

Albert Broadcast Services, Inc.
PO Box 11836
Charlotte, NC 28220-1836
(704) 507-4987

October 24, 2020

Alex Snipe
Glory Communications, Inc

Re: NRSC Emissions Reports for W241DJ & W264DF

Dear Alex:

I am pleased to enclose your NRSC Equipment Performance Measurements for W241DJ & W264DF, certifying compliance with the Federal Communications Commission rules and regulations regarding emission requirements.

This document or a copy thereof should be placed in the station public access file for each station. It has been our pleasure to provide this service for you. If we can be of further service, please do not hesitate to contact me directly.

Cordially,

Stu Albert, President

FM Diplexer Proof & NRSC Measurements of
W264DF & W241DJ
Columbia, SC

10/1/2020

Albert Broadcast Services, Inc.

Overview

At the time of this writing, Glory Communications, Inc. holds FCC Construction Permits and/or License for translator stations W241DJ (Ch241D/96.1 MHz) and W264DF (Ch264D/100.7 MHz). These two stations are operating into a diplexer filter arrangement and then fed to a common antenna on a tower located at 1747 Cushman Dr, Columbia, SC 29204, a shared site with WZRB television.

This report certifies that the as-built operation, depicted in Figure 1 was measured for compliance with NRSC standards for occupied bandwidth emissions, as well as for certifying that the Microwave Filter Company-provided Diplexer/filter arrangement was installed correctly and performing per the manufacturer's specifications.

In summary, both stations, W241DJ and W264DF were found to be in compliance with all applicable FCC rules and NRSC recommended practices when operated separately and/or combined through the diplexer/filter system.

W241DJ (CH241D) 96.1 MHz Occupied Bandwidth Measurements 10/1/2020

The measurements contained in this report were obtained with the use of an Anritsu Spectrum Analyzer, Model MS2721B serial number 747076 by Albert Broadcast Services, Inc., Charlotte, NC on October 1, 2020.

The measurements were taken at a distance of under 1km from the antenna utilizing a standard FM dipole receive antenna at a suitable height above ground.

All measurements were taken with a 1 KHz resolution bandwidth at 3 MHz video bandwidth with a measurement span to allow for accurate averaging of modulation peaks filling the occupied bandwidth, except where noted.

The requirements for FM transmission system occupied bandwidth limitations are outlined in FCC Rules and Regulations, paragraph 73.317. Station W241DJ (CH241D), met the requirements of this rule at the time of this measurement.

Emissions between 120 kHz and 240 kHz were found to be below 25 dB. The Occupied Bandwidth emission products within this range totaled no more than 157.894 KHz. Emissions between 240 kHz and 600 kHz were measured under 35 dB and emissions greater than 600 kHz removed from the un-modulated carrier were greater than 80 dB down from the carrier reference.

**W264DF (CH264D) 100.7 MHz
Occupied Bandwidth Measurements
10/1/2020**

The measurements contained in this report were obtained with the use of an Anritsu Spectrum Analyzer, Model MS2721B serial number 747076 by Albert Broadcast Services, Inc., Charlotte, NC on October 1, 2020.

The measurements were taken at a distance of under 1km from the antenna utilizing a standard FM dipole receive antenna at a suitable height above ground.

All measurements were taken with a 1 KHz resolution bandwidth at 3 MHz video bandwidth with a measurement span to allow for accurate averaging of modulation peaks filling the occupied bandwidth, except where noted.

The requirements for FM transmission system occupied bandwidth limitations are outlined in FCC Rules and Regulations, paragraph 73.317. Station W264DF (CH264D), met the requirements of this rule at the time of this measurement.

Emissions between 120 kHz and 240 kHz were found to be below 25 dB. The Occupied Bandwidth emission products within this range totaled no more than 147.005 KHz. Emissions between 240 kHz and 600 kHz were measured under 35 dB and emissions greater than 600 kHz removed from the un-modulated carrier were greater than 80 dB down from the carrier reference.

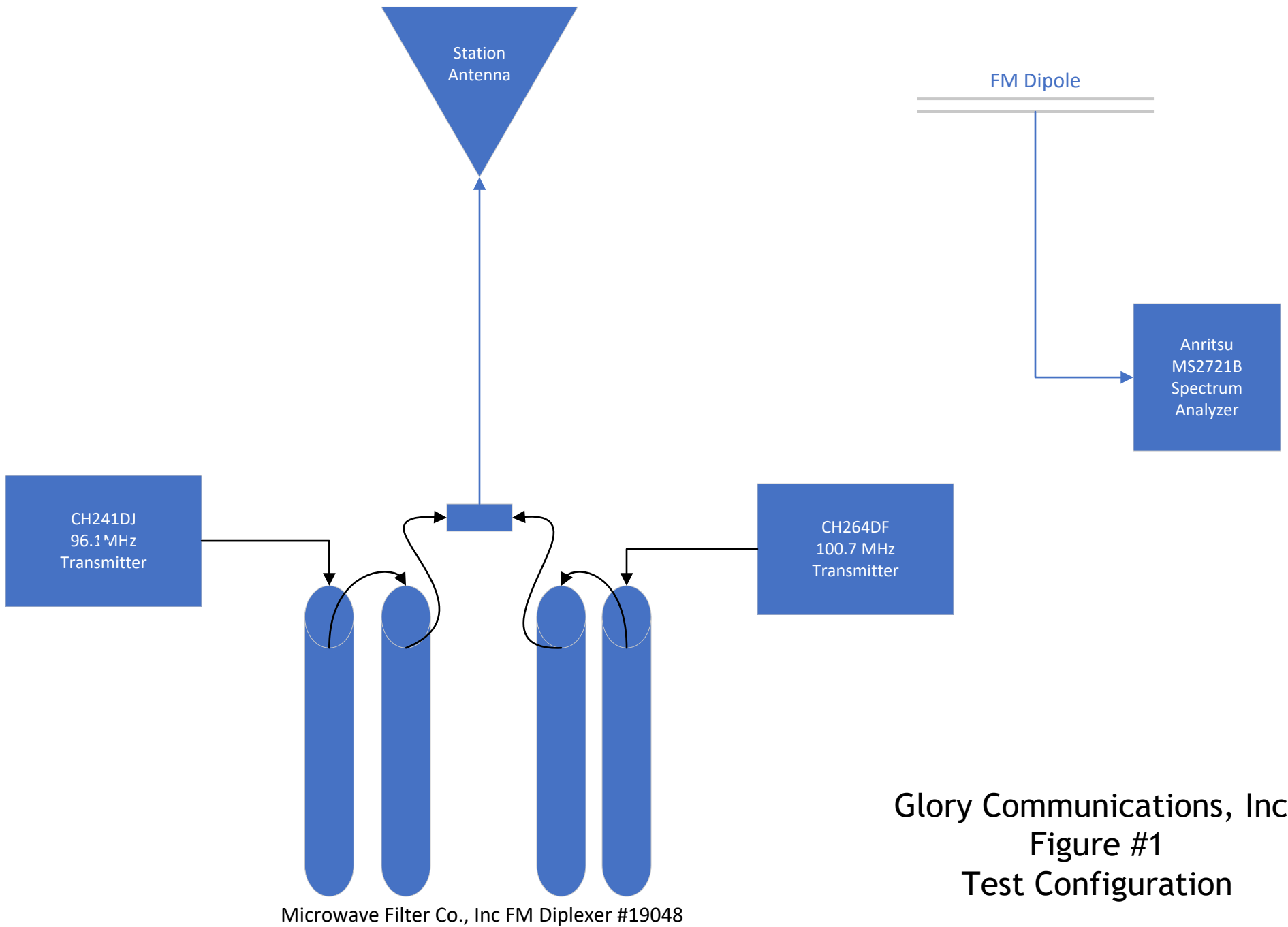
Combined Filter Measurements 10/1/2020

The swept response measurements of the provided diplexer filter were completed and supplied by Microwave Filter Company, Inc. and are made a part of this report.

An RF sweep of the spectrum sufficient to show the sum and difference frequencies for W241DJ and W264DF was made with both stations operating at their permitted RF amplitudes, connected to the combiner/filter arrangement utilizing the station antenna as the combiner load. The measurements were taken at a distance of under 1km from the antenna utilizing a standard FM dipole receive antenna at a suitable height above ground.

No out of tolerance spurious emissions were noted in the entire RF spectrum, indicating that the stations operate satisfactorily with this diplexer arrangement.

Steward R. Albert, President
Albert Broadcast Services, Inc.

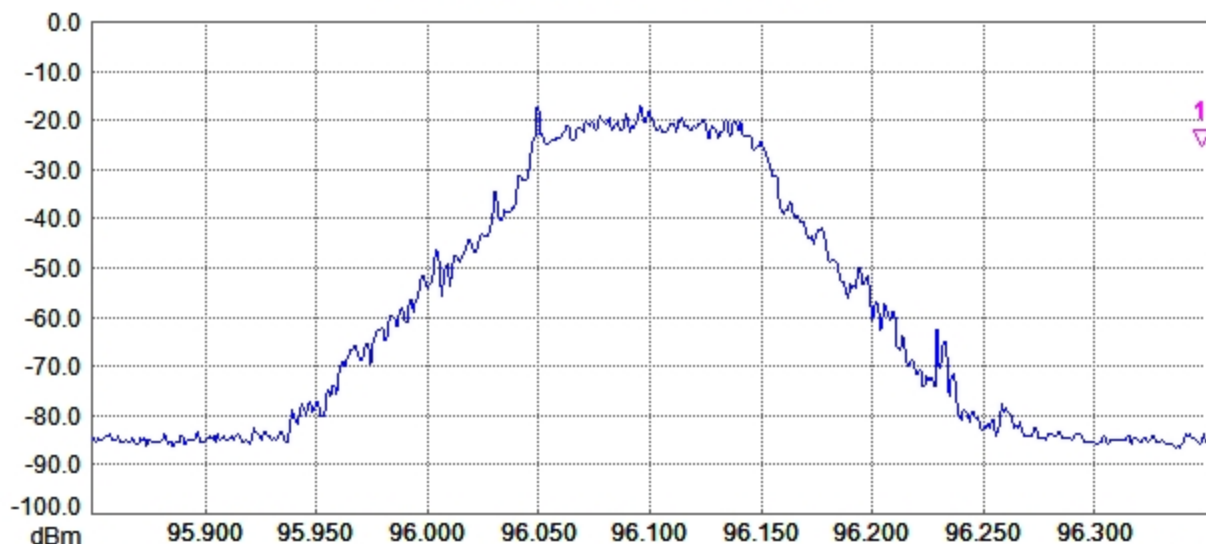


Glory Communications, Inc.
Figure #1
Test Configuration

Spectrum Analyzer Data

w241dj_1 (10/1/2020 5:38:47 PM)

Spectrum Analyzer



■ A: Center Freq: 96.100 000 MHz
 B: Center Freq: 107.900 000 MHz

Span: 500.000 kHz
 Span: 2.000 000 MHz

Occ BW dBc Down

dBc Down: 25

Occ BW: 157.895 kHz

Measured %: 99.93

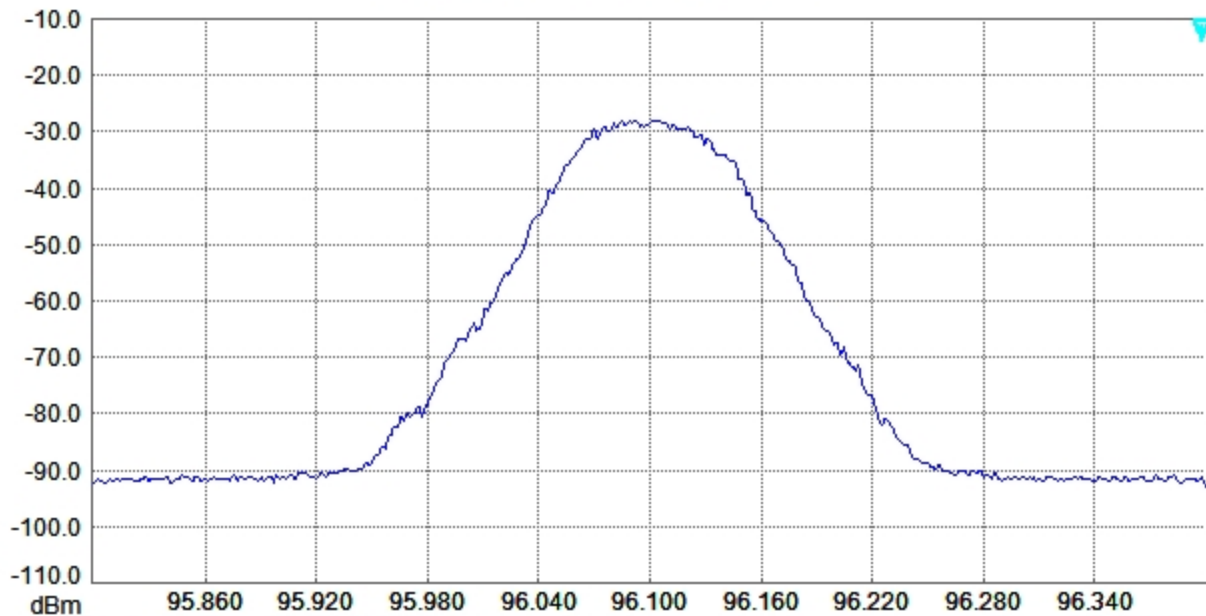
Measurement Parameters

		Stop Frequency	96.350 000 MHz
Trace Mode	Max Hold	Frequency Span	500.000 000 kHz
Preamp	OFF	Reference Level	0.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0 dB	Serial Number	747076
Input Attenuation	20.0 dB	Base Ver.	V5.71
RBW	1.0 kHz	App Ver.	V5.73
VBW	300.0 Hz	Model	MS2721B
Detection	Peak	Options	25, 27
Center Frequency	96.100 000 MHz	Date	10/1/2020 5:38:47 PM
Start Frequency	95.850 000 MHz	Device Name	

Spectrum Analyzer Data

w241dj_2 (10/1/2020 5:40:35 PM)

Spectrum Analyzer



■ A: Center Freq: 96.100 000 MHz
■ B: Center Freq: 107.900 000 MHz
■ C: Center Freq: 107.900 000 MHz

■ Span: 600.000 kHz
■ Span: 2.000 000 MHz
■ Span: 2.000 000 MHz

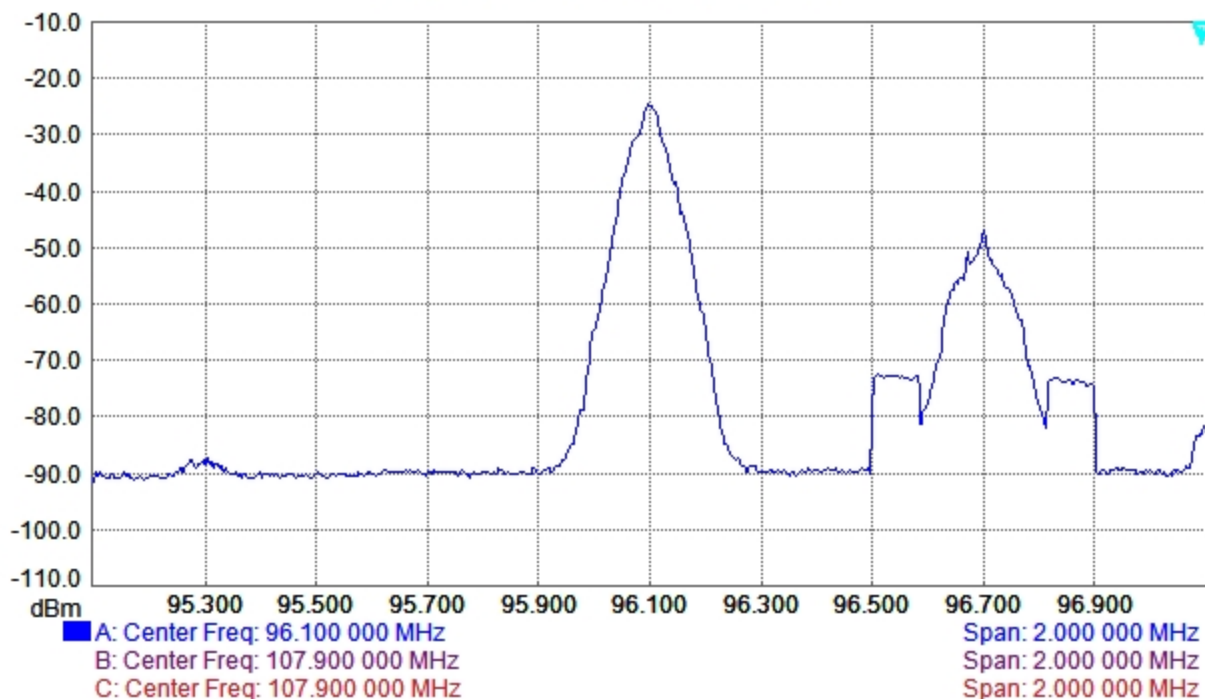
Measurement Parameters

Trace A data:Trace Average	50	Stop Frequency	96.400 000 MHz
Trace Mode	Average	Frequency Span	600.000 000 kHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0 dB	Serial Number	747076
Input Attenuation	10.0 dB	Base Ver.	V5.71
RBW	1.0 kHz	App Ver.	V5.73
VBW	3.0 MHz	Model	MS2721B
Detection	Peak	Options	25, 27
Center Frequency	96.100 000 MHz	Date	10/1/2020 5:40:35 PM
Start Frequency	95.800 000 MHz	Device Name	

Spectrum Analyzer Data

w241dj_3 (10/1/2020 5:42:26 PM)

Spectrum Analyzer



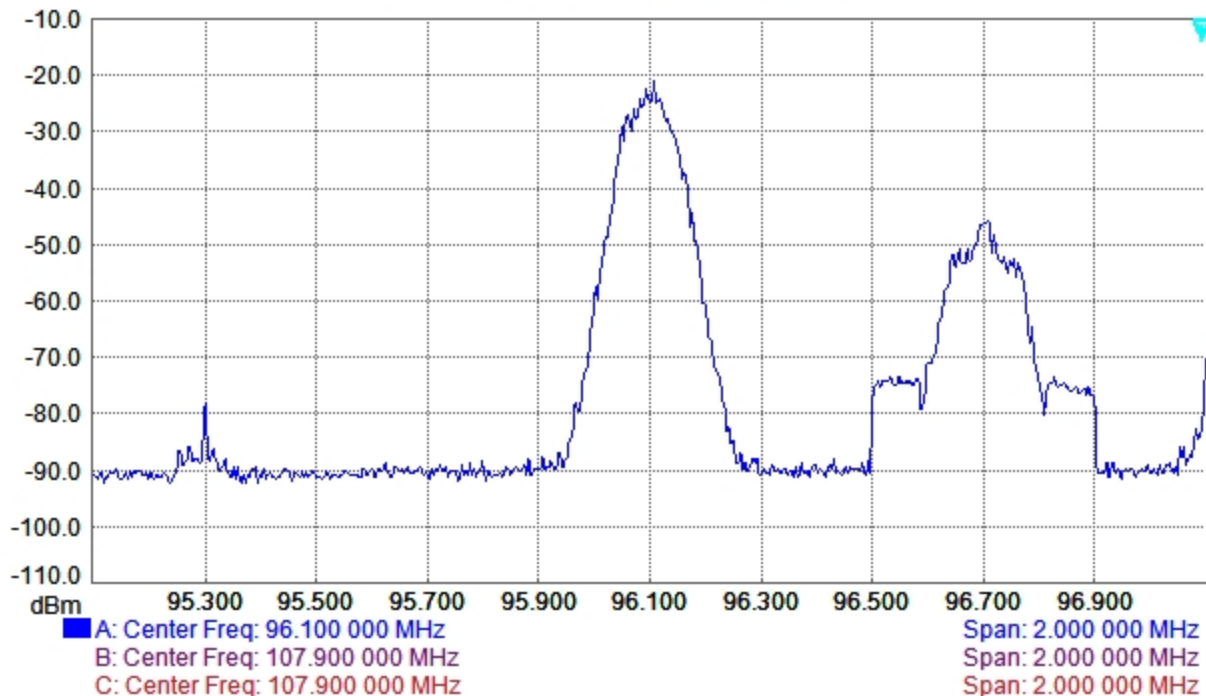
Measurement Parameters

Trace A data:Trace Average	50	Stop Frequency	97.100 000 MHz
Trace Mode	Average	Frequency Span	2.000 000 MHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0 dB	Serial Number	747076
Input Attenuation	10.0 dB	Base Ver.	V5.71
RBW	1.0 kHz	App Ver.	V5.73
VBW	3.0 MHz	Model	MS2721B
Detection	Peak	Options	25, 27
Center Frequency	96.100 000 MHz	Date	10/1/2020 5:42:26 PM
Start Frequency	95.100 000 MHz	Device Name	

Spectrum Analyzer Data

w241dj_4 (10/1/2020 5:44:26 PM)

Spectrum Analyzer

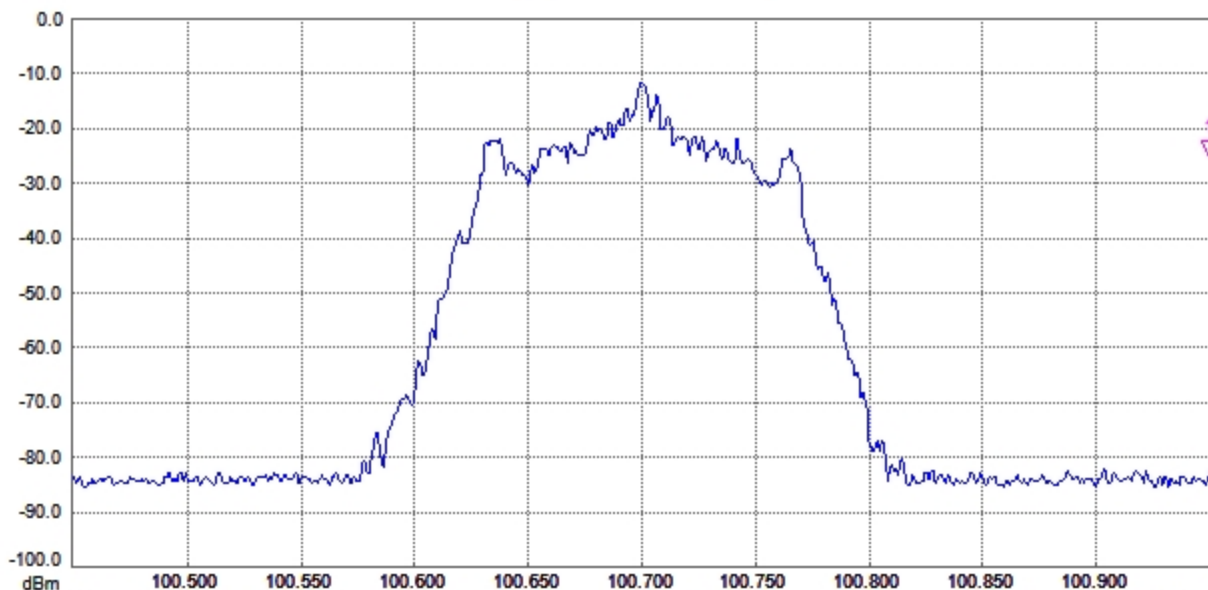


Measurement Parameters

		Stop Frequency	97.100 000 MHz
Trace Mode	Max Hold	Frequency Span	2.000 000 MHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0 dB	Serial Number	747076
Input Attenuation	10.0 dB	Base Ver.	V5.71
RBW	300.0 Hz	App Ver.	V5.73
VBW	3.0 MHz	Model	MS2721B
Detection	Peak	Options	25, 27
Center Frequency	96.100 000 MHz	Date	10/1/2020 5:44:26 PM
Start Frequency	95.100 000 MHz	Device Name	

Spectrum Analyzer Data
w264df_1 (10/1/2020 5:53:06 PM)

Spectrum Analyzer



Occ BW dBc Down

dBc Down: 25

Occ BW: 147.005 kHz

Measured %: 99.86

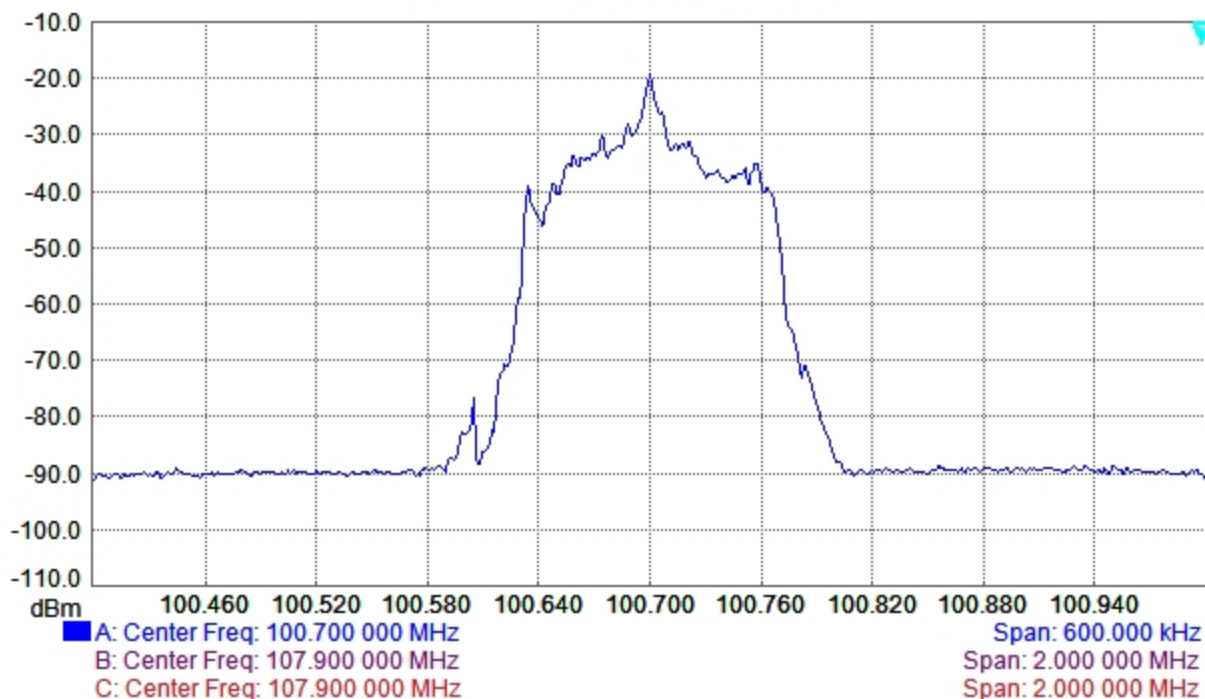
Measurement Parameters

Trace Mode	Max Hold	Stop Frequency	100.950 000 MHz
Preamp	OFF	Frequency Span	500.000 000 kHz
Min Sweep Time	0.001 S	Reference Level	0.000 dBm
Reference Level Offset	0 dB	Scale	10.0 dB/div
Input Attenuation	20.0 dB	Serial Number	747076
RBW	1.0 kHz	Base Ver.	V5.71
VBW	300.0 Hz	App Ver.	V5.73
Detection	Peak	Model	MS2721B
Center Frequency	100.700 000 MHz	Options	25, 27
Start Frequency	100.450 000 MHz	Date	10/1/2020 5:53:06 PM
		Device Name	

Spectrum Analyzer Data

w264df_2 (10/1/2020 5:51:17 PM)

Spectrum Analyzer



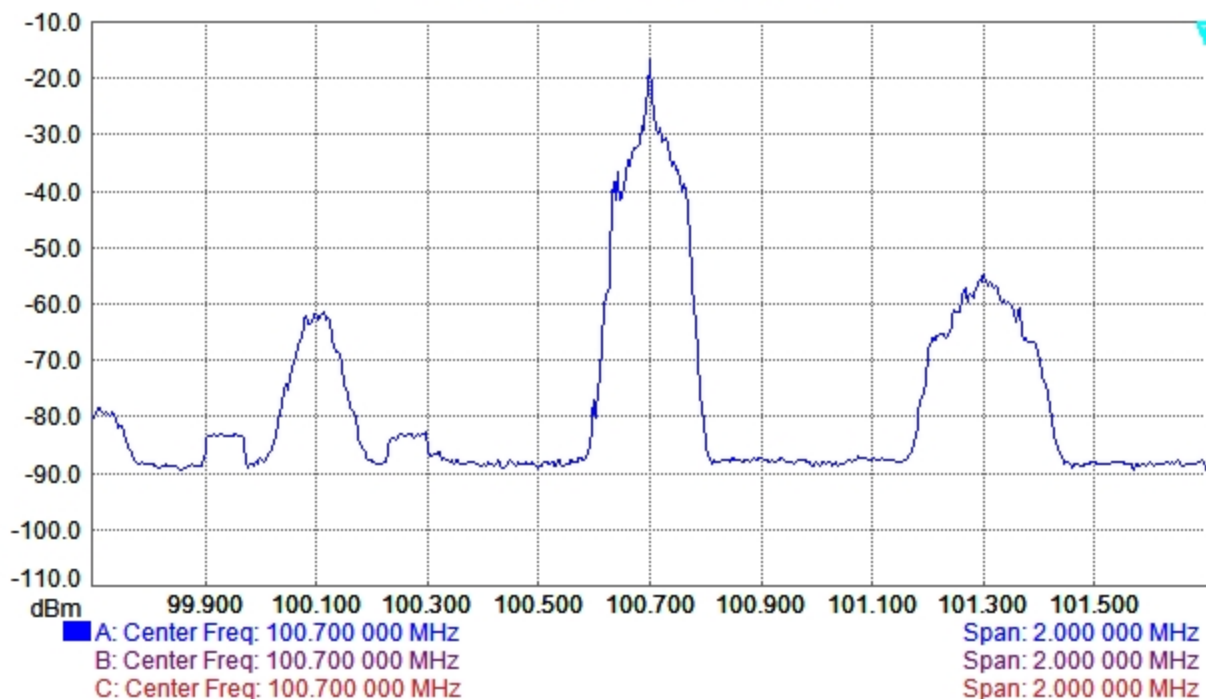
Measurement Parameters

Trace A data:Trace Average	50	Stop Frequency	101.000 000 MHz
Trace Mode	Average	Frequency Span	600.000 000 kHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0 dB	Serial Number	747076
Input Attenuation	10.0 dB	Base Ver.	V5.71
RBW	1.0 kHz	App Ver.	V5.73
VBW	3.0 MHz	Model	MS2721B
Detection	Peak	Options	25, 27
Center Frequency	100.700 000 MHz	Date	10/1/2020 5:51:17 PM
Start Frequency	100.400 000 MHz	Device Name	

Spectrum Analyzer Data

w264df_3 (10/1/2020 5:49:40 PM)

Spectrum Analyzer



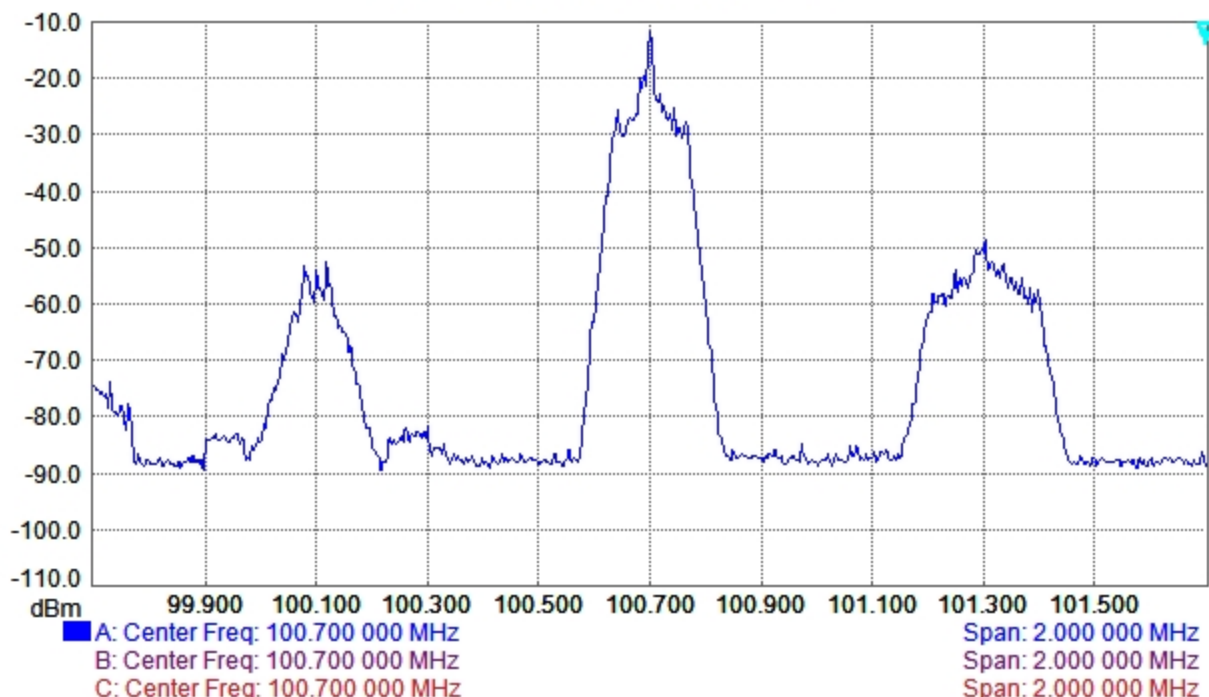
Measurement Parameters

Trace A data:Trace Average	50	Stop Frequency	101.700 000 MHz
Trace Mode	Average	Frequency Span	2.000 000 MHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0 dB	Serial Number	747076
Input Attenuation	10.0 dB	Base Ver.	V5.71
RBW	1.0 kHz	App Ver.	V5.73
VBW	3.0 MHz	Model	MS2721B
Detection	Peak	Options	25, 27
Center Frequency	100.700 000 MHz	Date	10/1/2020 5:49:40 PM
Start Frequency	99.700 000 MHz	Device Name	

Spectrum Analyzer Data

w264df_4 (10/1/2020 5:47:47 PM)

Spectrum Analyzer



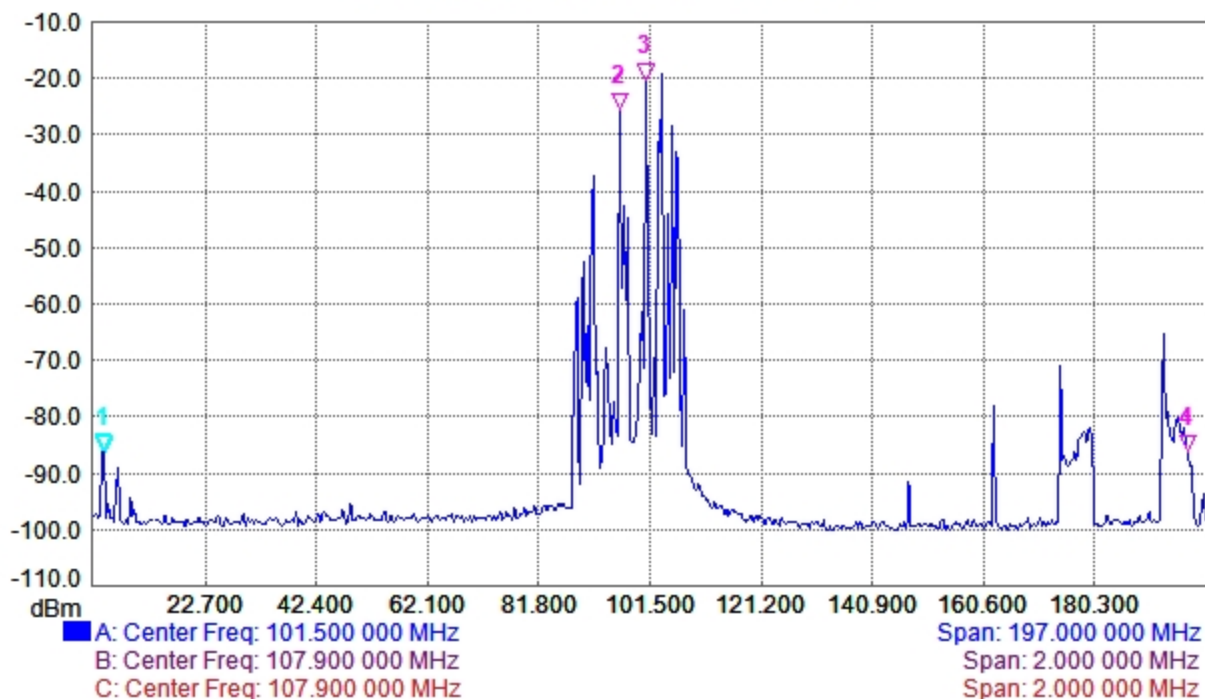
Measurement Parameters

		Stop Frequency	101.700 000 MHz
Trace Mode	Max Hold	Frequency Span	2.000 000 MHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0 dB	Serial Number	747076
Input Attenuation	10.0 dB	Base Ver.	V5.71
RBW	300.0 Hz	App Ver.	V5.73
VBW	3.0 MHz	Model	MS2721B
Detection	Peak	Options	25, 27
Center Frequency	100.700 000 MHz	Date	10/1/2020 5:47:47 PM
Start Frequency	99.700 000 MHz	Device Name	

Spectrum Analyzer Data

w264df_combo1 (10/1/2020 6:01:18 PM)

Spectrum Analyzer



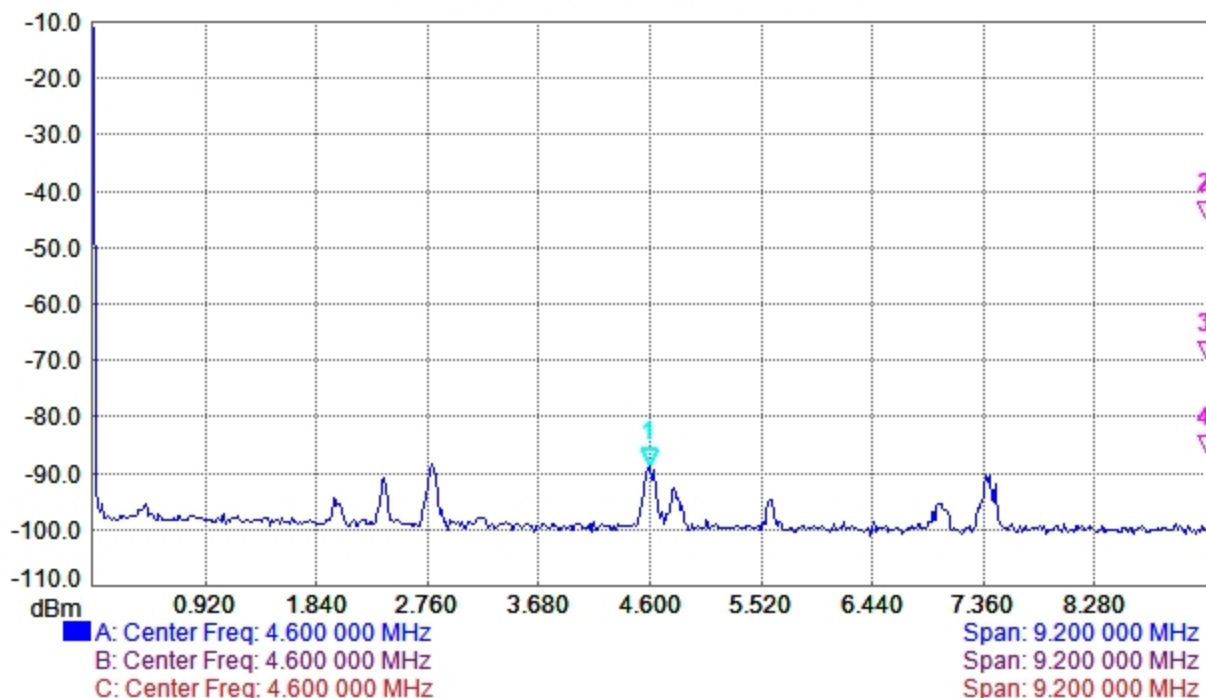
Measurement Parameters

Trace A data:Trace Average	50	Stop Frequency	200.000 000 MHz
Trace Mode	Average	Frequency Span	197.000 000 MHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0 dB	Serial Number	747076
Input Attenuation	10.0 dB	Base Ver.	V5.71
RBW	3.0 kHz	App Ver.	V5.73
VBW	300.0 Hz	Model	MS2721B
Detection	Peak	Options	25, 27
Center Frequency	101.500 000 MHz	Date	10/1/2020 6:01:18 PM
Start Frequency	3.000 000 MHz	Device Name	

Spectrum Analyzer Data

w264df_combo2 (10/1/2020 6:02:04 PM)

Spectrum Analyzer



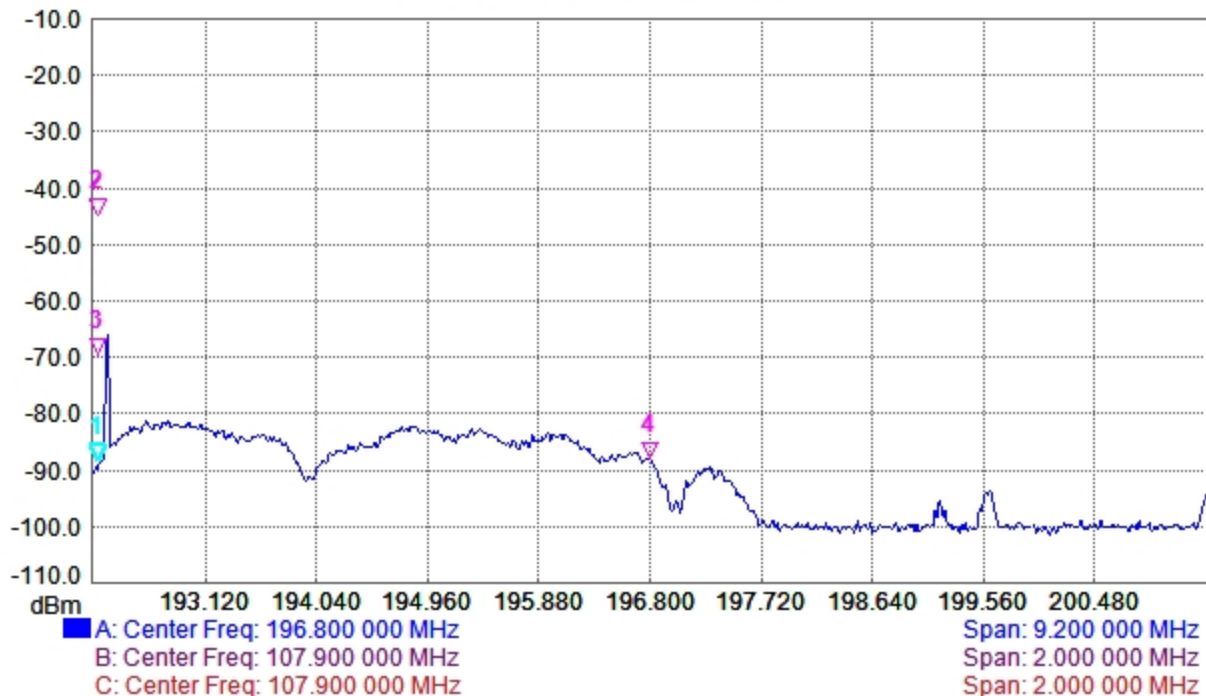
Measurement Parameters

Trace A data:Trace Average	50	Stop Frequency	9.200 000 MHz
Trace Mode	Average	Frequency Span	9.200 000 MHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0 dB	Serial Number	747076
Input Attenuation	10.0 dB	Base Ver.	V5.71
RBW	3.0 kHz	App Ver.	V5.73
VBW	300.0 Hz	Model	MS2721B
Detection	Peak	Options	25, 27
Center Frequency	4.600 000 MHz	Date	10/1/2020 6:02:04 PM
Start Frequency	0.000 000 Hz	Device Name	

Spectrum Analyzer Data

w264df_combo3 (10/1/2020 6:02:47 PM)

Spectrum Analyzer



Measurement Parameters

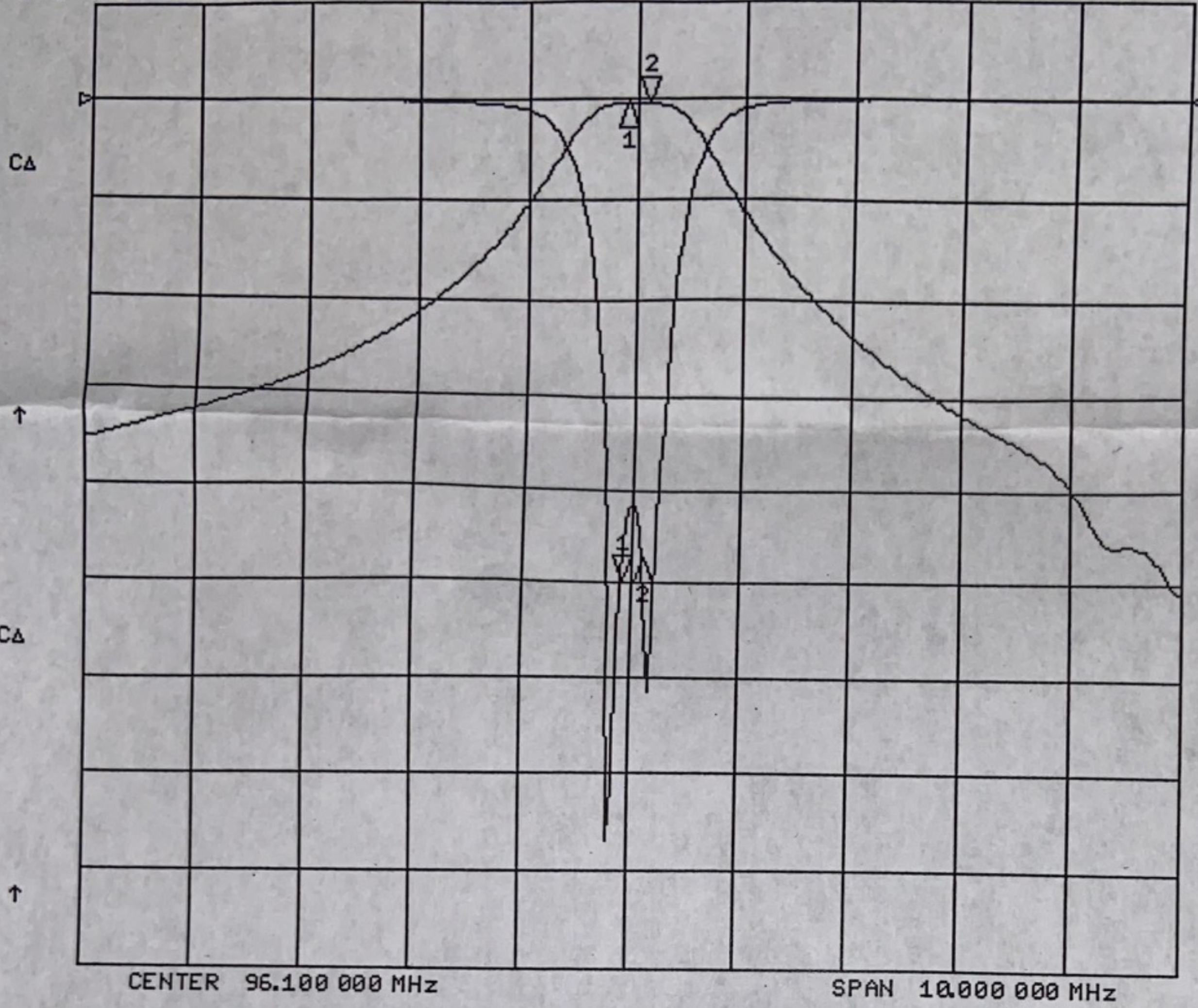
Trace A data:Trace Average	50	Stop Frequency	201.400 000 MHz
Trace Mode	Average	Frequency Span	9.200 000 MHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0 dB	Serial Number	747076
Input Attenuation	10.0 dB	Base Ver.	V5.71
RBW	3.0 kHz	App Ver.	V5.73
VBW	300.0 Hz	Model	MS2721B
Detection	Peak	Options	25, 27
Center Frequency	196.800 000 MHz	Date	10/1/2020 6:02:47 PM
Start Frequency	192.200 000 MHz	Device Name	

Final Data

14 May 2020 16:10:20

CH1 S11 LOG 5 dB/REF 0 dB
CH2 S21 LOG 10 dB/REF 0 dB

1: -24.877 dB 96.000 000 MHz
2: -.46240 dB 96.200 000 MHz



FINAL TEST
IN PROCESS TEST
PN 19048
DATE 5/15/20
TESTED BY: Greg Grana
MEC

14 May 2020 16:11:27

CH1 S11 LOG 5 dB/REF 0 dB
CH2 S21 LOG 10 dB/REF 0 dB

2: -23.900 dB 100.800 000 MHz
1: -.45260 dB 100.600 000 MHz

