

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of:	)	
	)	
Armstrong Utilities, Inc.	)	CSR 8752-M
	)	Docket No. 12-364
Carriage Complaint of Western Pacific Broadcast, LLC, WACP, Atlantic City, New Jersey	)	
	)	
To: Media Bureau	)	

**NOTICE OF JOINT TEST**

Armstrong Utilities, Inc. (“Armstrong”) submits this Notice of Joint Test consistent with *Complaint for Carriage of Western Pacific Broadcast, LLC, Memorandum Opinion and Order*, DA 14-231 (rel. February 20, 2014). The Joint Test is scheduled to begin on Monday, April 14, 2014, and has been confirmed with WACP personnel.<sup>1</sup> Armstrong will follow the Test Protocol set forth in the WACP/Armstrong Measurement Procedures<sup>2</sup> developed by Meintel, Srignoli, & Wallace, which has been provided to WACP.<sup>3</sup>

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<sup>1</sup> Exhibit 1, March 20, 2014 email from Ed Hassler, Jr. to Todd Loney, Gregory Kraft and Sue Lupia.

<sup>2</sup> Exhibit 2, MSW WACP/Armstrong Measurement Procedures.

<sup>3</sup> Exhibit 3, March 24, 2014 email from Ed Hassler, Jr. to Todd Loney, Gregory Kraft and Sue Lupia.

Respectfully submitted,

By: 

Christopher C. Cinnamon  
Cinnamon Mueller  
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March 29, 2014

Attorneys for Armstrong Utilities, Inc.

**From:** Hassler, Ed Jr. <ehassler@agoc.com>  
**Sent:** Thursday, March 20, 2014 6:37 AM  
**To:** tloney@ieee.org; gregorykraft@wacp.com; slupia@rtowers.com  
**Cc:** Chris Cinnamon; Zeltwanger, Kathryn P.; Chapman, Kelly  
**Subject:** WACP Testing

Todd, Sue and Greg,

With this email, I am confirming the WACP Joint Test is scheduled to begin Monday, April 14, 2014 at 0900 ET. We will follow the Test Plan prepared by MSW, which covers all of the information requested by the Media Bureau.

If your plans change, please notify me as soon as possible.

Thanks,  
Ed

Edgar E. Hassler, Jr.  
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## **WACP/ARMSTRONG MEASUREMENT PROCEDURES**

The following is a description of the test procedures Armstrong will follow during the Joint Test of WACP-DT at the Armstrong Cable Head-End facility at Oxford, PA. The Joint Test is scheduled to begin at 0900 ET on Monday, April 14, 2014.

### **WACP Test Procedure**

1. Measurements will be conducted using the existing installed antenna and pre-amplifier system at the Oxford Head End location. The Equipment to be used is as follows: (Diagram attached Exhibit A).
  - a. Tandberg RX8320 receiver S/N 06593
  - b. ASI 1 to Terayon DM6400 S/N 604410600015 output to IP network
  - c. ASI 2 to Ineoquest Cricket ASI S/N 2ASMA-1108-0015 output to IP network
  - d. Singulus IQMediaMonitor S/N IQMM1-3409-0005
  - e. LG TV Set
  - f. Microwave Filter Company Bandpass filter model 3303 ch D-4
  - g. Sitco Antenna Pre-amplifier CH-VHF 4 19 dB gain P/N PA24-F-4
  - h. Rohde & Schwarz FSH-3 Spectrum Analyzer with bandpower markers measurement capability.
  - i. Sunrise Spectrum Analyzer Model: AT2500RQv
  - j. Sunrise Signal Level Meter Model: CM2000
2. Using a Spectrum analyzer with 6MHz band power markers measure the received signal level of the WACP DTV signal in dBm/6MHz units. This measurement will be made at the input to the Tandberg receiver.
  - a. Spectrum analyzer power measurement will be recorded at the beginning of the 24 hour testing period. This data will be used to calibrate the signal level measurement of the Sunrise Spectrum Analyzer (AT2500RQv) which will be used to make hourly measurements of the received signal level. Determine and record any differences in signal level between instruments (Calibration Factor).
  - b. Using the FSH-3 Spectrum Analyzer Verify and record receive system noise floor, in dBm/6 MHz. (Pre-Amplifier output). This will allow the calculation of the received Carrier to Noise ratio. (CNR).



- c. Signal level to be recorded over 24 hour period using the Sunrise Spectrum Analyzer. Logging of the signal level will be every 1 hour intervals.
3. Perform **DTV** measurements on tower-mounted antenna:
  - i. Measure the average power in 6 MHz of the received DTV signal at the spectrum analyzer input. Note any RF signal level variations.
  - ii. Calculate DTV RMS field strength (in dB $\mu$ V/m/6 MHz) using receive system parameters (antenna gain, dipole factor, input attenuator, and RF system gain, line losses).
  - iii. Calculate SNR value using receive system parameters (signal power in 6 MHz, noise power in 6 MHz, input attenuator).
  - iv. If service is available, measure receive margin. Add attenuation until just above TOV, and record the amount of attenuation (i.e., site margin). Note any "Picture Blocking" (i.e., burst errors).
4. Verify proper operation of DTV receivers, monitors, and remote controls (use an existing DTV signal in the proper frequency band). (WPVI-DT Channel 6).
5. Connect WACP signal to DTV receiver and test equipment.
  - i. Measure the following parameters continuously for 24 hour period using Singulus IQMediaMonitor.
  - ii. Received Signal Level / Signal Power
  - iii. Packet Error Rate (PER) / Packet Loss
  - iv. SNR Received Signal-to-Noise ratio
6. Video tape or otherwise record the WACP Video and Audio signals for archive and analysis purposes:
  - a. Note all signal fades, picture impairments, and other anomalies.
7. Verify that all data is properly logged.



**Measurement Equipment List:**

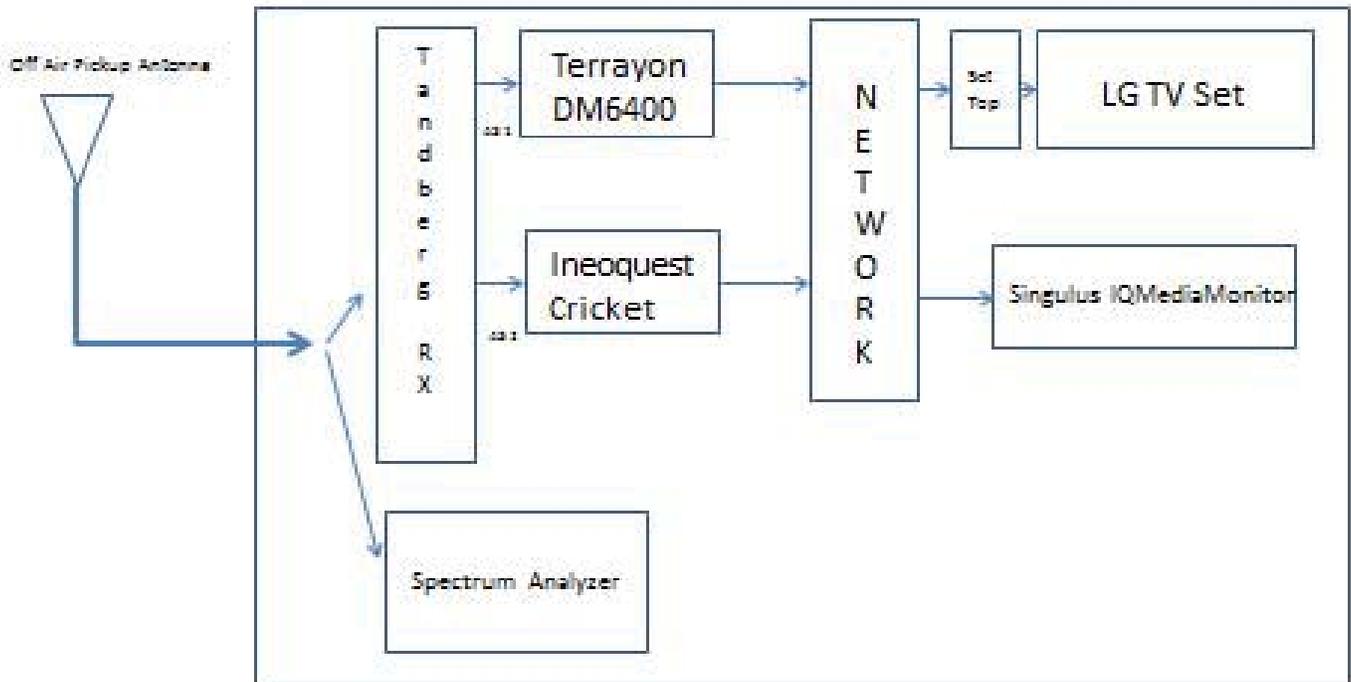
Armstrong provided equipment:

1. Tandberg RX8320 receiver S/N 06593
2. ASI 1 to Terayon DM6400 S/N 604410600015 output to IP network
3. ASI 2 to Ineoquest Cricket ASI S/N 2ASMA-1108-0015 output to IP network
4. Singulus IQMediaMonitor S/N IQMM1-3409-0005
5. LG TV
6. Video Camera & associated recording material
7. Set Top Box comparable to Armstrong CPE.

WACP provided equipment:

1. Microwave Filter Company Bandpass filter model 3303 ch D-4
2. Sitco Antenna Pre-amplifier CH-VHF 4 19 dB gain P/N PA24-F-4

## APPENDIX A



**ARMSTRONG / WACP TESTING SCHEMATIC**  
D. Wallace 03/19/14

**From:** Hassler, Ed Jr. <ehassler@agoc.com>  
**Sent:** Monday, March 24, 2014 6:29 AM  
**To:** tloney@ieee.org; gregorykraft@wacp.com; slupia@rtowers.com  
**Cc:** Chris Cinnamon; Zeltwanger, Kathryn P.; Chapman, Kelly  
**Subject:** WACP Testing  
**Attachments:** ARMSTRONG\_WACP\_TESTING\_PROCEDURE\_031914.pdf

Todd, Greg and Sue,

Attached please find a copy of the test plan for Monday April 14, 2014. If you have any questions let me know.

Ed

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