Appendix A
Measurement Systems

This appendix provides information regarding the measurement equipment used to perform this test/measurement program and block diagrams showing the interconnections of the various test set-ups.

Table A-1 provides a list of the equipment used, including the manufacturer and model number, a brief description and where appropriate, the most recent manufacturer calibration date.

Figures A-1 through A-4 illustrate the measurement equipment and related interconnections used to perform the tests and measurements described in this report. Figure A-5 shows the spectral characteristics of the filtered DTV signal that was placed on the adjacent channel(s) in the adjacent-channel interference tests.

Table A-1. List of Measurement Equipment

Equipment	Quantity	Manufacturer and Model	Specifications	Last Calibrated
Spectrum Analyzer	1	Agilent E4448 PSA	3 Hz-50 GHz	03/13/08
Spectrum Analyzer	1	Agilent E7405A EMC	9 kHz – 26.5 GHz	05/08/08
Modulation Analyzer	1	Agilent 8901A	-	09/14/07
Audio Analyzer	1	Agilent 8903B	-	09/14/07
Signal Generator	1	Agilent E4437B ESG	250 kHz-4 GHz	05/02/08
Signal Generator	1	Agilent 4438C ESG	250 kHz – 6 GHz	07/03/08
Broadcast Test System	2	Rhode and Schwarz SFU	w/ ATSC Signal Generator	-
WS-2100 RF Player	1	Wavetech, Inc.	-	-
Step Attenuator	4	Agilent 8494B	0 to 11 dB DC – 18 GHz	08/14/07 09/17/07 12/05/07 12/06/07
Step Attenuator	3	Agilent 8495B	0 to 70 dB DC – 18 GHz	08/21/07 09/17/07 12/04/07
Step Attenuator	1	Agilent 8496B	0 to 110 dB DC – 18 GHz	12/05/07
TV Channel 29 Bandpass Filter	1	Micro Communications, Inc.; Interdigital Series 42100	560-566 MHz; 7-pole; 0.8-1.0 dB insertion loss; VSWR: 1.15	-
Signal Combiner	2	MiniCircuits ZFSC-2-1W	50 Ω	-
Log Periodic Antenna	1	A.R.A. LPB-2520/A	25 MHz – 2.0 GHz	-
Impedance Matching Transformer	1	Trilithic ZMT-57	75-50 Ω	-
Low Noise Preamplifier	1	Narda NEL-0102N305-1MH	0.5 to 2 GHz	-
Vertical Ground Plane Antenna	1	FCC Lab	0 dBi 512 to 698 MHz	11/13/07

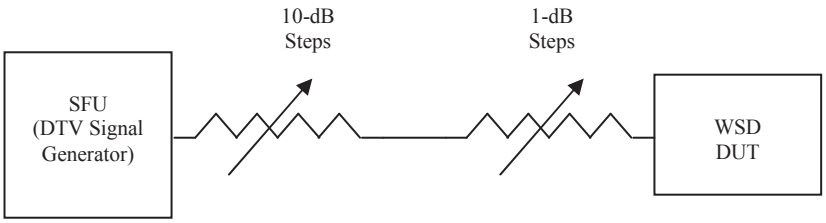

Figure A-1. "Clean" DTV Signal Measurement Equipment Configuration.

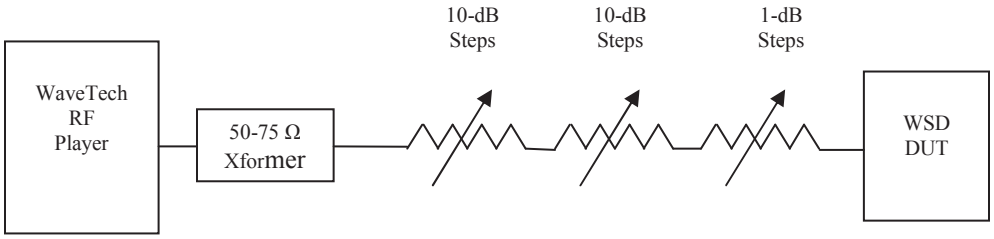

Figure A-2. "Recorded" DTV Signal Measurement Equipment Configuration.

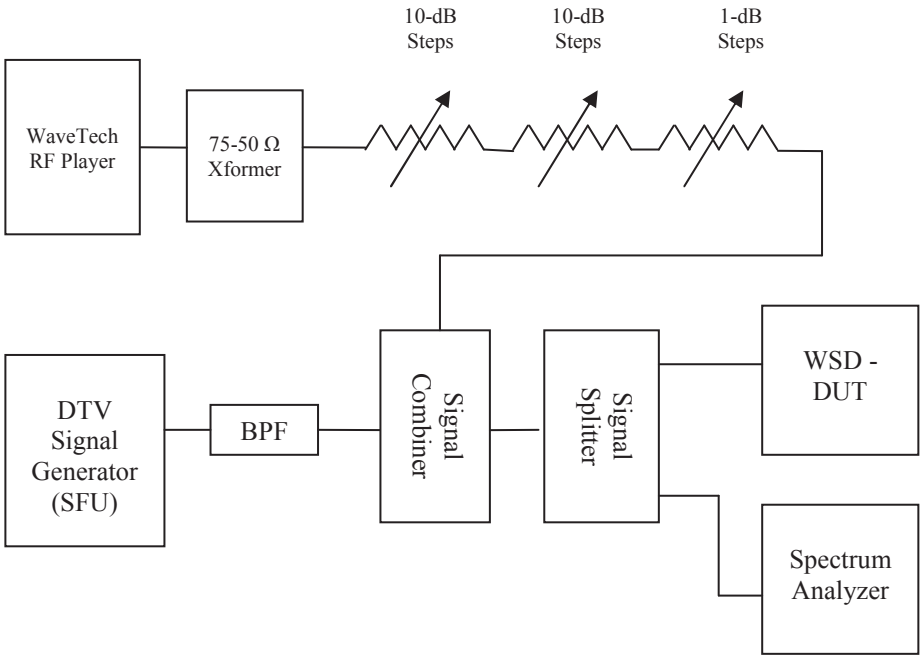

Figure A-3. Adjacent Channel Interference Measurement Equipment Configuration.

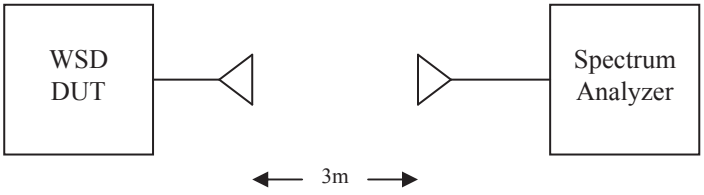

Figure A-4. Spurious Emission and EIRP Measurement Equipment Configuration.

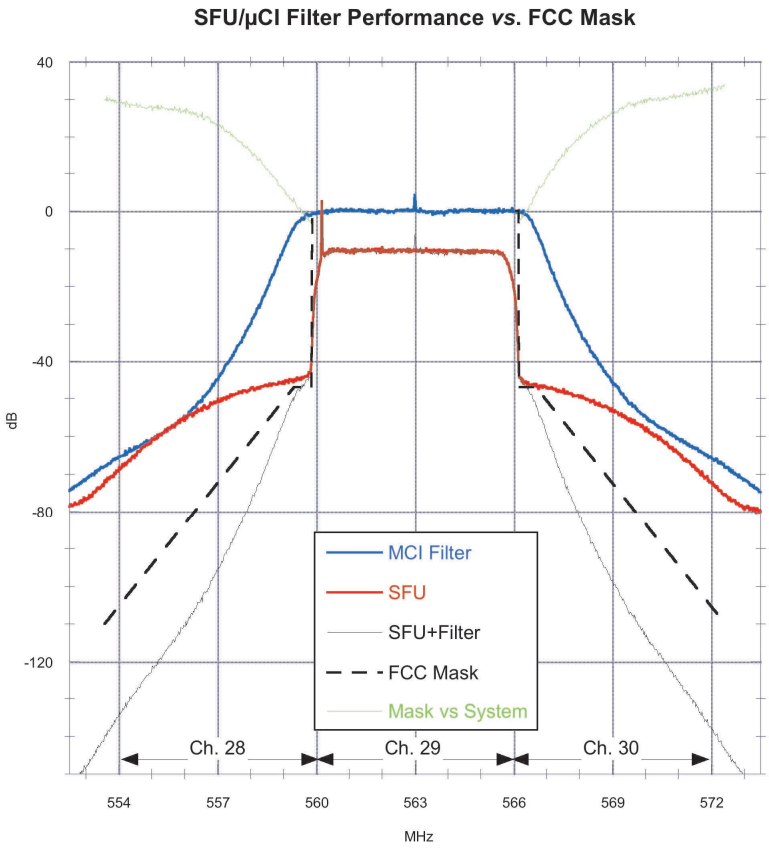

Figure A-5. Filtered SFU Signal Compared to DTV Emissions Mask.