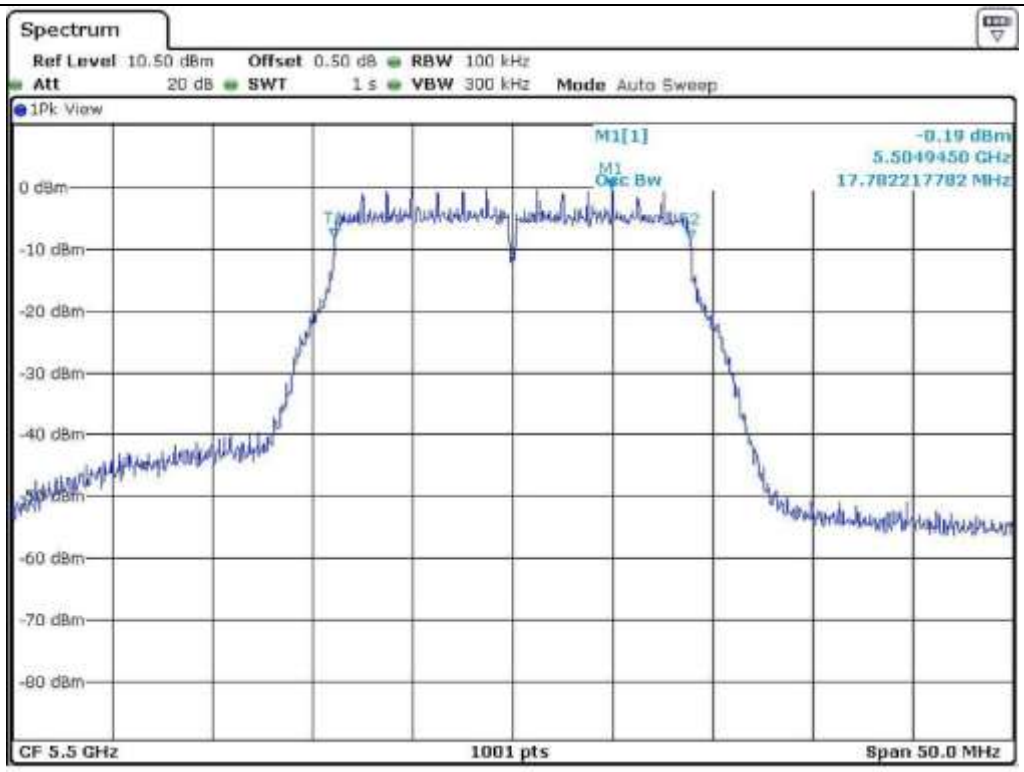
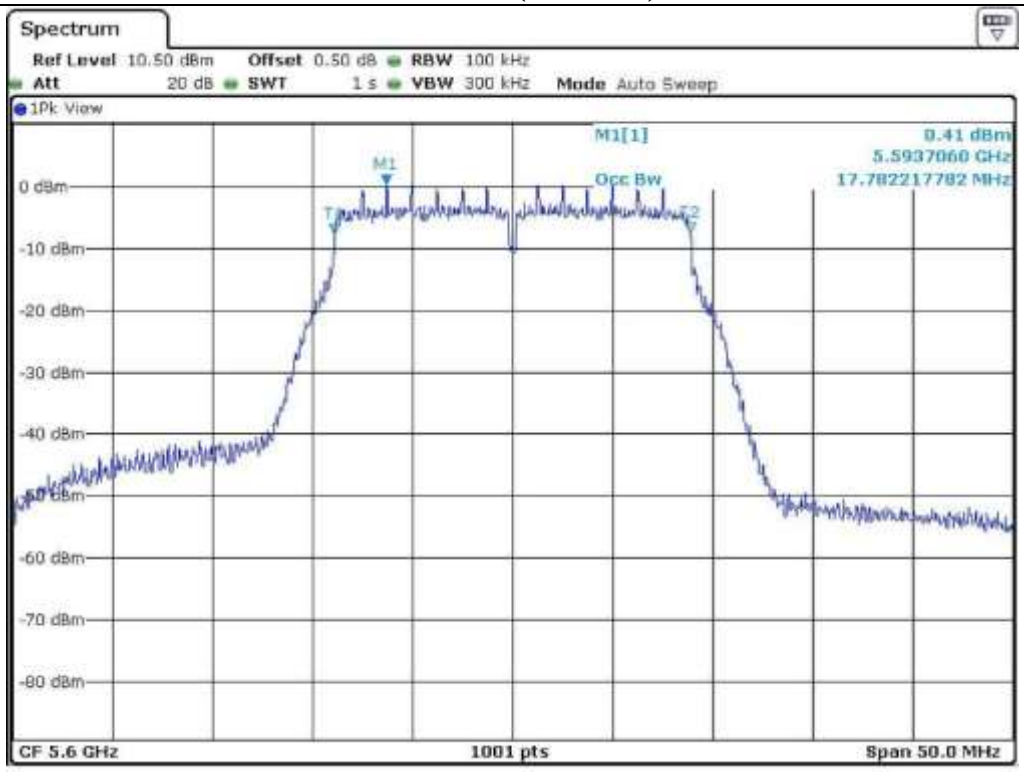


Low Channel (5 500 MHz)



Middle Channel (5 600 MHz)

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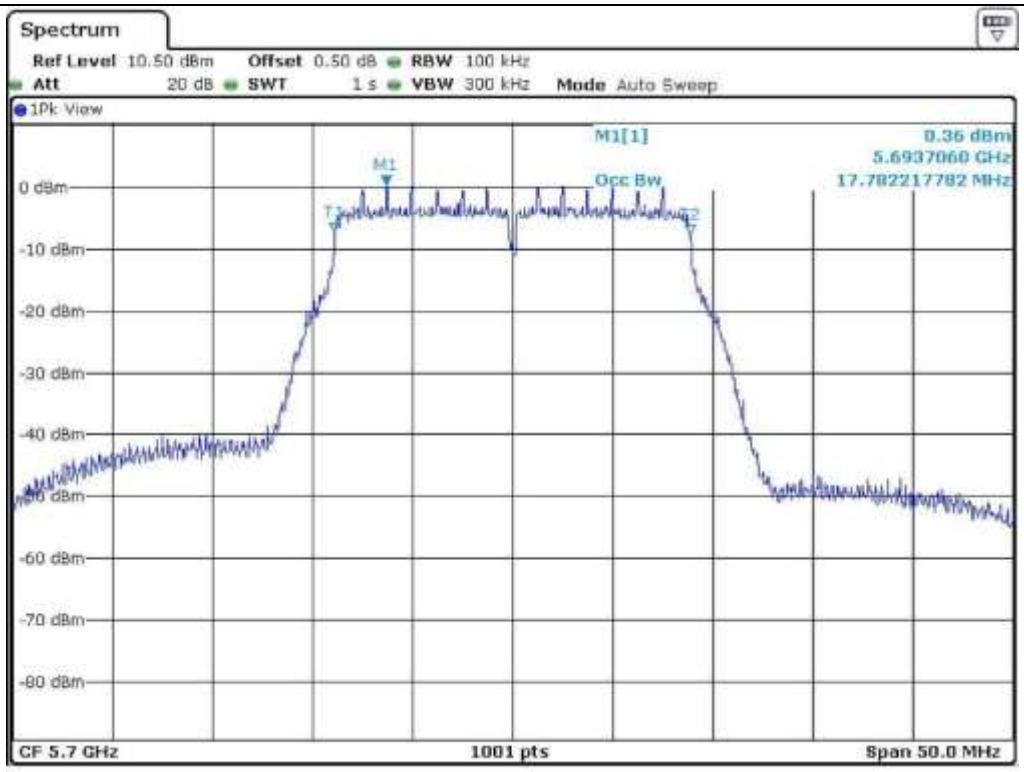
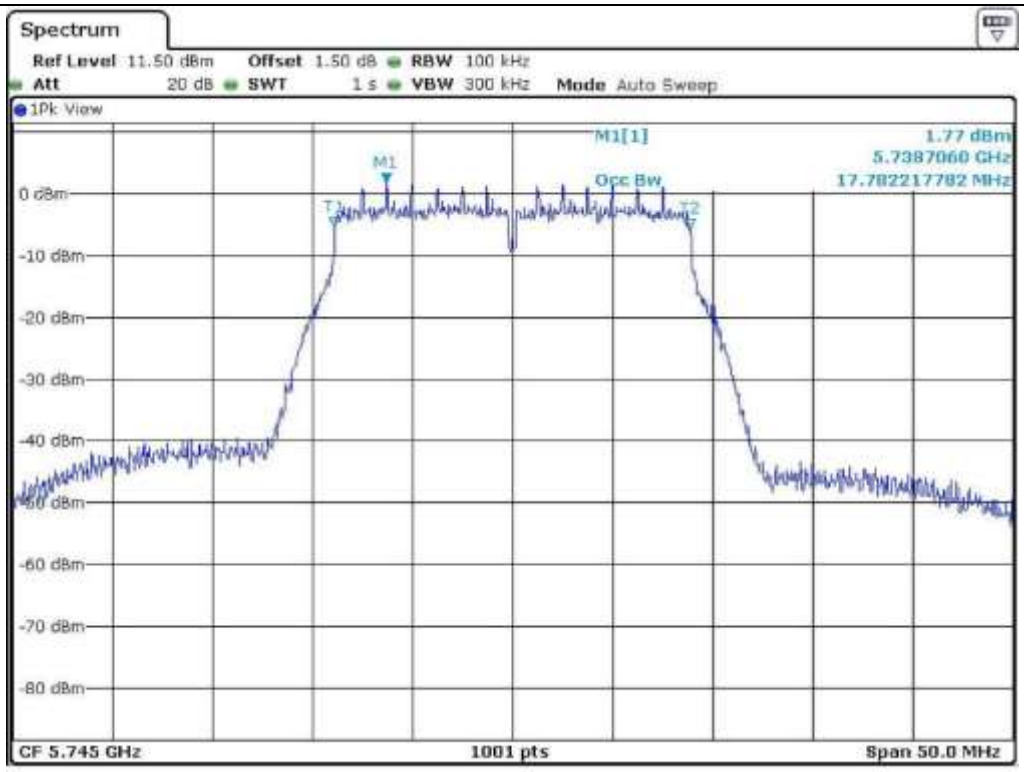
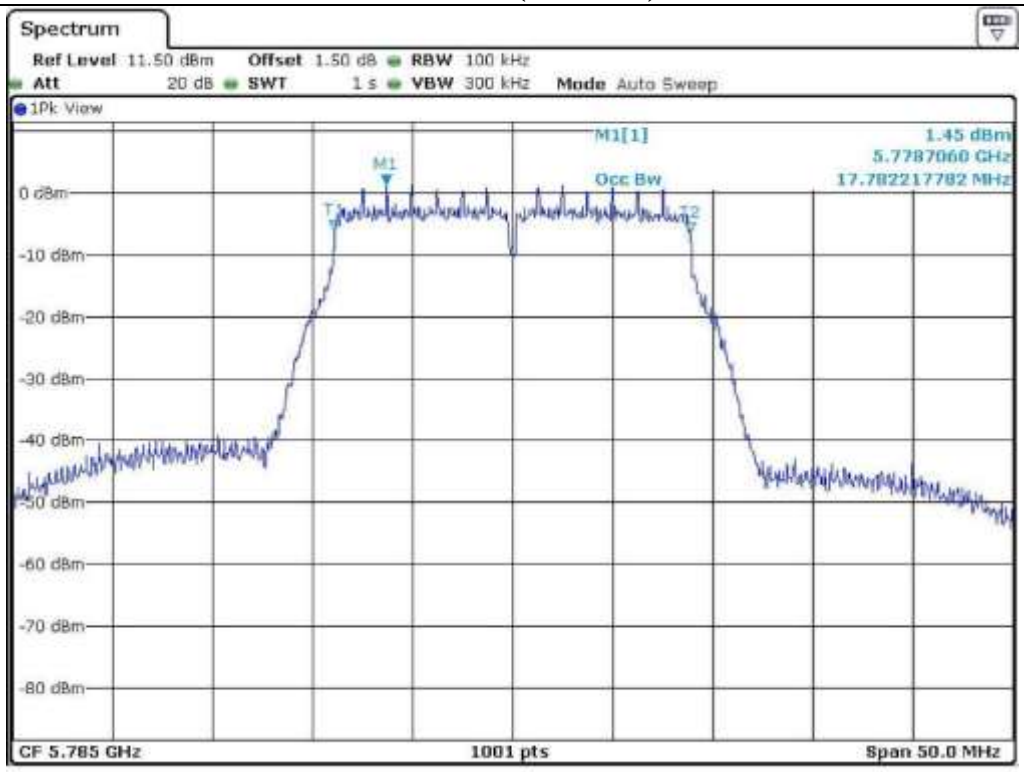


High Channel (5 700 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)

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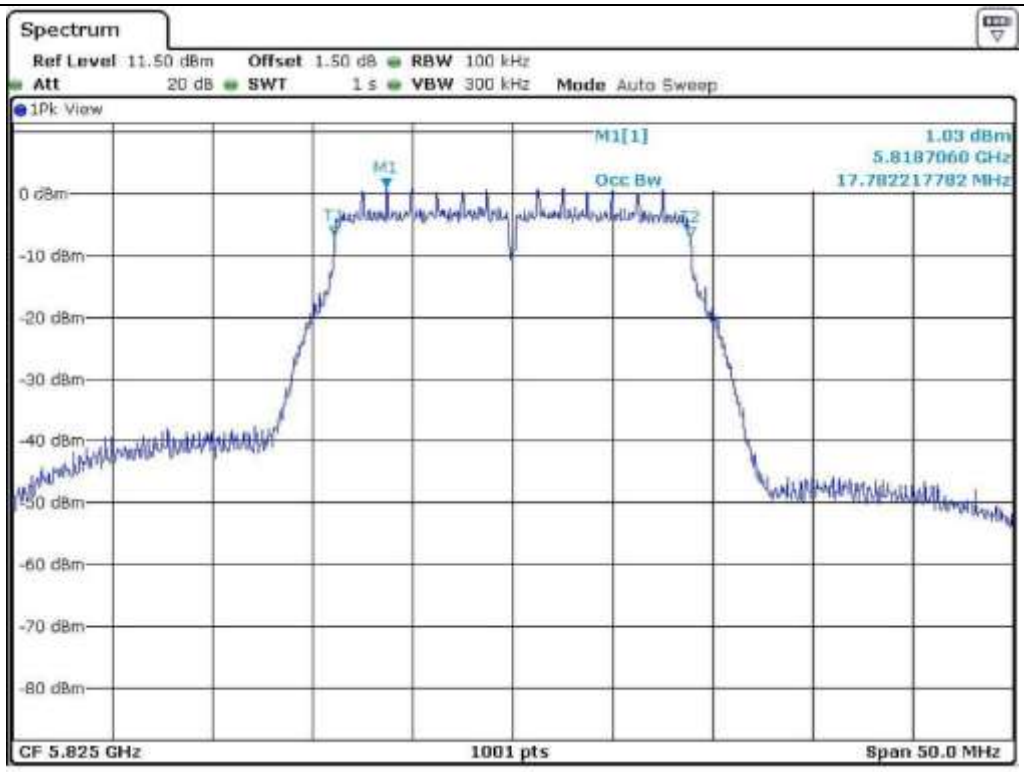

High Channel (5 825 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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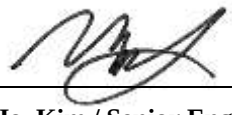
7.7.2 Test data for Antenna 1

-. Test Date : June 16, 2015

-. Test Result : Pass

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5 150 ~ 5 250	Low	5 180	21.28	17.73
	Middle	5 200	21.28	17.73
	High	5 240	21.28	17.73
5 250 ~ 5 350	Low	5 260	21.28	17.73
	Middle	5 300	21.28	17.73
	High	5 320	21.28	17.73
5 470 ~ 5 725	Low	5 500	21.38	17.78
	Middle	5 600	21.38	17.78
	High	5 700	21.38	17.78
5 725 ~ 5 850	Low	5 745	21.28	17.78
	Middle	5 785	21.28	17.78
	High	5 825	21.28	17.78



Tested by: Tae-Ho, Kim / Senior Engineer

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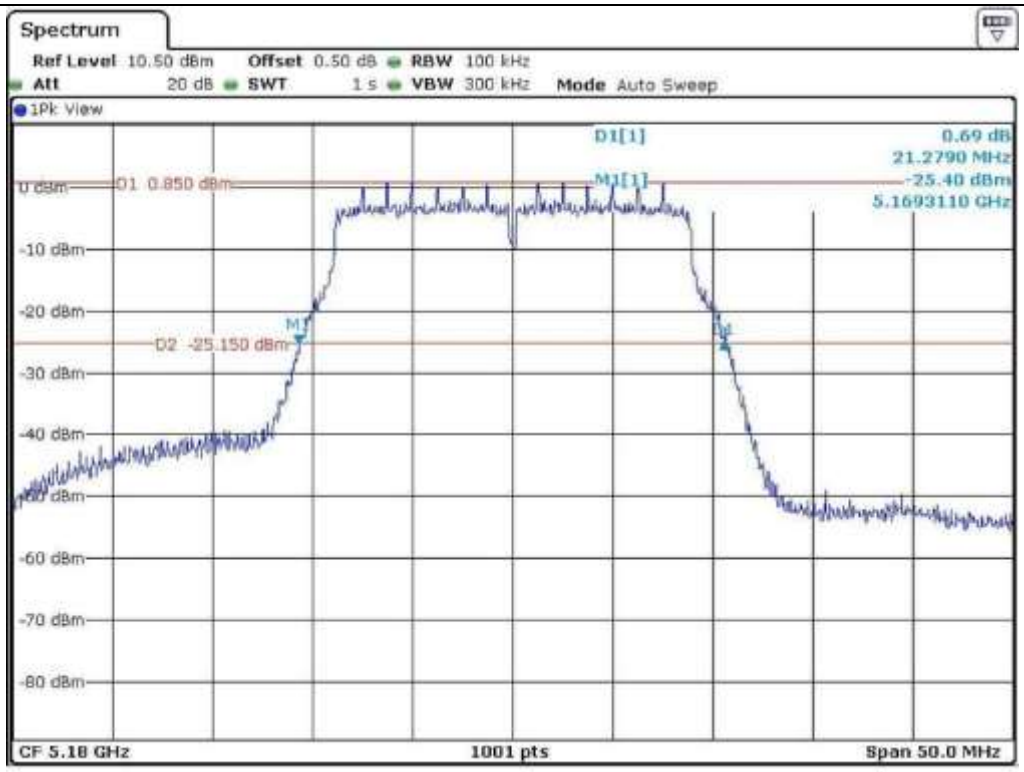
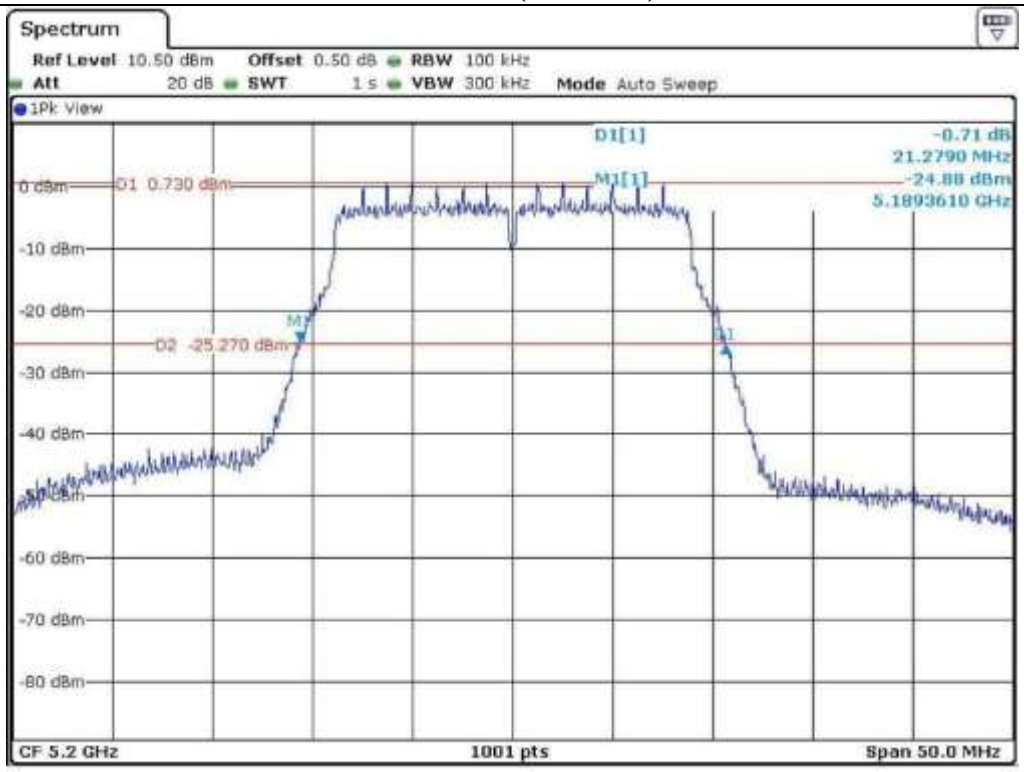


Low Channel (5 180 MHz)



Middle Channel (5 200 MHz)

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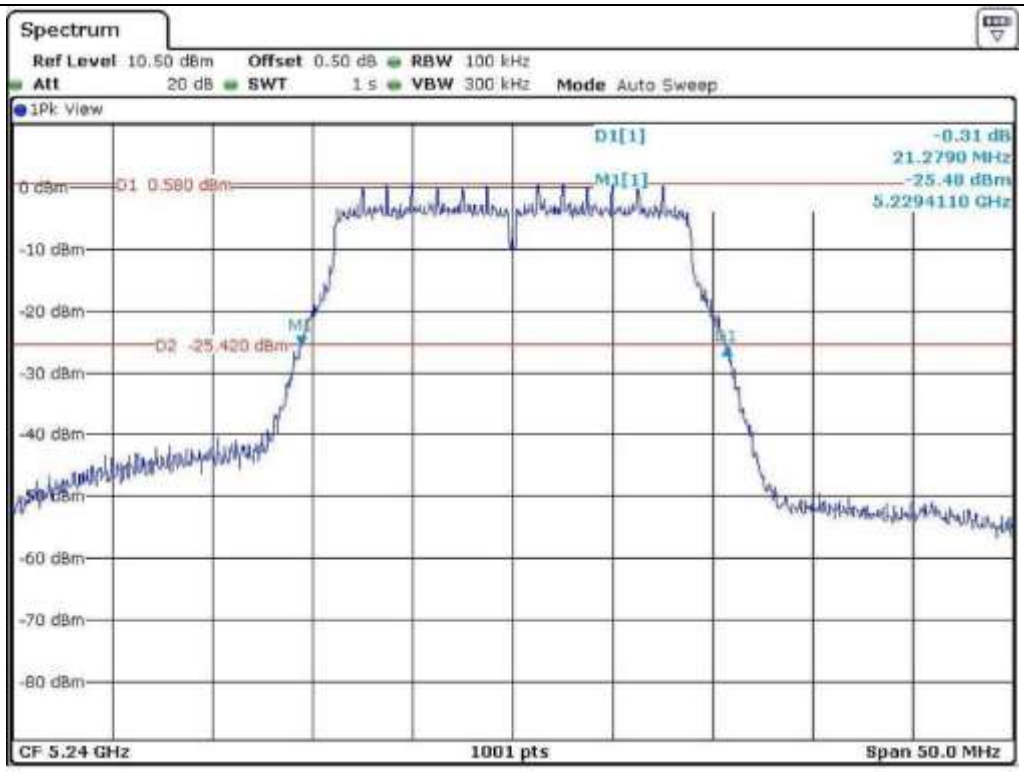

High Channel (5 240 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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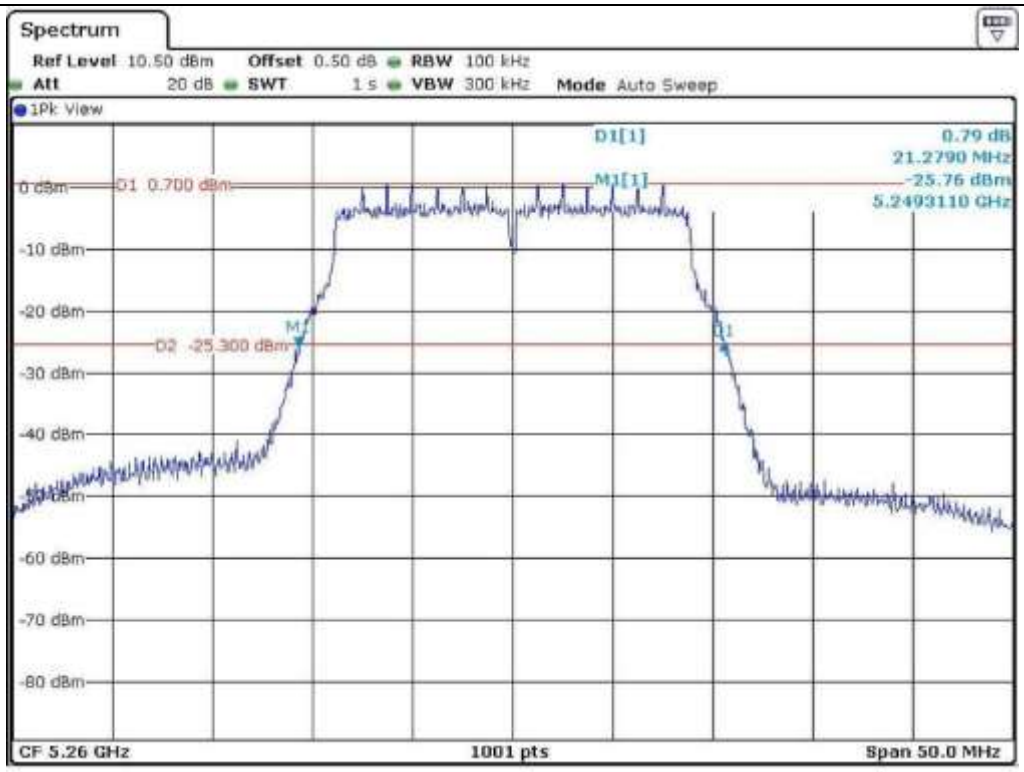
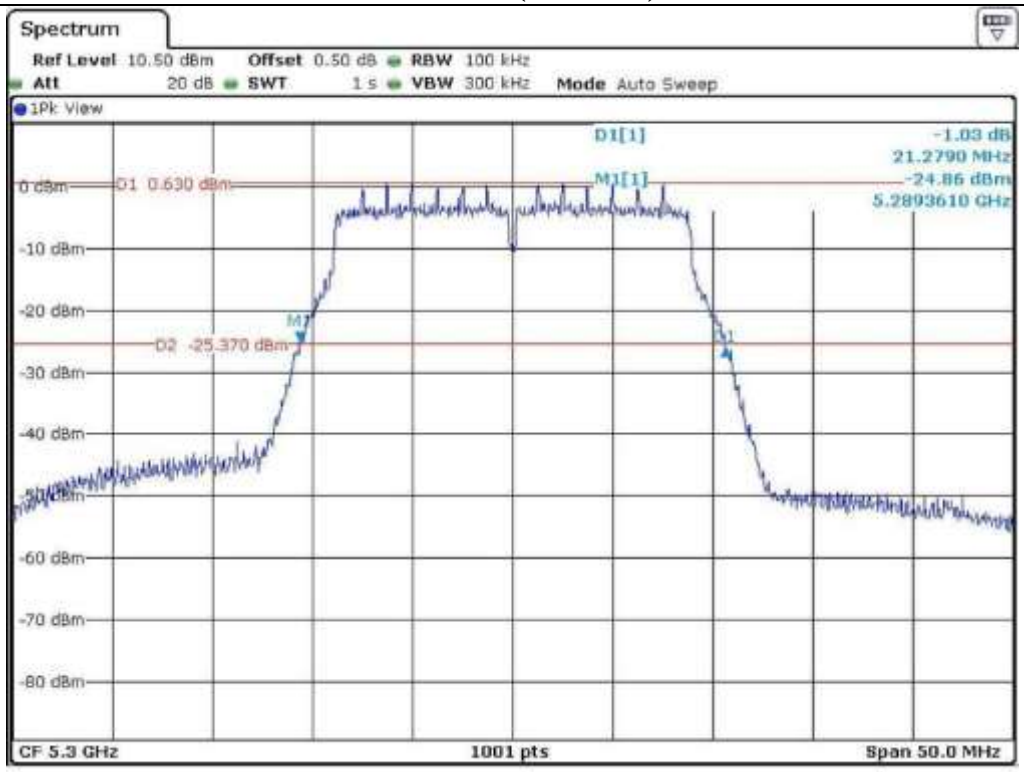


Low Channel (5 260 MHz)



Middle Channel (5 300 MHz)

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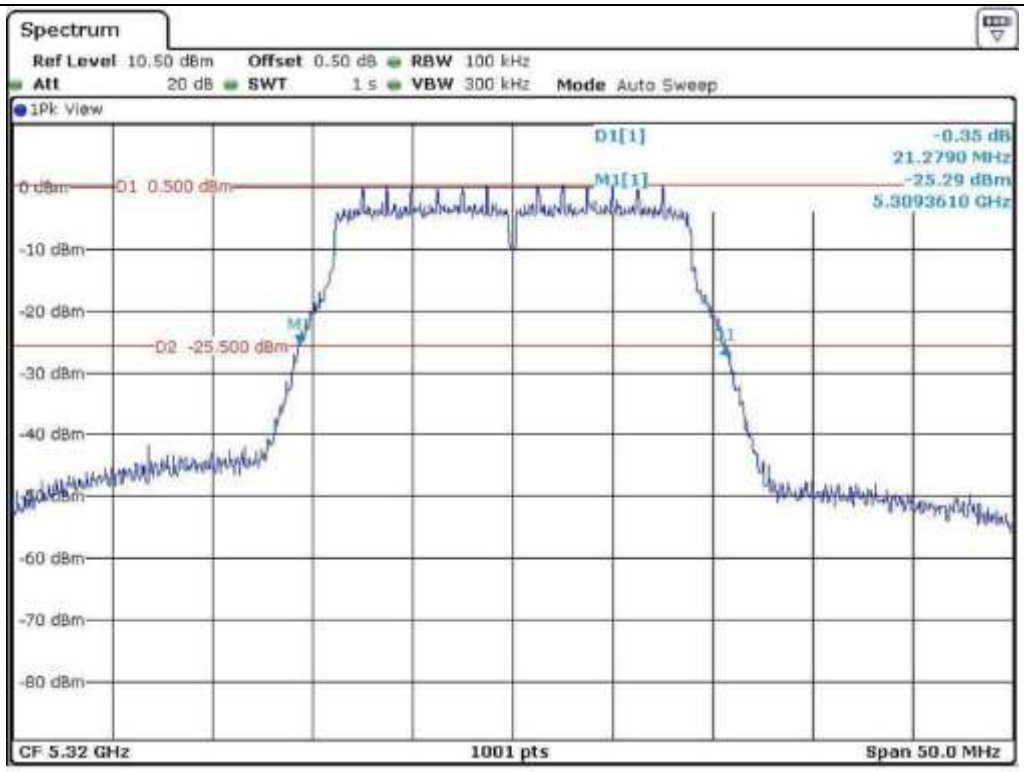

High Channel (5 320 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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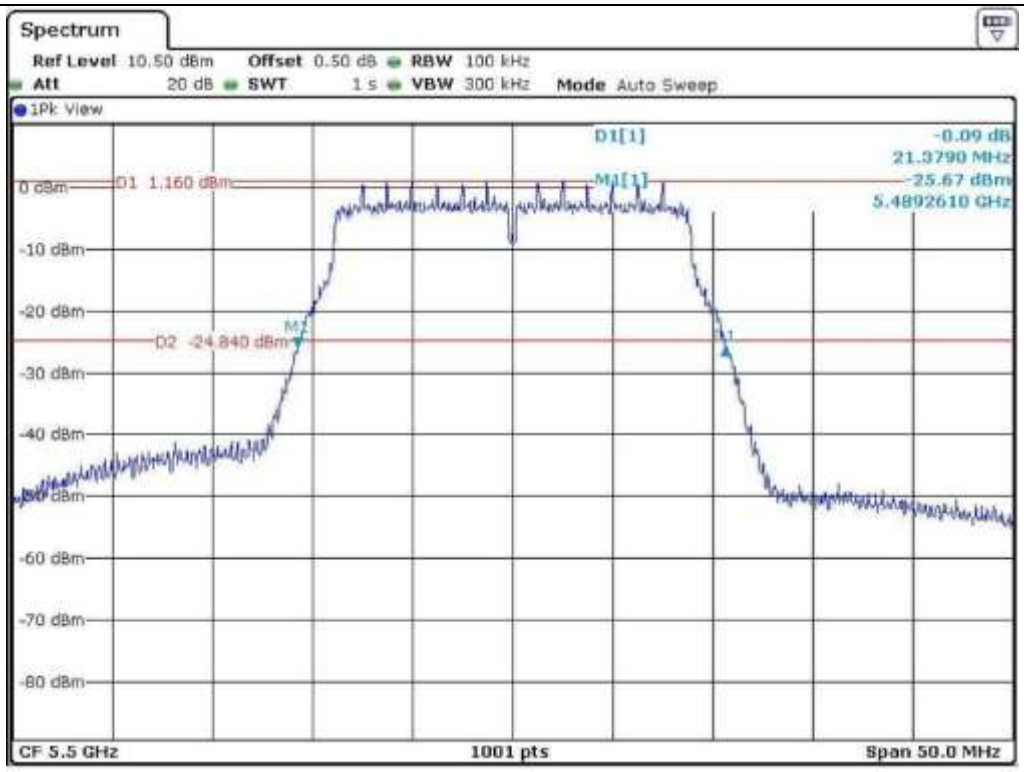
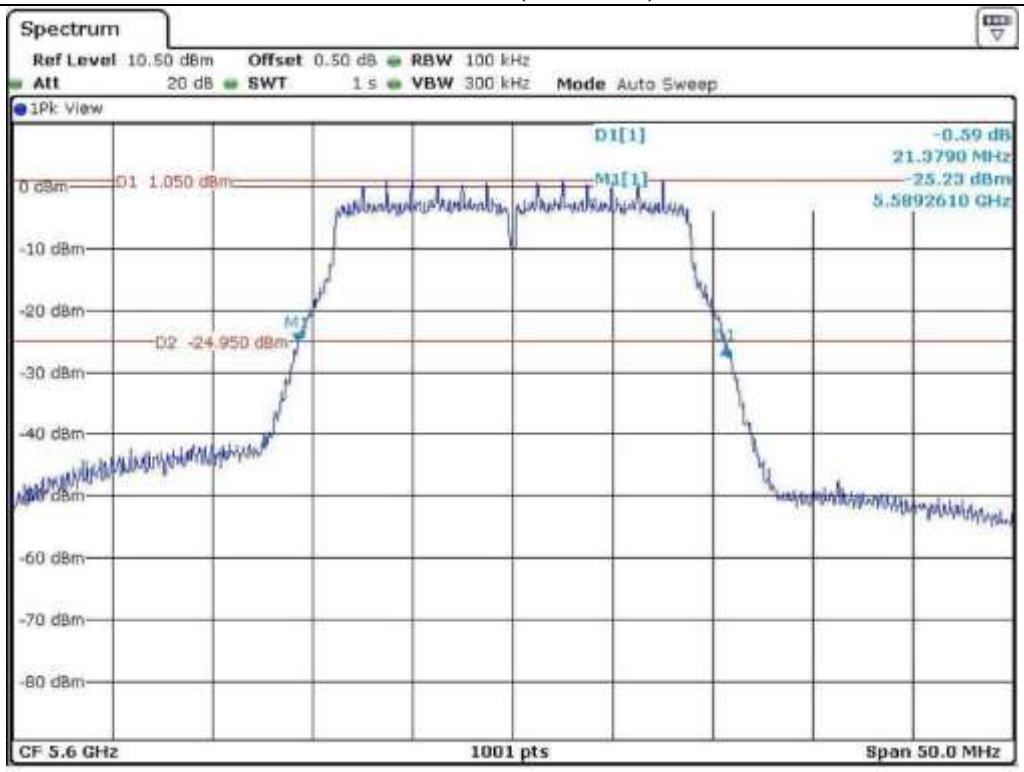


Low Channel (5 500 MHz)



Middle Channel (5 600 MHz)

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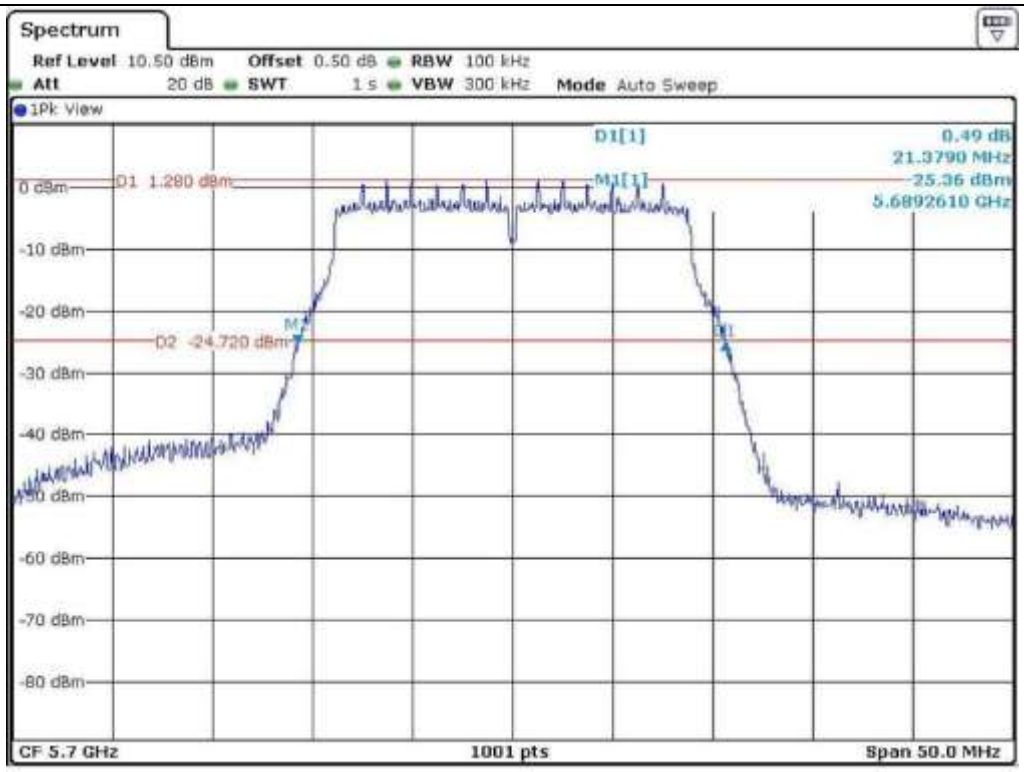

High Channel (5 700 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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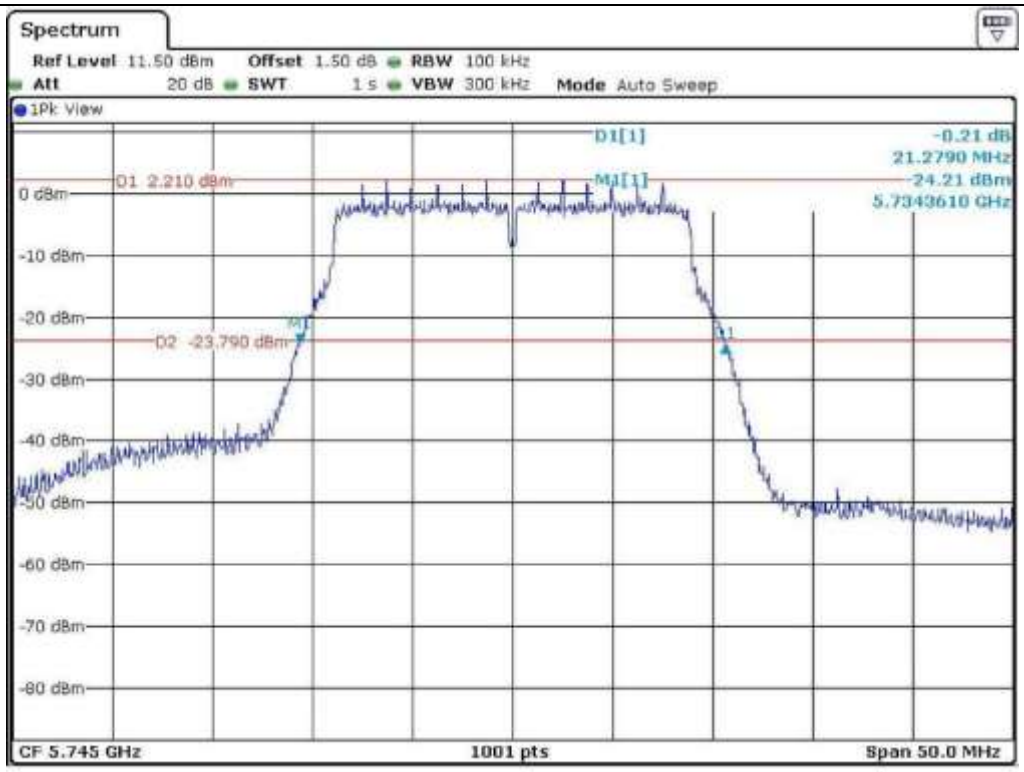
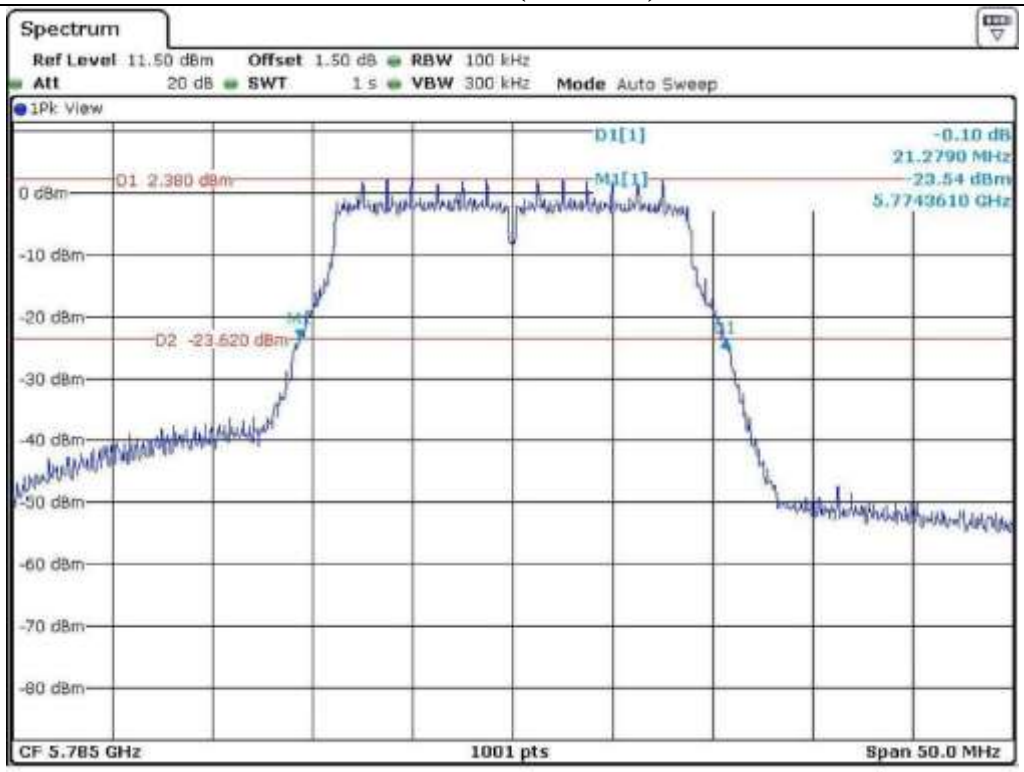


Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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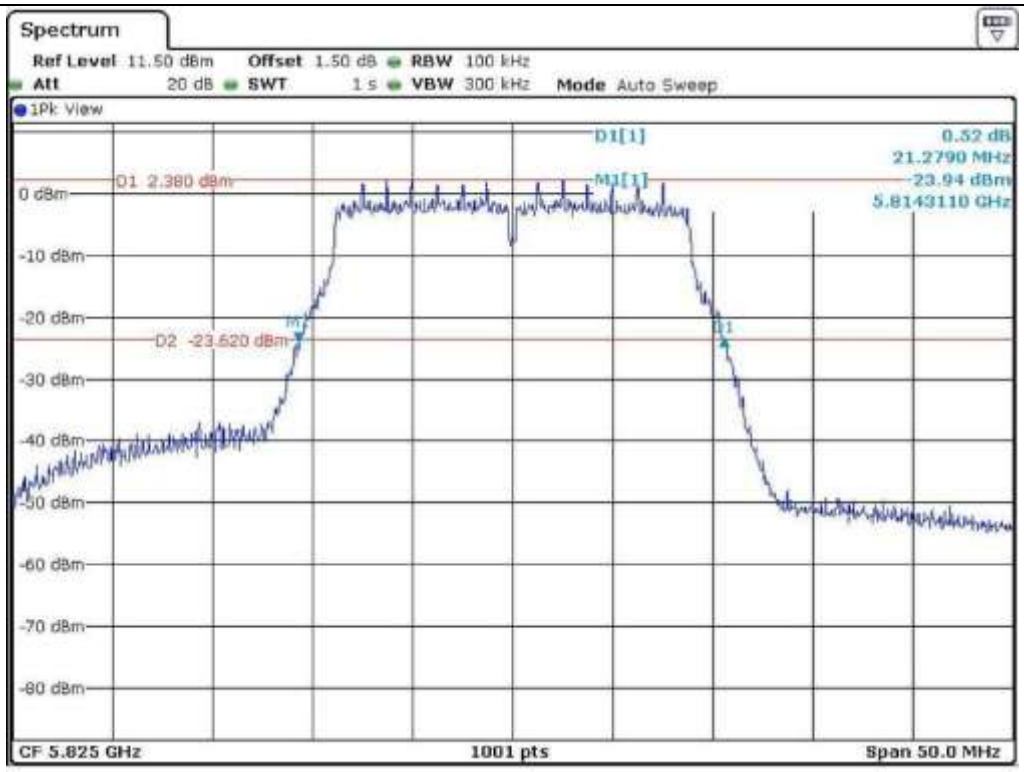

High Channel (5 825 MHz)

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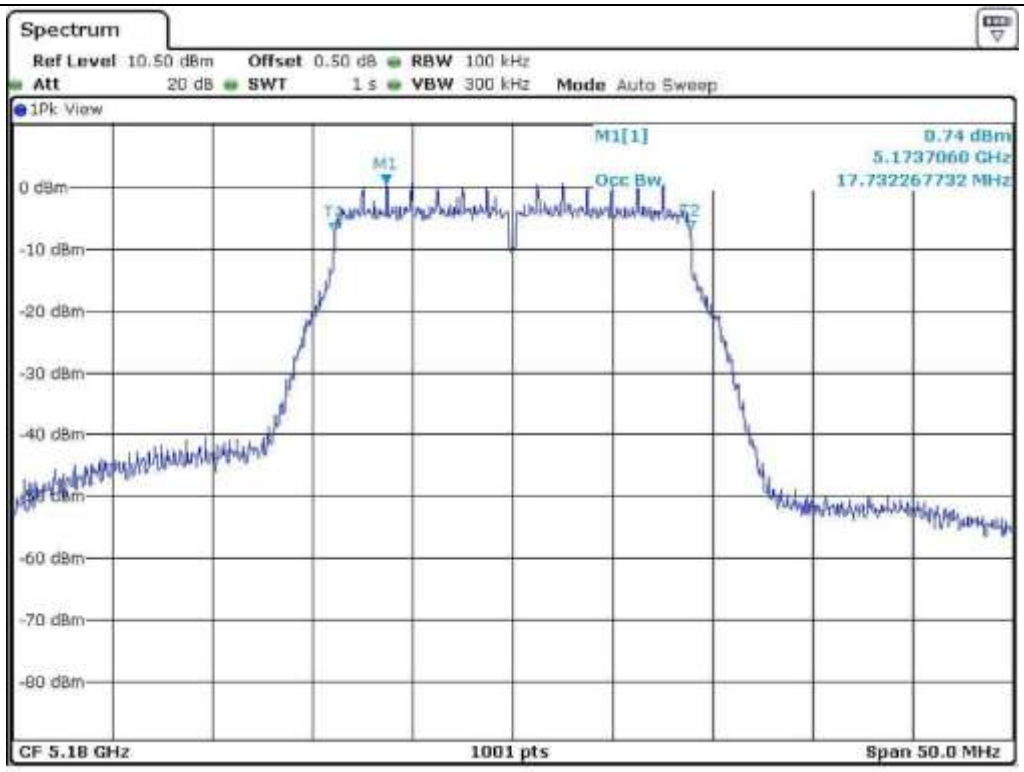
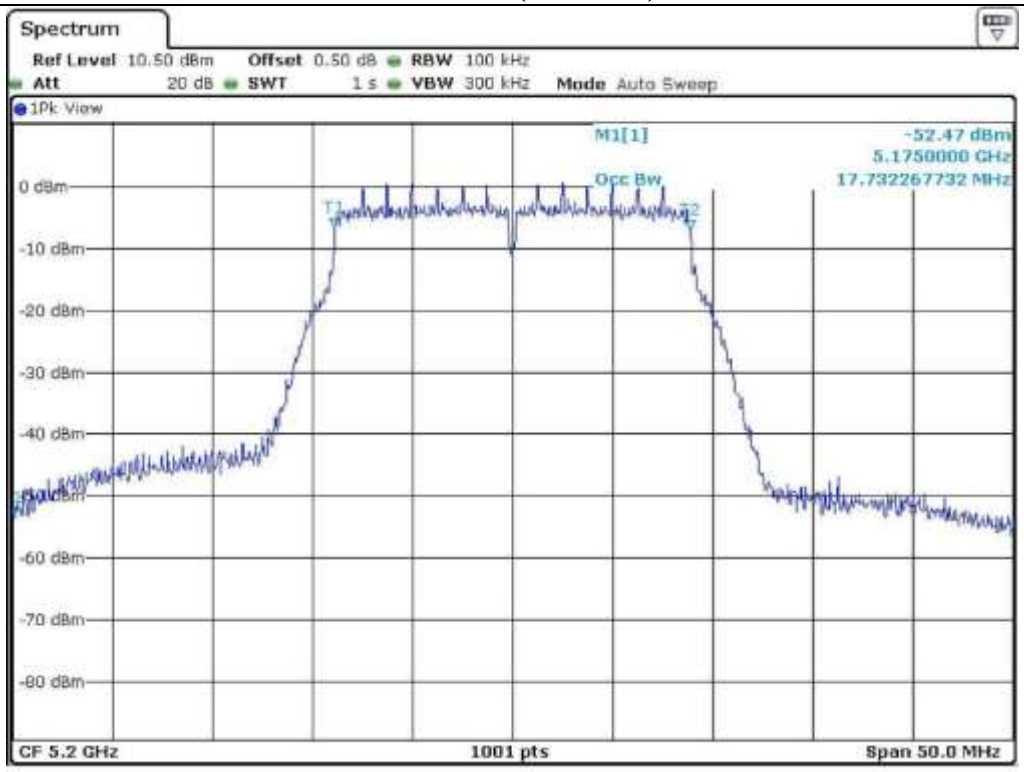


Low Channel (5 180 MHz)



Middle Channel (5 200 MHz)

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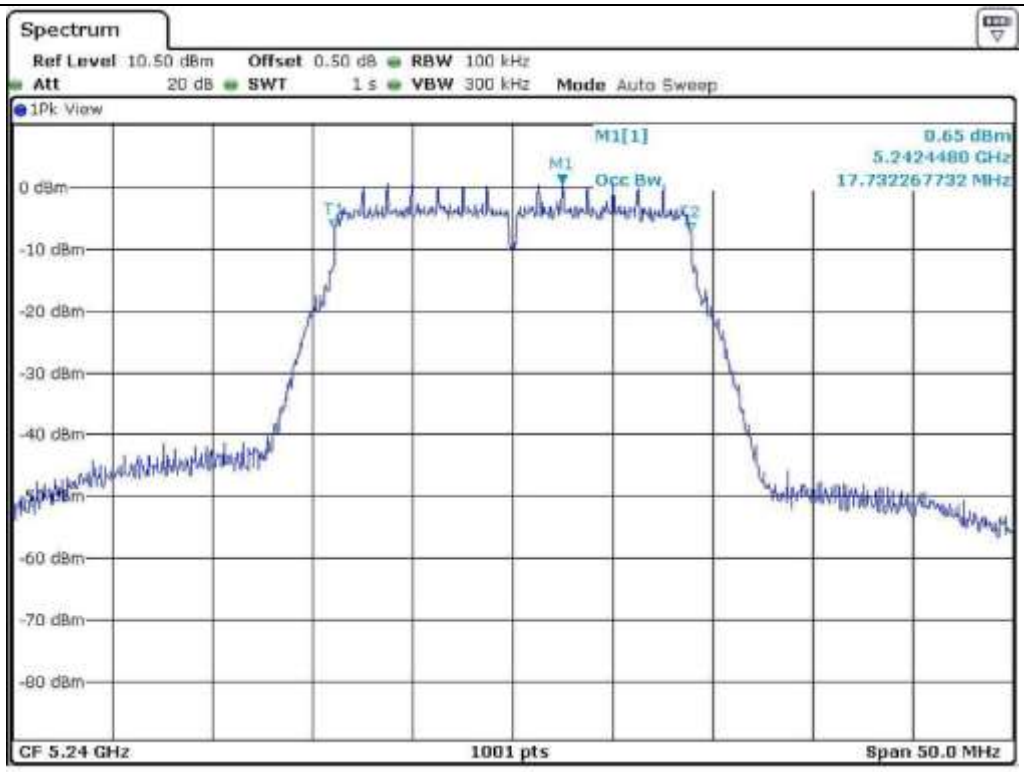
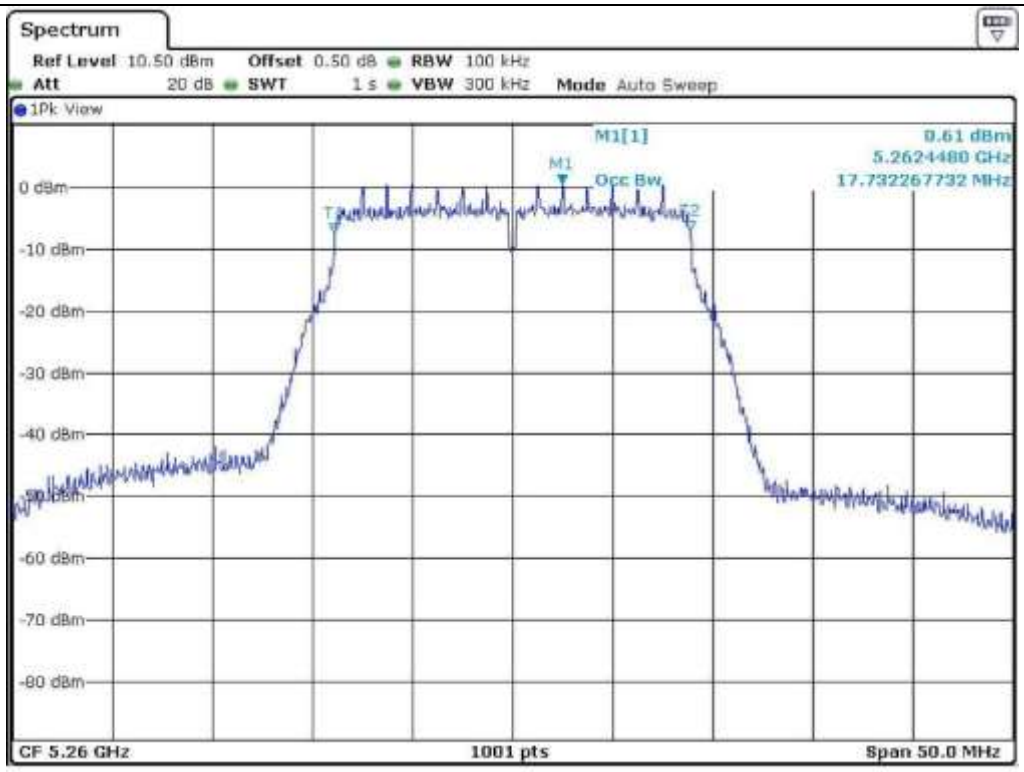
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

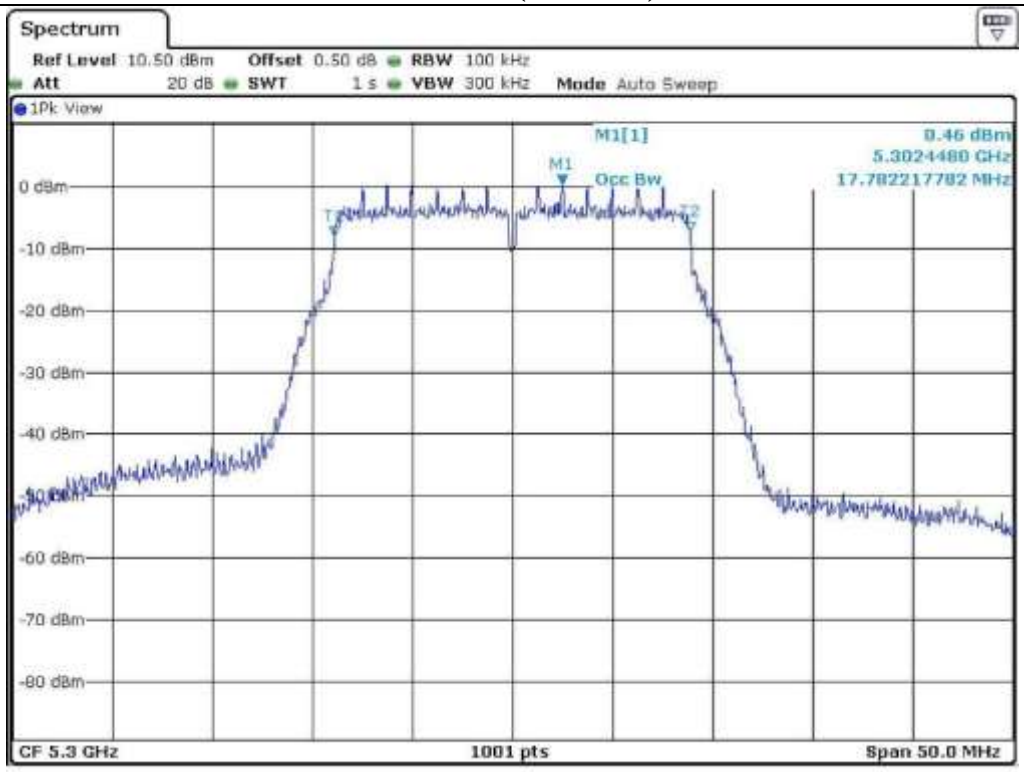


High Channel (5 240 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 260 MHz)



Middle Channel (5 300 MHz)

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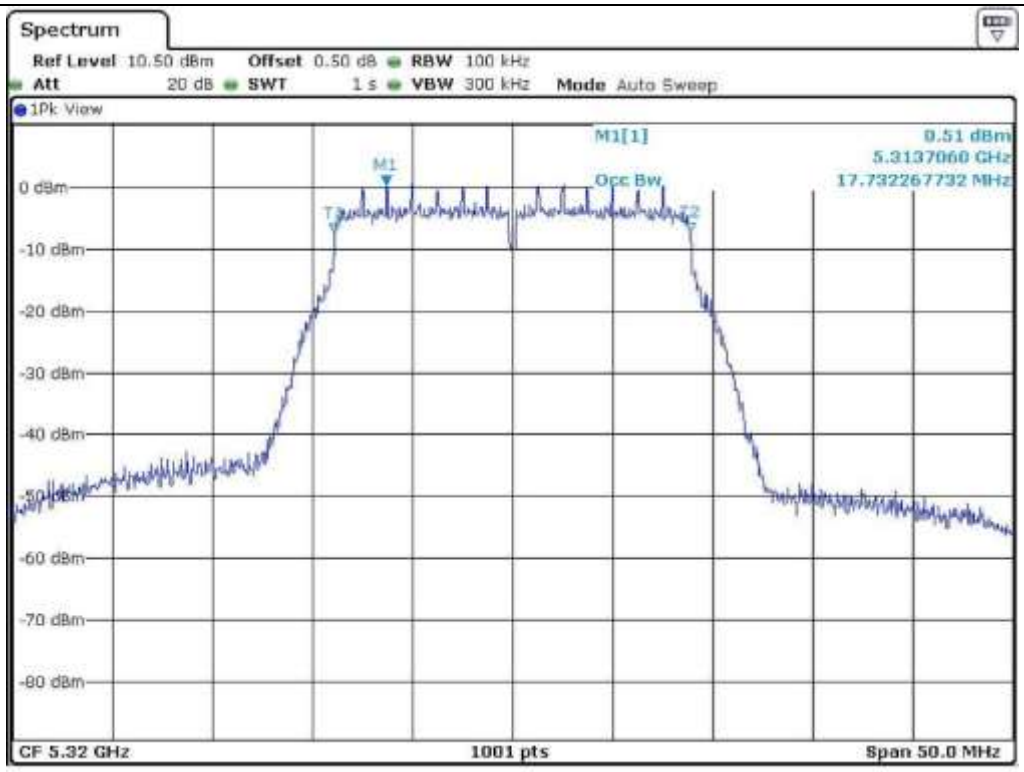
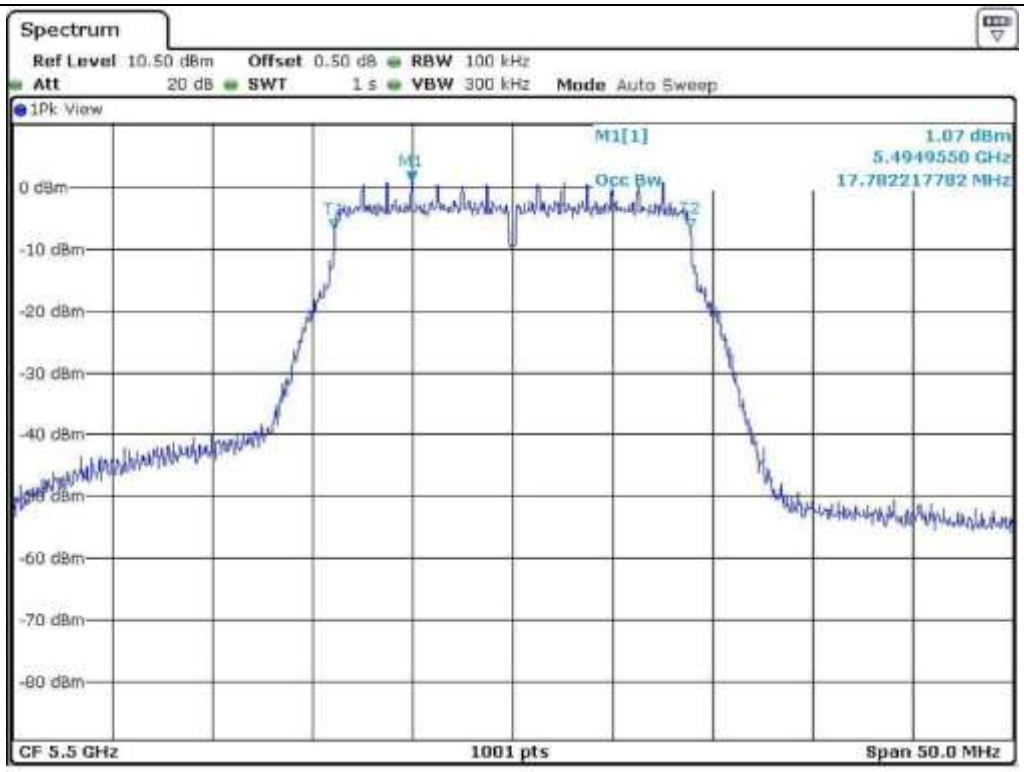
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

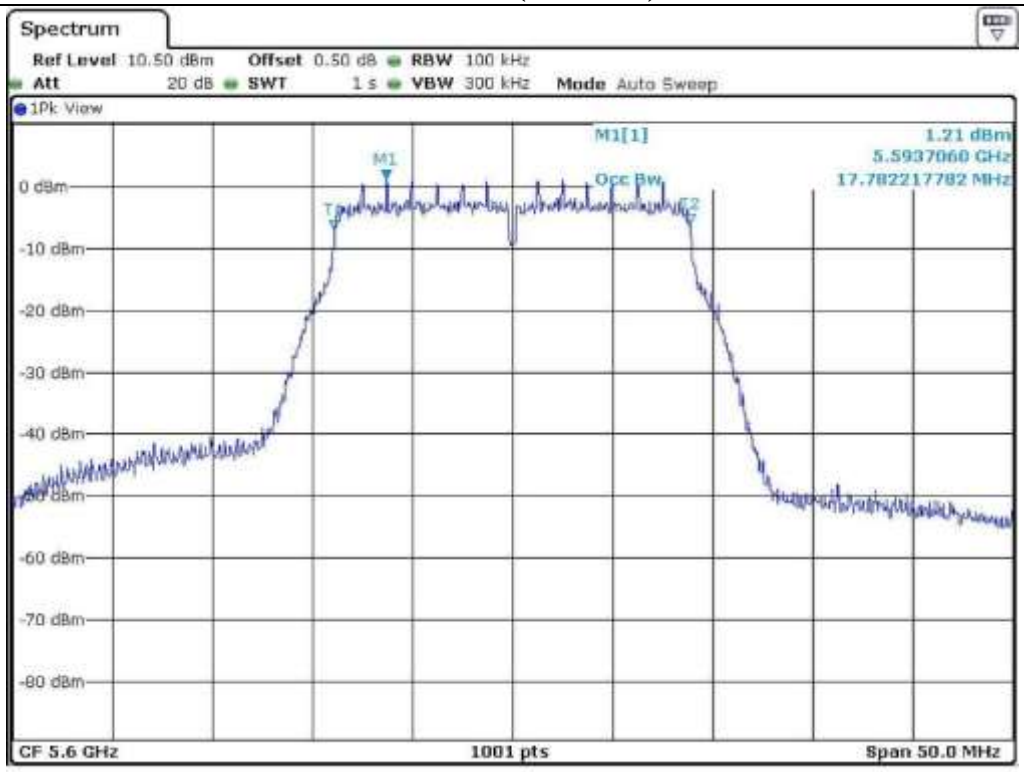


High Channel (5 320 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel (5 500 MHz)



Middle Channel (5 600 MHz)

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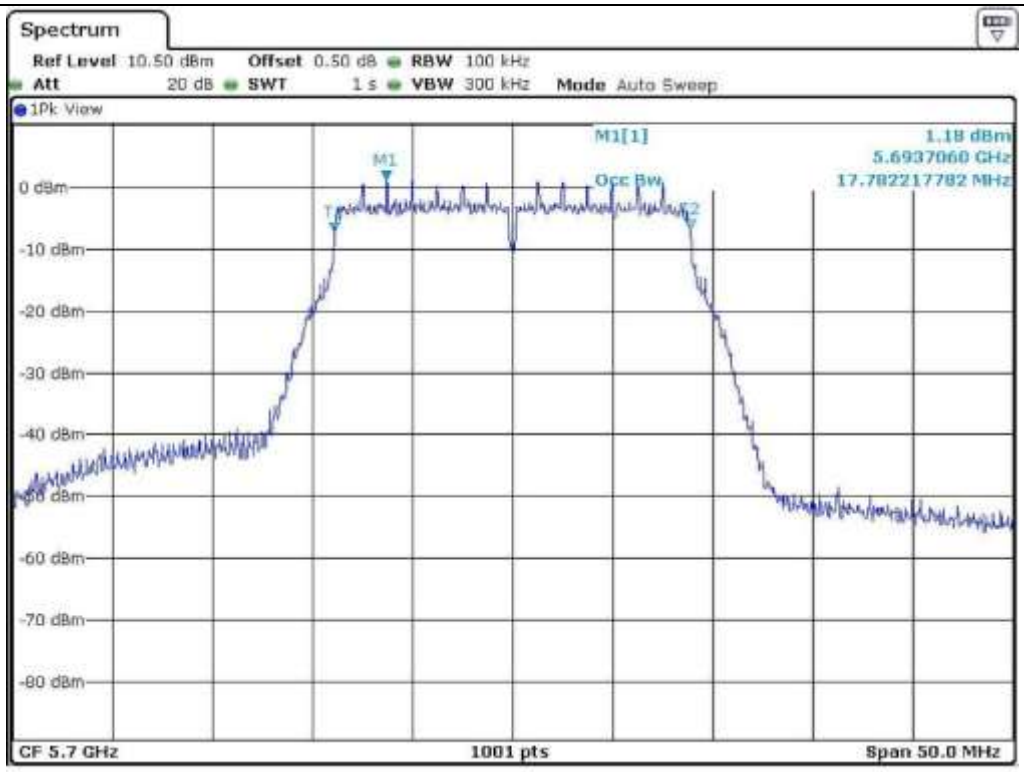

High Channel (5 700 MHz)

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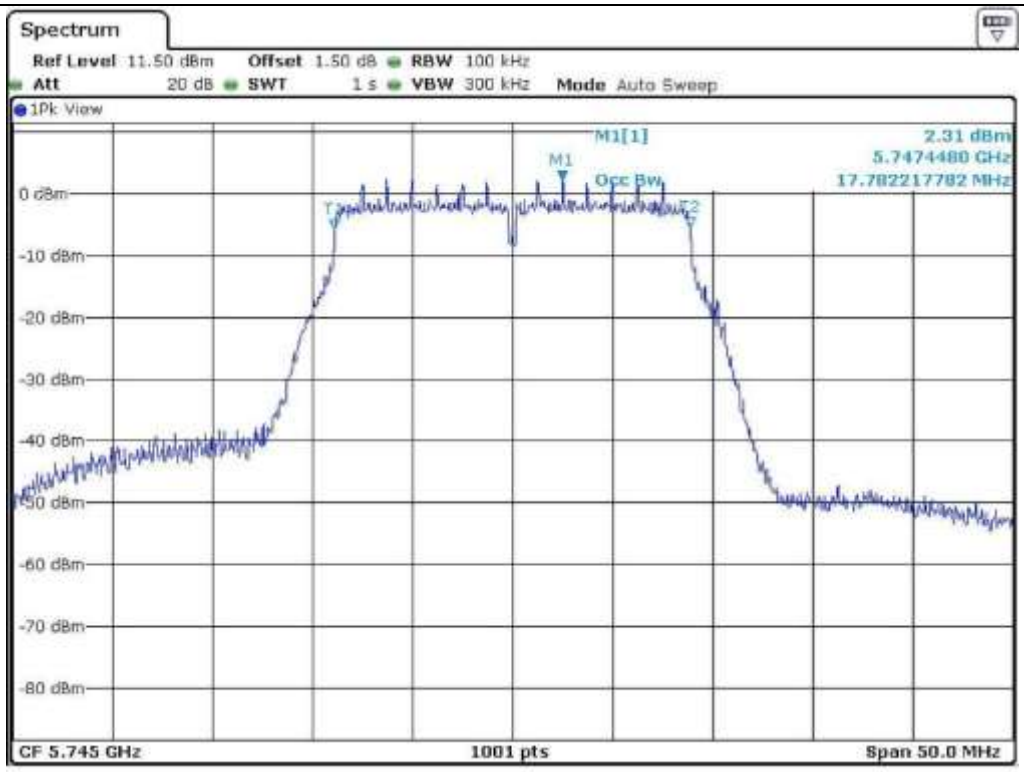
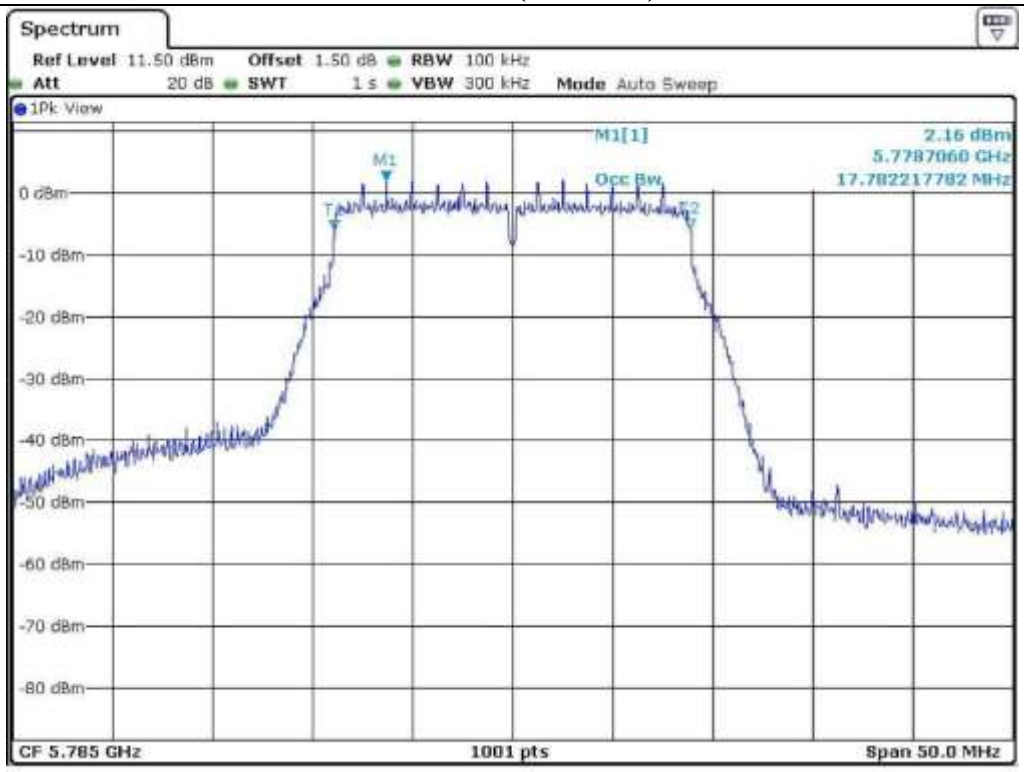


Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)

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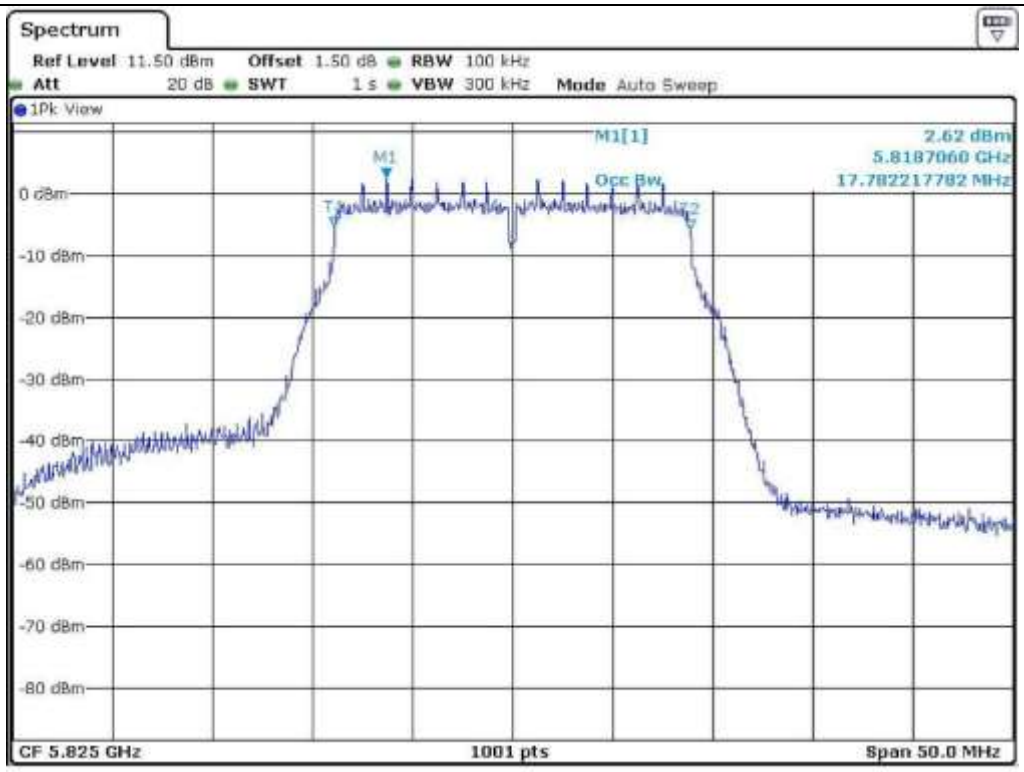

High Channel (5 825 MHz)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)
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