ANNUAL
EMISSIONS
MEASUREMENTS

WYSL – 1040 kHz
Avon, NY

February 5, 2020

WYSL -- 1040 kHz, Avon, NY
Occupied Bandwidth Measurements

Measurements were made on standard broadcast station WYSL, 1040 kHz, on February 5, 2020 between 1030 and 1130 EST to ascertain compliance with the emissions standards for AM broadcast stations adopted by NRSC and set forth in 47 CFR §73.44. These measurements are made annually as required by 47 CFR §73.1590(a)(6).

Spectrum analyzer measurements were taken at a receiving site at the southeast corner of the "Park and Ride" lot on NY Route 15 at Morgan Drive, approximately 1.1 km north of the WYSL array in the major lobe of both the day and night directional patterns. The primary measurement instrument was an Anritsu MS2721B Spectrum Analyzer, serial number 1010073, factory calibrated. Self-calibration and internal confidence tests were performed prior to taking measurements. An electrostatically-shielded broadband loop antenna was utilized for spectrum analyzer measurements, oriented for maximum amplitude of the WYSL fundamental signal.

Measurements were taken at the licensed daytime power of 20 kW and nighttime power of 0.5 kW with normal program material modulating the transmitter. Each measurement was taken utilizing the maximum peak-hold capability of the analyzer with a resolution bandwidth of 300 Hz and no video filtering per 47 CFR §73.44(a). The spectrum analyzer traces were saved in the instrument's memory, later plotted and attached to this report as explained on the following page. These plots demonstrate the station's compliance with the applicable occupied bandwidth limits.

Harmonic Measurements

At the same receiving site, a Potomac Instruments Model FIM-41 Field Strength Meter, serial number 2281 (factory calibrated 3/22/2006) was used to identify any carrier harmonic products.

While operating in the normal daytime directional mode, the WYSL fundamental signal (1040 kHz) was measured at 1.30 V/m. The second harmonic (2080 kHz) was measured at 23 uV/m, better than 95.0 dB below fundamental. The third harmonic (3120 kHz) measured at a maximum of 50 uV/m (some variation with modulation), 88.3 dB below fundamental. With WYSL operating in night mode, the fundamental was measured at 250 mV/m. The second harmonic (2080 kHz) measured 40 uV/m, better than 75.9 dB below fundamental, and the third harmonic measured less than 10 uV/m (bottom limit of the FIM-71), indicating attenuation better than 87.9 dB.

47 CFR §73.44(b) requires a minimum of 80 dB of attenuation of harmonic and spurious products for stations with a nominal power of 20 kW and at least of 70 dB of attenuation when operating at 0.5 kW.

Based on the results of these measurements, standard broadcast station WYSL is in full compliance with the emissions standards described in 47 CFR §73.44.

Spectrum Analyzer Plots are attached as follows:

WYSL-20-1 – WYSL Emissions within +/- 25 kHz of carrier while operating in day directional mode. 10 minute Max Hold.
Detector set to Max Peak to verify compliance with 10 kHz low pass filter requirement.

WYSL-20-2 – WYSL emissions within +/- 75 kHz of carrier while operating in day directional mode. 10 minute Max Hold.
(Signal received at 50 kHz below center is WDCX, 990 kHz, Rochester, NY)

WYSL-20-3 – WYSL Emissions within +/- 25 kHz of carrier while operating in night directional mode. 10 minute Max Hold.
Detector set to Max Peak to verify compliance with 10 kHz low pass filter requirement.

WYSL-20-4 – WYSL emissions within +/- 75 kHz of carrier while operating in night directional mode. 10 minute Max Hold.
(Signal received at 50 kHz below center is WDCX, 990 kHz, Rochester, NY)

WYSL-20-5 – Single sweep from 890 to 1190 kHz showing signals received at measurement location with WYSL transmitters muted.

PREPARER'S CERTIFICATION

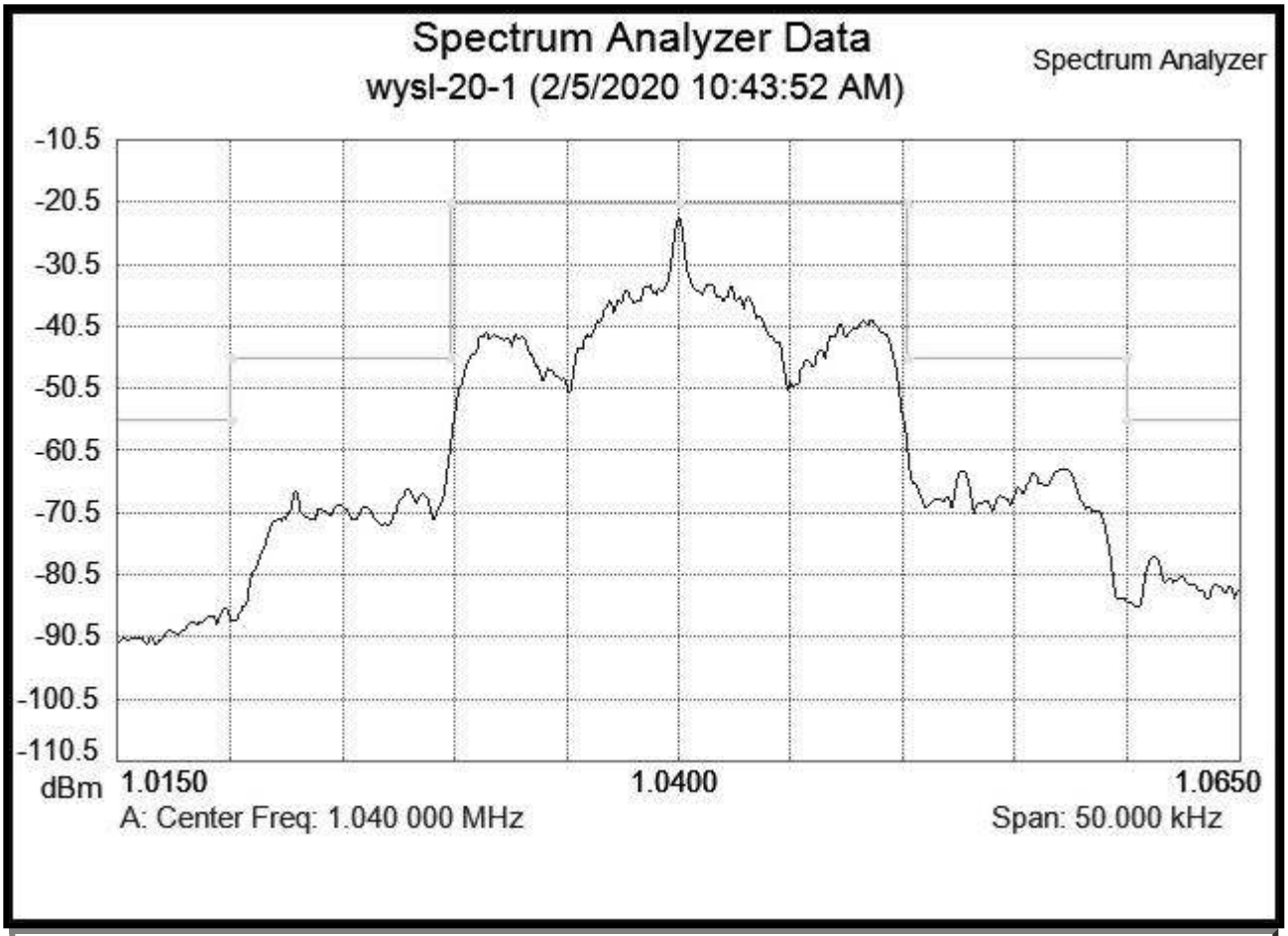
I, Mark D. Humphrey, hereby certify that the field measurements taken on February 5, 2020 and included in this report were made by me, and they are true and accurate to the best of my knowledge and belief.

Signature: (s) Mark D. Humphrey

Master Software Tools Report

Prepared for:

Location:
Date: 2/5/2020 10:43:52 AM



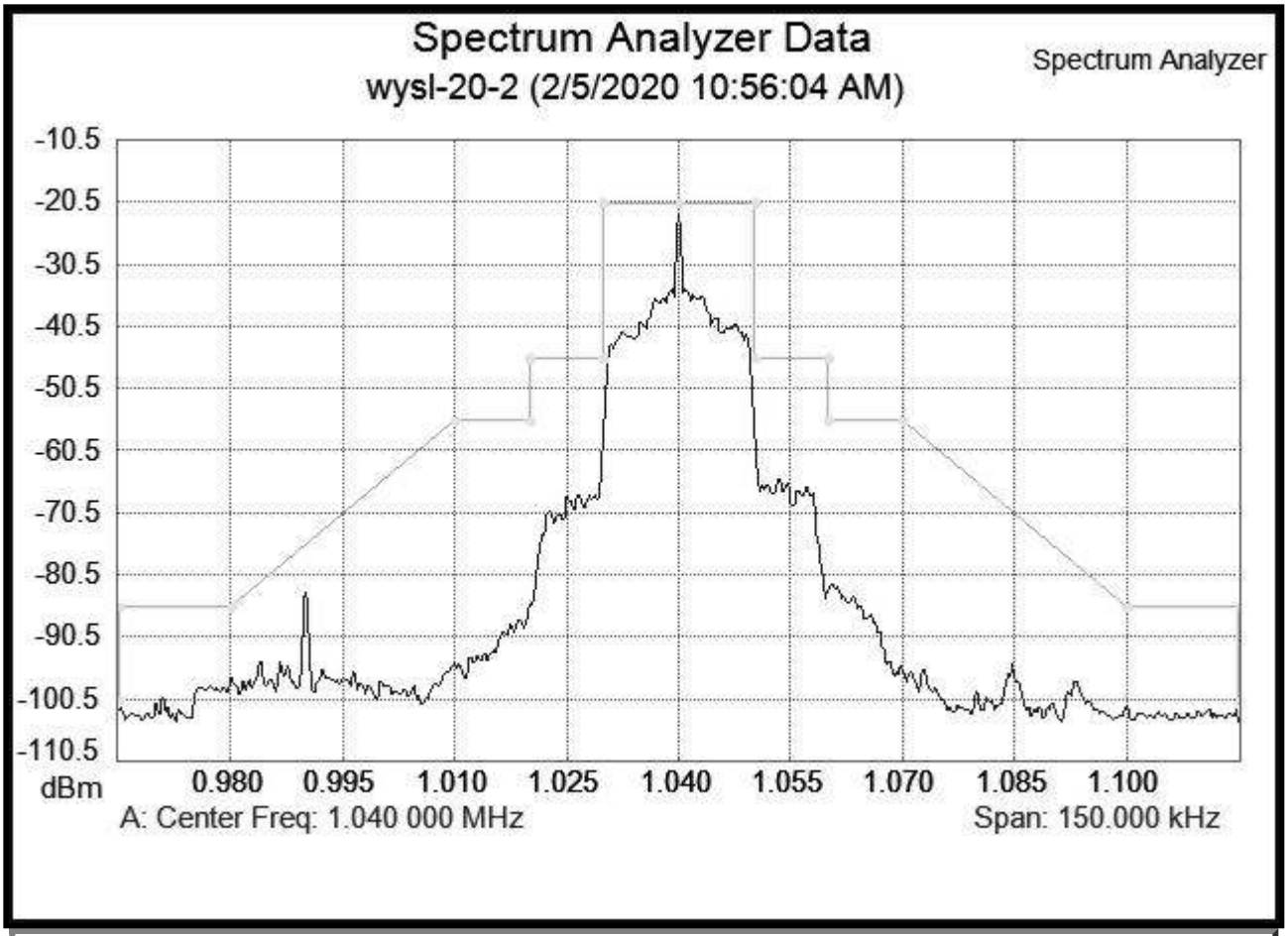
Measurement Parameters			
		Trace Mode	Max Hold
Preamp	OFF	Min Sweep Time	10 S
Reference Level Offset	0 dB	Input Attenuation	10.0 dB
RBW	300.0 Hz	VBW	1.0 MHz
Detection	Peak	Center Frequency	1.040 000 MHz
Start Frequency	1.015 000 MHz	Stop Frequency	1.065 000 MHz
Frequency Span	50.000 000 kHz	Reference Level	-10.500 dBm
Scale	10.0 dB/div		

Device Information			
Serial Number	1010073	Base Ver.	V5.71
App Ver.	V5.73	Model	MS2721B
Options	20	Date	2/5/2020 10:43:52 AM
Device Name			

Master Software Tools Report

Prepared for:

Location:
Date: 2/5/2020 10:56:04 AM



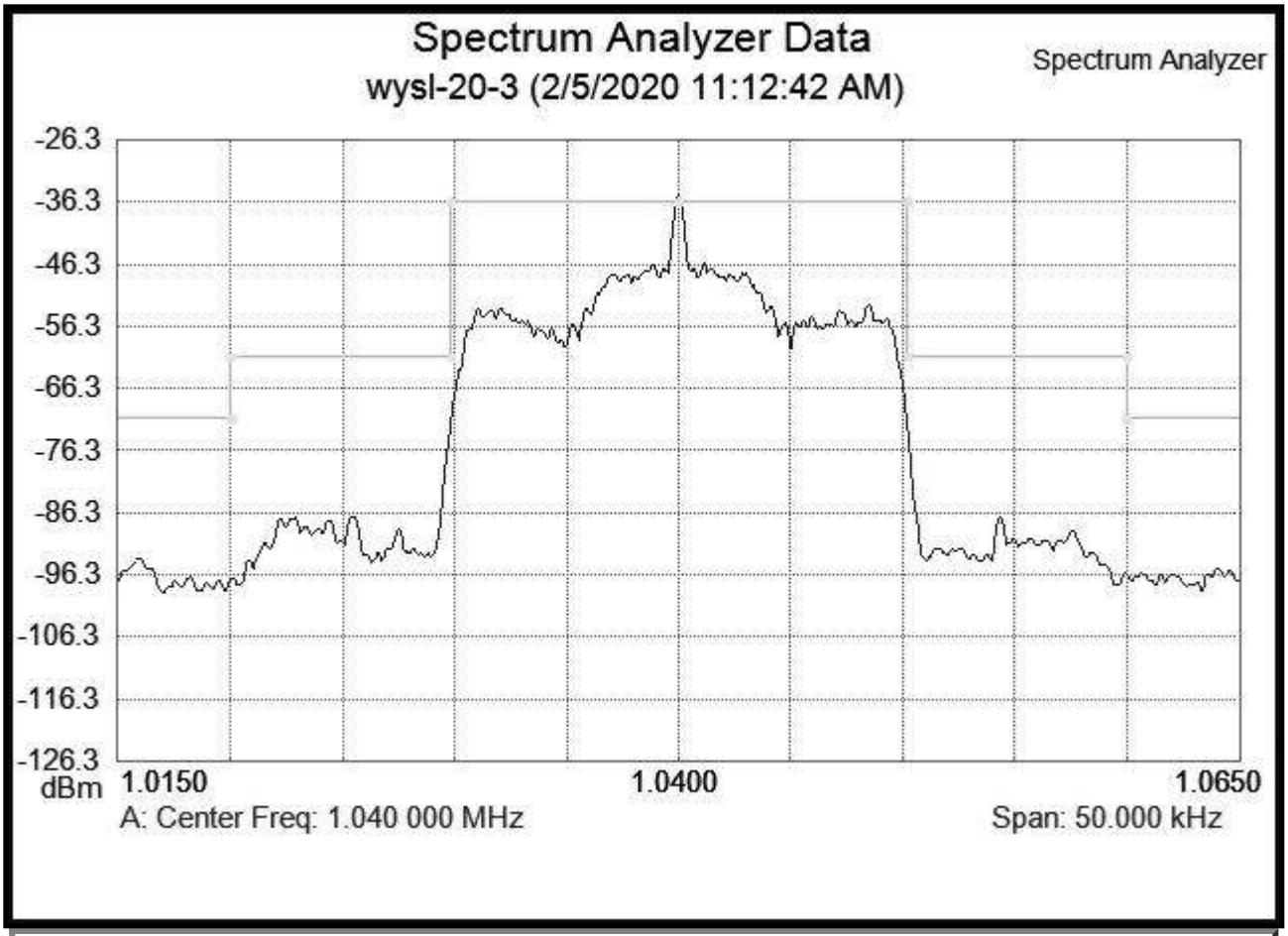
Measurement Parameters			
		Trace Mode	Max Hold
Preamp	OFF	Min Sweep Time	10 S
Reference Level Offset	0 dB	Input Attenuation	10.0 dB
RBW	300.0 Hz	VBW	1.0 MHz
Detection	Peak	Center Frequency	1.040 000 MHz
Start Frequency	965.000 000 kHz	Stop Frequency	1.115 000 MHz
Frequency Span	150.000 000 kHz	Reference Level	-10.500 dBm
Scale	10.0 dB/div		

Device Information			
Serial Number	1010073	Base Ver.	V5.71
App Ver.	V5.73	Model	MS2721B
Options	20	Date	2/5/2020 10:56:04 AM
Device Name			

Master Software Tools Report

Prepared for:

Location:
Date: 2/5/2020 11:12:42 AM



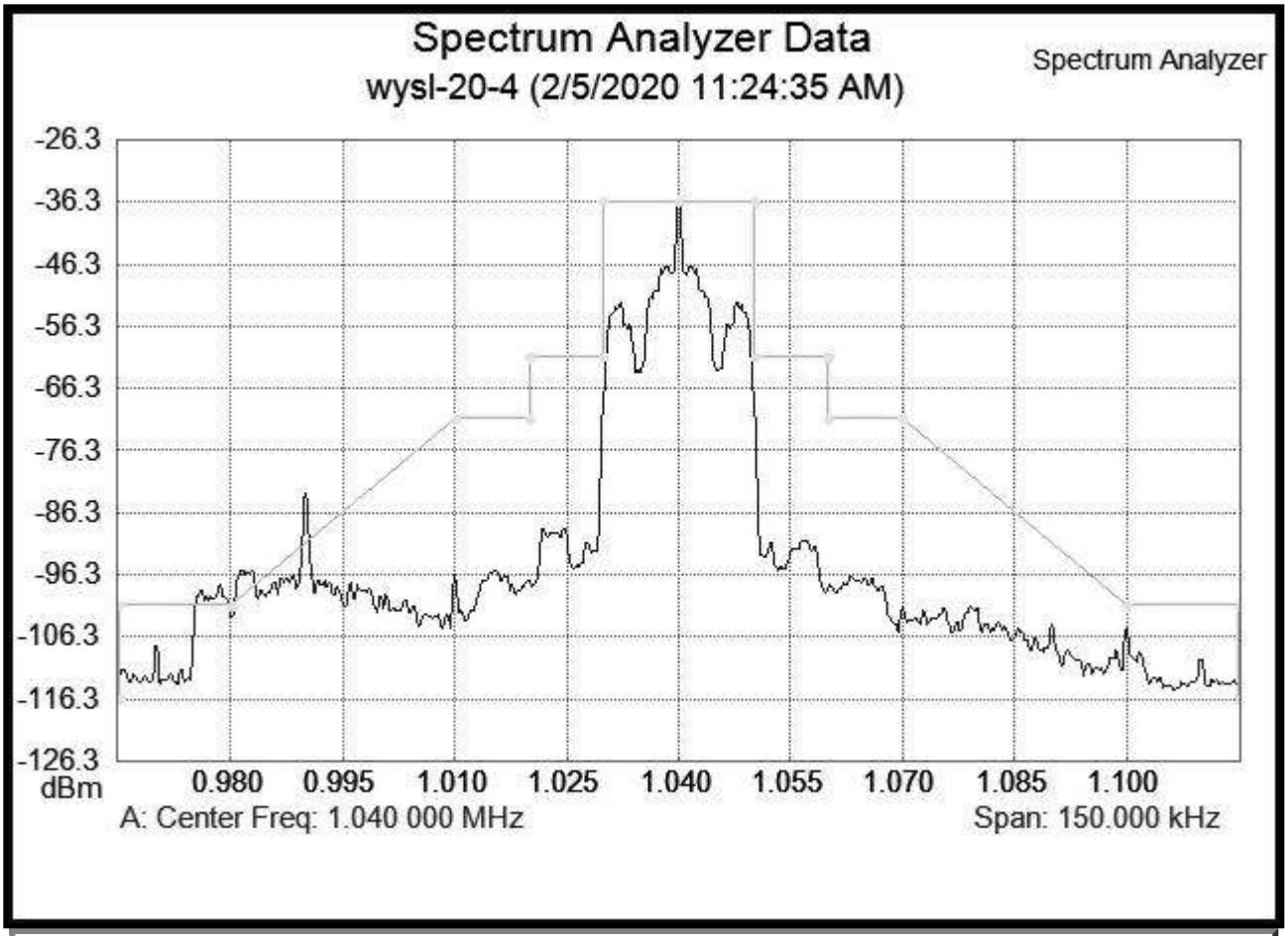
Measurement Parameters			
		Trace Mode	Max Hold
Preamp	OFF	Min Sweep Time	10 S
Reference Level Offset	0 dB	Input Attenuation	0.0 dB
RBW	300.0 Hz	VBW	1.0 MHz
Detection	Peak	Center Frequency	1.040 000 MHz
Start Frequency	1.015 000 MHz	Stop Frequency	1.065 000 MHz
Frequency Span	50.000 000 kHz	Reference Level	-26.300 dBm
Scale	10.0 dB/div		

Device Information			
Serial Number	1010073	Base Ver.	V5.71
App Ver.	V5.73	Model	MS2721B
Options	20	Date	2/5/2020 11:12:42 AM
Device Name			

Master Software Tools Report

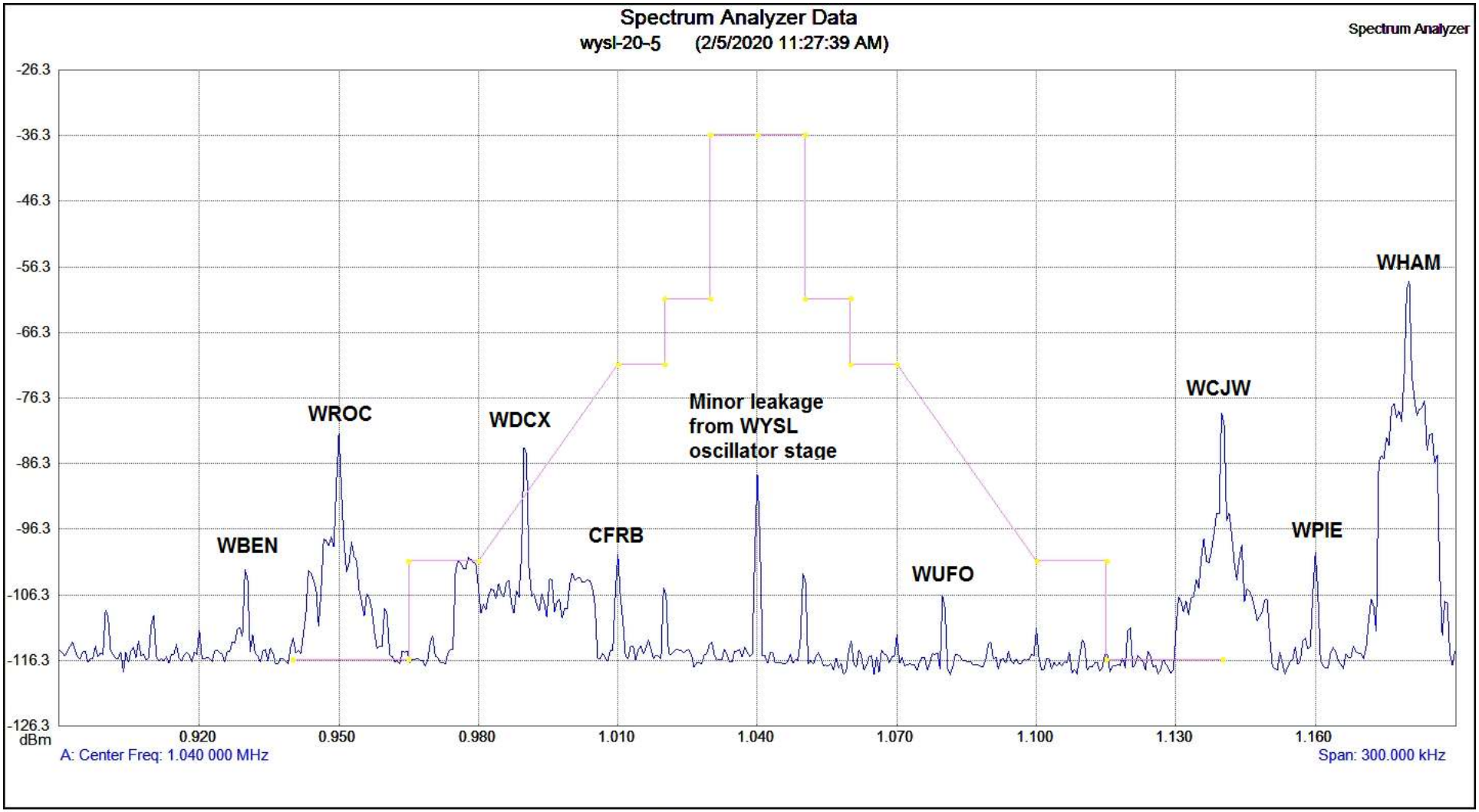
Prepared for:

Location:
Date: 2/5/2020 11:24:35 AM



Measurement Parameters			
		Trace Mode	Max Hold
Preamp	OFF	Min Sweep Time	10 S
Reference Level Offset	0 dB	Input Attenuation	0.0 dB
RBW	300.0 Hz	VBW	1.0 MHz
Detection	Peak	Center Frequency	1.040 000 MHz
Start Frequency	965.000 000 kHz	Stop Frequency	1.115 000 MHz
Frequency Span	150.000 000 kHz	Reference Level	-26.300 dBm
Scale	10.0 dB/div		

Device Information			
Serial Number	1010073	Base Ver.	V5.71
App Ver.	V5.73	Model	MS2721B
Options	20	Date	2/5/2020 11:24:35 AM
Device Name			



Measurement Parameters

		Stop Frequency	1.190 000 MHz
Trace Mode	Max Hold	Frequency Span	300.000 000 kHz
Preamp	OFF	Reference Level	-26.300 dBm
Min Sweep Time	10 S	Scale	10.0 dB/div
Reference Level Offset	0 dB	Serial Number	1010073
Input Attenuation	0.0 dB	Base Ver.	V5.71
RBW	300.0 Hz	App Ver.	V5.73
VBW	1.0 MHz	Model	MS2721B
Detection	Peak	Options	20
Center Frequency	1.040 000 MHz	Date	2/5/2020 11:27:39 AM
Start Frequency	890.000 000 kHz	Device Name	