

**SUMMARY AND RESULTS OF INTERFERENCE
TESTING BETWEEN W229CM AND WRGG-LP TAKEN
AT EARL'S MARKET, STATELINE PENNSYLVANIA
1 NOVEMBER 2017**

NOTE: W229CM / WEPM/ West Virginia Radio Corporation of the Alleghenies shall be identified below as WVRCA.

WRGG-LP / Greencastle-Antrim Education Foundation shall be identified below as WRGG-LP.

Persons attending and representing were:

Noel Richardson, Engineering, WRVCA (also listed as "I" or "Me")

Jeffrey Heavener, Engineering, WRVCA

Emily Meadows, Employee, WRVCA

C. Gregory Hoover, Administration, WRGG-LP

Jeffrey Baker, Engineering, WRGG-LP

Wade G, Burkholder. Administration, WRGG-LP

Stanley Shaffer, Technician, WRGG-LP

William MrCarrey, Consulting Engineer, WRGG-LP

Benjamin Thomas Jr., Administration, WRGG-LP

All pre-testing procedures, including modulation measurements and transmitter output power was documented and observed to be in compliance by representatives of both entities. Beginning at 6:10pm on the evening of November 1st, Noel Richardson and Emily Meadows of WVRCA and C. Gregory Hoover did observe the licensed TPO of W229CM. At this time, Mr. Hoover remained with Ms. Meadows throughout the remainder of the evening to observe proper operating procedures, including carrier off, carrier on without modulation, and carrier at 75% and 50% of licensed power when requested. Mr. Heavener and I then proceeded to the WRGG-LP transmitter site and met with Jeffrey Baker and Stanley Shaffer and observed proper licensed TPO and modulation and verified at 7:20pm. At this time, Mr. Heavener and Mr. Baker remained at the site to observe proper procedures while Mr. Shaffer and I met the other WRGG-LP representatives at Earl's Market, arriving at 7:50pm.

Person attending the actual Earl's Market test included myself, Mr. Shaffer, Mr. McCarrey, Mr. Burkholder, and Mr. Thomas. Equipment used in all measurements included, but not limited to, the following material, receivers, antennas, and programming:

*****Day-Seguerra HD modulation monitor model H-2**

*****Standard Radio Shack AM/FM/TV/WTH receiver provided by Earl's Market**

*****Sangean HDR-1 table model AM/FM receiver**

*****Aztec AZ-100 FM Navigator serial AZ-1146 with external monitor for all parties to hear any audio.**

*****Dell Inspiron 6000 laptop computer utilizing FM-NET Explorer program Version 6.35**

*****Audemat matched receiver omni-direction antenna with 50 ohm supplied cable and connector**

*****Circular 2-element receive antenna on tripod supplied by Mr. McCarrey, WRGG-LP consulting engineer.**

The attached exhibits: Labeled Earls -1, Earls -2, depict the amounts of RF signal being received. Exhibit – 1 taken at 8:22pm demonstrates an amount of approximately 35db of signal being received on the set frequency of 93.7mhz with both W229CM and WRGG-LP carriers ON with modulation. No amount of listenable audio could be detected. At this time, the W229CM carrier was turned off and the result did not change, nor could any programming from WRGG-LP be obtained. Exhibit -2 taken at 8:40 demonstrates an amount of approximately 39db of “noise” at 93.7mhz with both W229CM and WRGG-LP carriers OFF. The exact same results were obtained by using the antenna that Mr. McCarrey provided, even after placing the antenna in different locations within the Market, including close to a window. As noted above, the 4 representatives of WRGG-LP were able to observe the computer readings and listen on the provided monitor and receivers. As illustrated in exhibits A, B, C, D, it can be verified that more than one receiver and antenna were being used in the tests. Audio was also recorded during these tests but only noise floor could be detected and no discernable audio or programming could be heard. Therefore, the audio portion is not included in this report but can be provided if necessary.

*****Exhibit “A” is the standard table AM/FM/TV/WTH receiver provided by Earl’s Market or Mr. Burkholder. Not depicted in any illustrations but another portable receiver and a boombox were present and unable to receive any signal from 93.7.**

*****Exhibit “B” depicts the circular antenna provided by Mr. McCarrey**

*****Exhibit “C” shows the Sangean receiver set on 93.7 provided by WVRCA**

*****Exhibit “D” depicts the Aztec AZ-100, monitor, and computer used to capture the evidence, or lack of.**

Also attached are the actual worksheets used for signatures, test results, and remarks taken at the time of the testing.

It is the opinion of me and the WRGG-LP representatives that either signal could not be distinguished in this location, therefore, resulting in the conclusive determination that W229CM is not creating interference to the listenable signal of WRGG-LP at the Earl’s Market location. As outlined in the first paragraph of an email from James Bradshaw of the FCC dated 17 October 2017 both stations did indeed, perform on/off air testing at this location since it was the base of the interference complaint. I have provided a copy of Mr. Bradshaws email for reference. With my signature below, I verify that all statements and exhibits included and attached are as accurate as I can possibly obtain.



**Noel W. Richardson CPBE/SBE
Vice President Engineering
West Virginia Radio Corporation**

AUDIO AND SIGNAL INTERFERENCE
ISSUES BETWEEN W229CM
MARTINSBURG AND WRGG-LP
GREENCASTLE

**PERSONS AND REPRESENTATIVES OF EACH
FACILITY AND INTERESTED PARTIES; PLEASE
PRINT NAME, INITIAL, DATE, ASSOCIATION**

- ① { NOEL RICHARDSON NR 11/1/17 WVRCA
C. GREGORY HOOVER 11/1/17 WRGG-LP 6:10/P VERIFIED
PWR & MCD
- ② { JEFFREY BAKER 11/1/17 WRGG-LP (chief engineer)
JEFFREY HEAVENER 11/1/17 WVRCA 7:20/P VERIFIED
- ③ { WADE B. BURKHOLDER 11/1/17 WRGG-LP
STANLEY SHOFFER 11/1/17 WRGG engineer
WILLIAM M. ARREY 11/1/17 CONSULTING ENGINEER
JOHN THOMAS 11-1-2017 WRGG-LP President

ACTUAL SIGNATURES BY ALL

**W229CM TRANSMITTER & MODULATION
OBSERVED TO BE WITHIN COMPLIANCE:**

VERIFIED BY NC, MS MEADOWS & NDR HOOVER 6:10/pm

**WRGG-LP TRANSMITTER & MODULATION
OBSERVED TO BE WITHIN COMPLIANCE:**

VERIFIED BY NC, NDR BAKER, NDR SHAFFER, MR. HEAVENER 7:29/pm

**BELOW TESTS WERE CONDUCTED AT EARLS
MARKET, STATELINE, PA.**

date/time/observers: 1 NOV 2017 7:50/pm - 9:35/pm WITH
BURKHOLDER, SHAFFER, MCCARRY, THOMAS ALL OF WRGG-LP

RECEIVER AND MODULATION TEST RESULTS:

WRGG-LP CARRIER ON: REMAINED ON
W229CM CARRIER OFF: 8:26/p

W229CM CARRIER ON: ON 8:31/p
WRGG-LP CARRIER OFF: 8:32/p

**WRGG-LP CARRIER ON WITHOUT
MODULATION:** NOISE FLOOR CONSISTANT/
W229CM CARRIER OFF: NK

**W229CM CARRIER ON WITHOUT
MODULATION:** NOISE CONSISTANT
WRGG-LP CARRIER OFF: NK

NOTICABLE BOTH CARRIERS RECORDED WITH
MODULATION: NOISE CONSISTANT & VERIFIED BY ALL
RECORDED ON 200M HY NEXT RECORDER

BOTH CARRIERS OFF: NO CHANGE

BOTH CARRIERS ON WITHOUT
MODULATION: NO CHANGE
RECORDED ON HY

THE BELOW TESTS WERE TAKEN AT NOTED
POWER LEVELS FROM W229CM WITH WRGG-LP
AT NORMAL MODULATION

75% DID NOT WARRANT RUNNING

50%: THESE 2 TESTS AS NO SIGNAL OBTAINED
AT 100% TPO



Station overview

Frequency : 93.70 MHz

RDS Main Information

PI : ??? PS : ?????

MS : Speech TA : 0 TP : 0

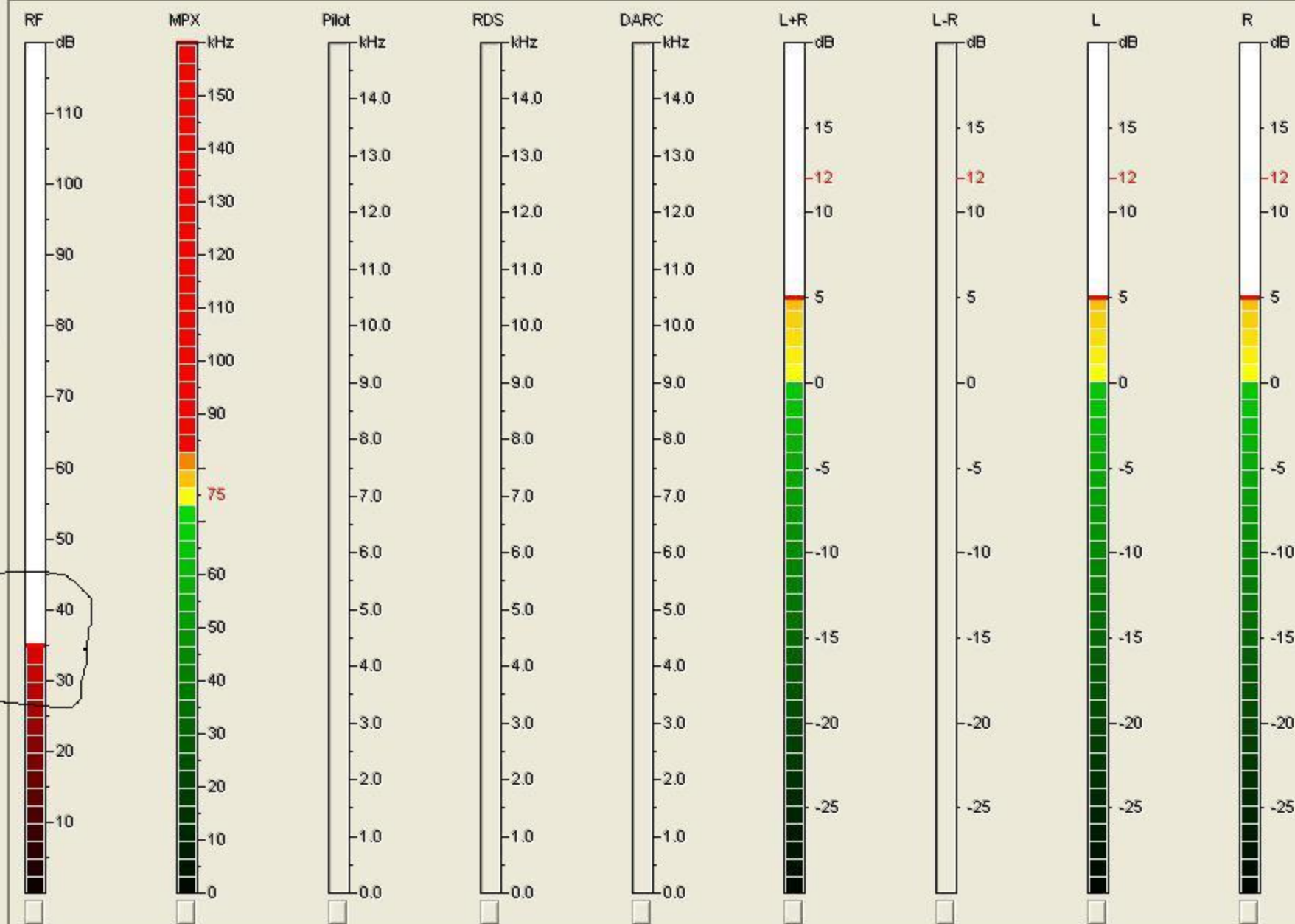
Date : ??/??/?? ??:??

Radiotext :

????????????????????????????????
 ?????????????????????????????????

RDS Sync : ? RDS Quality : /

EARLS I



CNX : LOCAL

FM Navigator

TUNER

01/11/2017

20:22



Station overview

Frequency: 93.70 MHz

RDS Main Information

PI: ??? PS: ?????

MS: Speech TA: 0 TP: 0

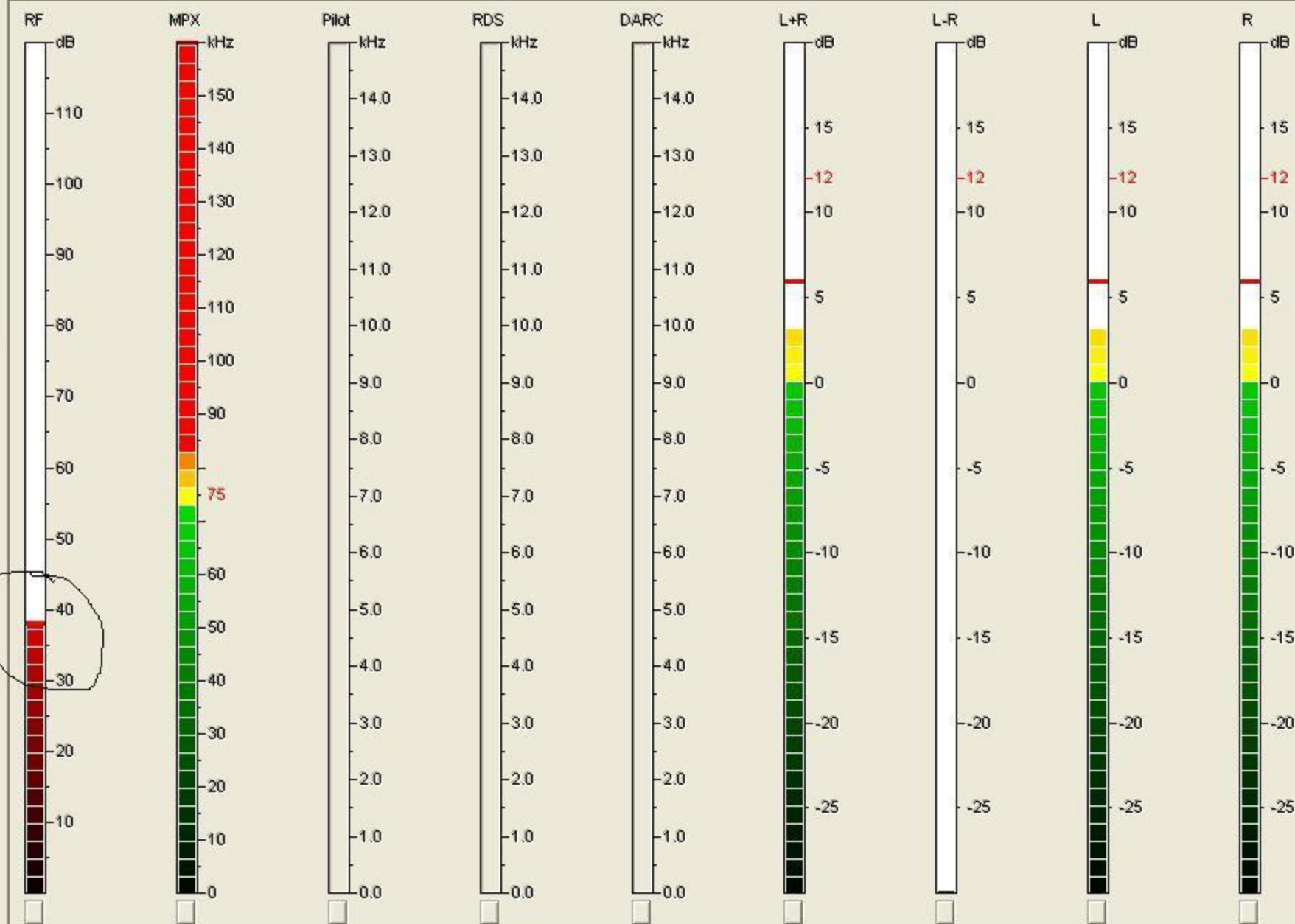
Date: ??/??/?? ??:??

Radiotext:

????????????????????????????????
 ?????????????????????????????????

RDS Sync: ? RDS Quality: /

EARLS 2



CNX: LOCAL

FM Navigator

TUNER

01/11/2017 20:40



EARLS A



EARLS B



EARLS C



EARLS D