

## **APPENDIX A: DATA SET ONE**

The following graphs show the spectrum analyzer trace data collected during the first part of the study. As has already been noted, there are a few locations where no trace data was saved to disk. These locations were: 4, 24, 25, 26, 27, 28, 29, 30, and consequently there are graphs missing at these locations.

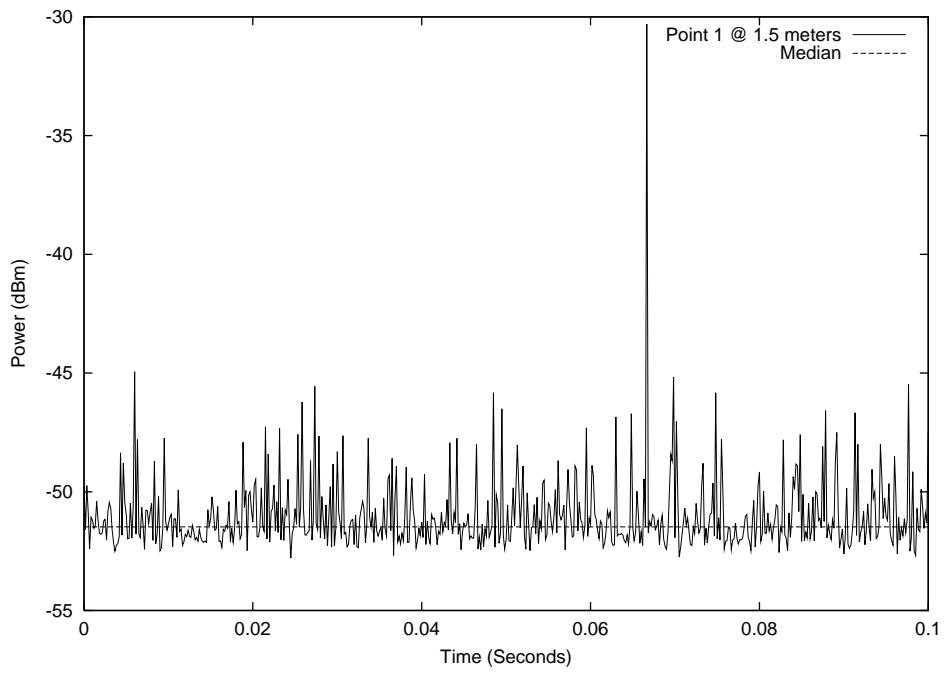


Figure 3: Power at 1.5 meters in location 1.

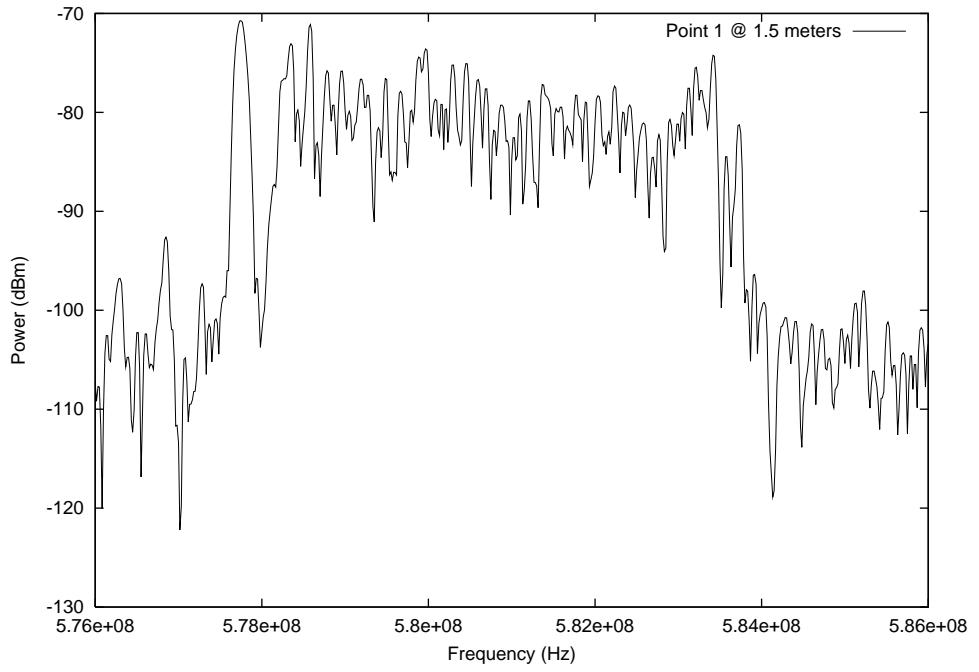


Figure 4: DTV envelope at 1.5 meters in location 1.

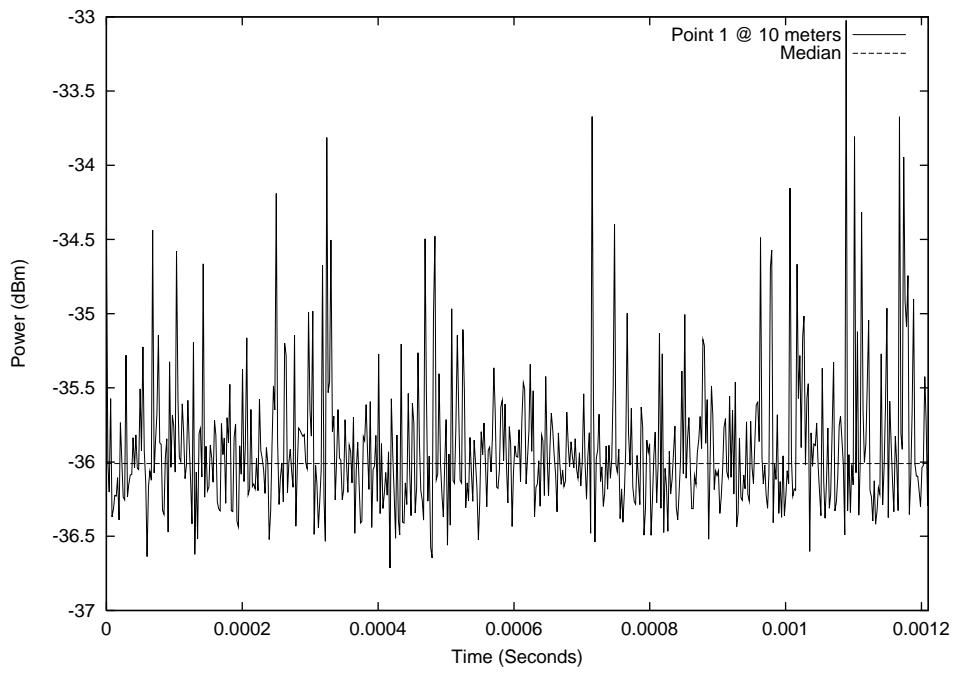


Figure 5: Power at 10 meters in location 1.

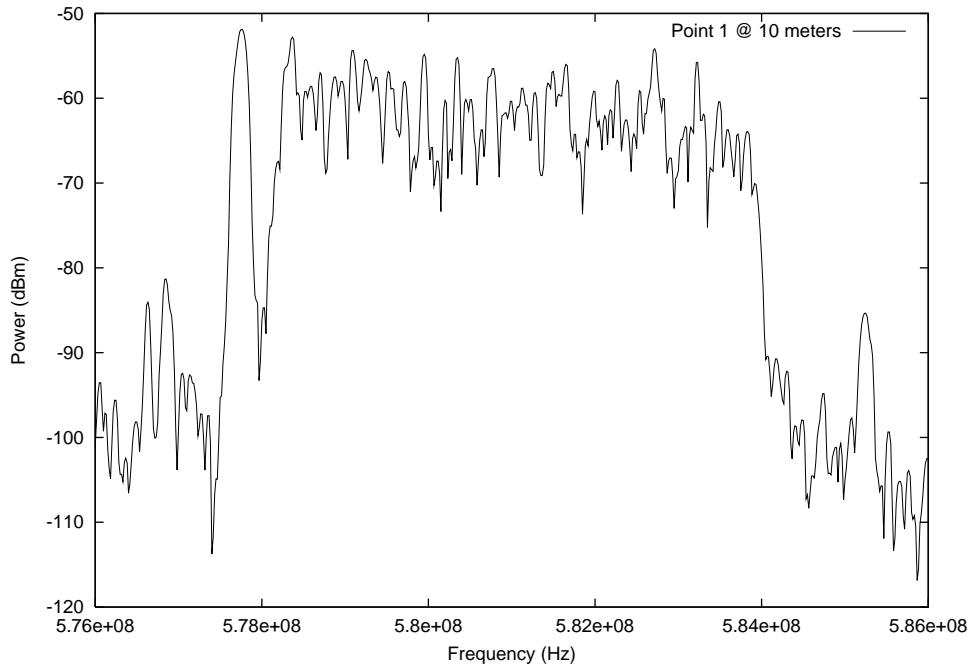


Figure 6: DTV envelope at 10 meters in location 1.

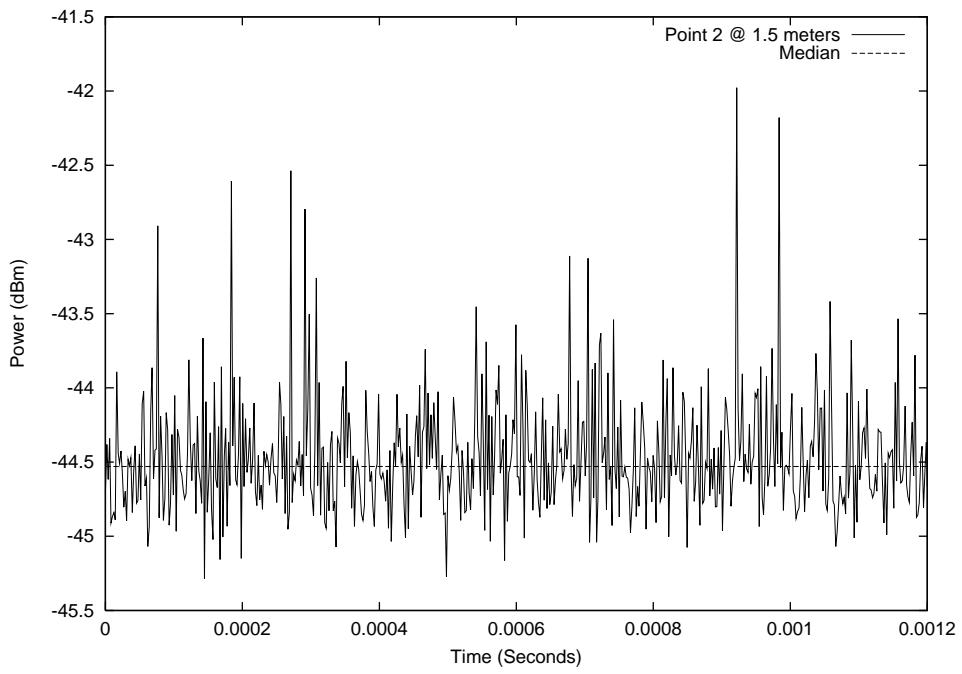


Figure 7: Power at 1.5 meters in location 2.

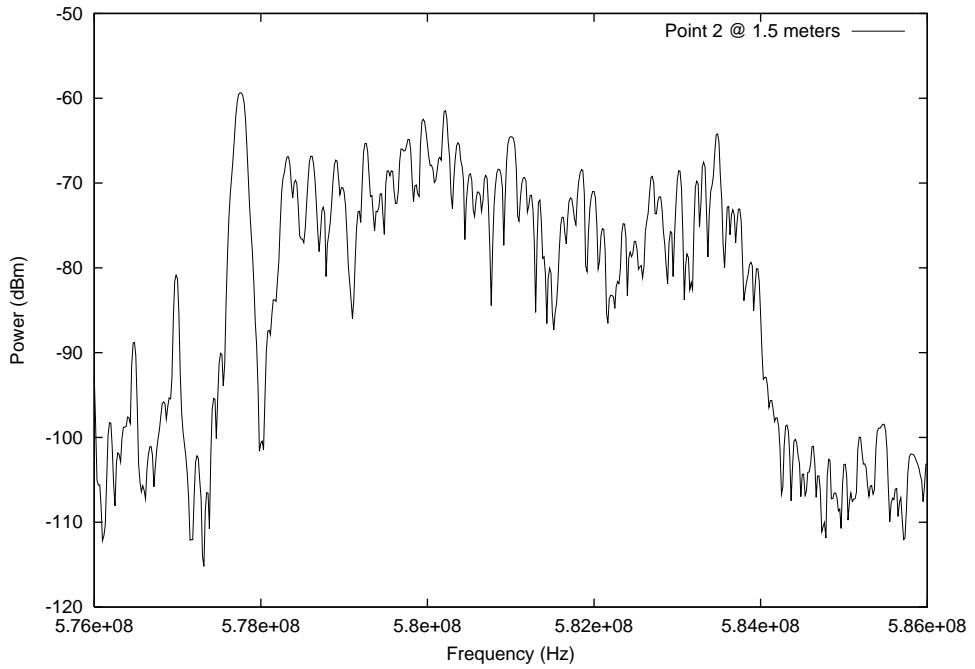


Figure 8: DTV envelope at 1.5 meters in location 2.

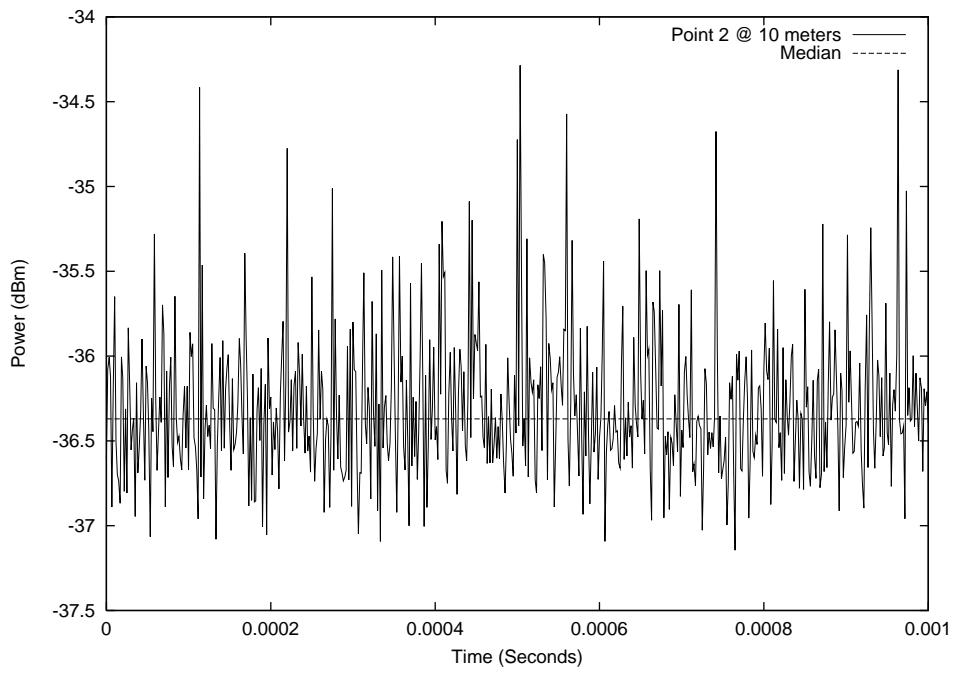


Figure 9: Power at 10 meters in location 2.

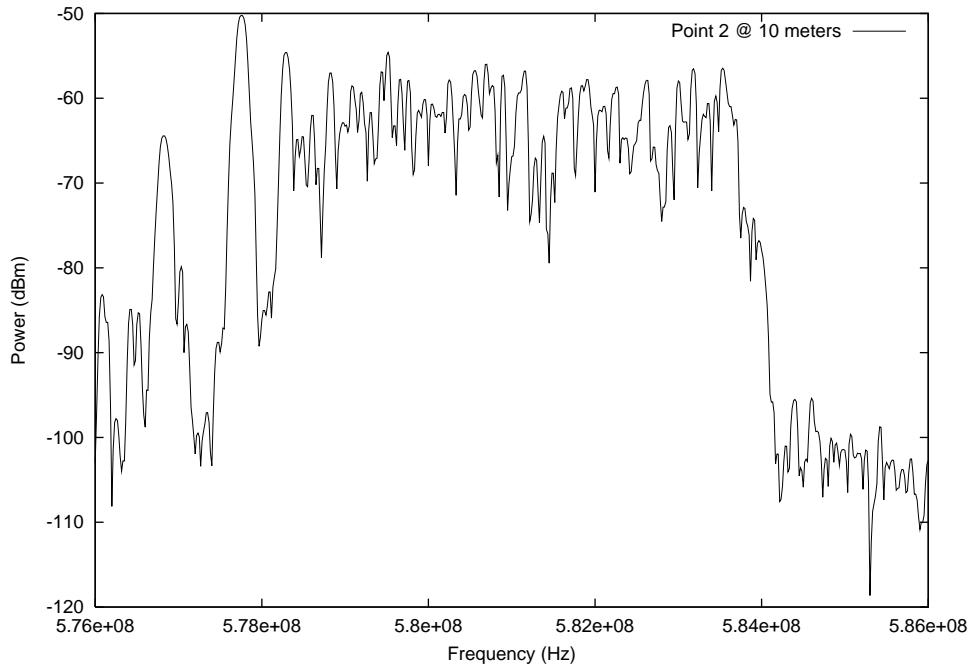


Figure 10: DTV envelope at 10 meters in location 2.

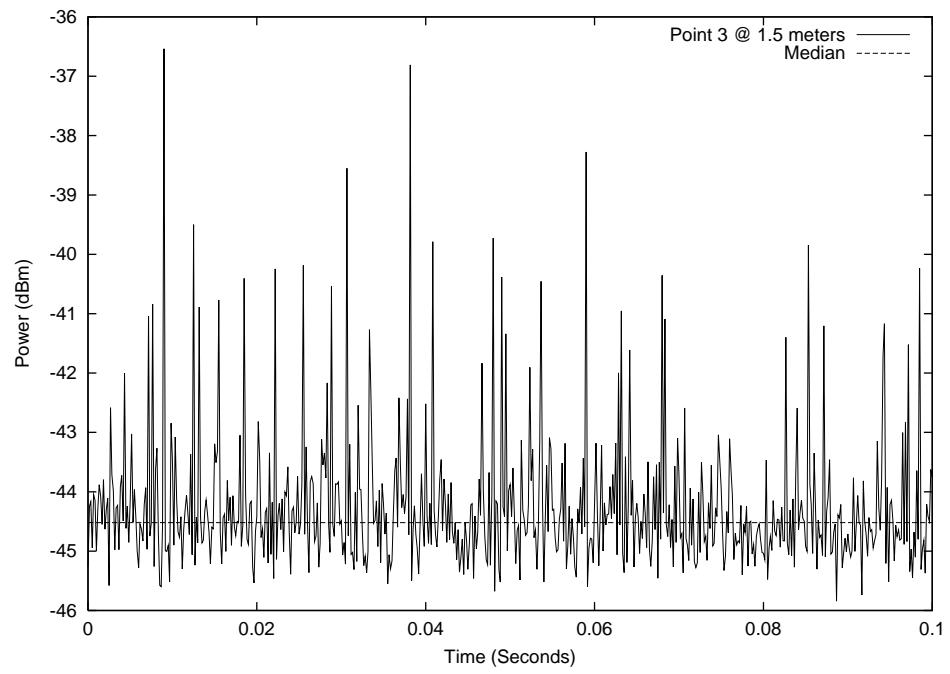


Figure 11: Power at 1.5 meters in location 3.

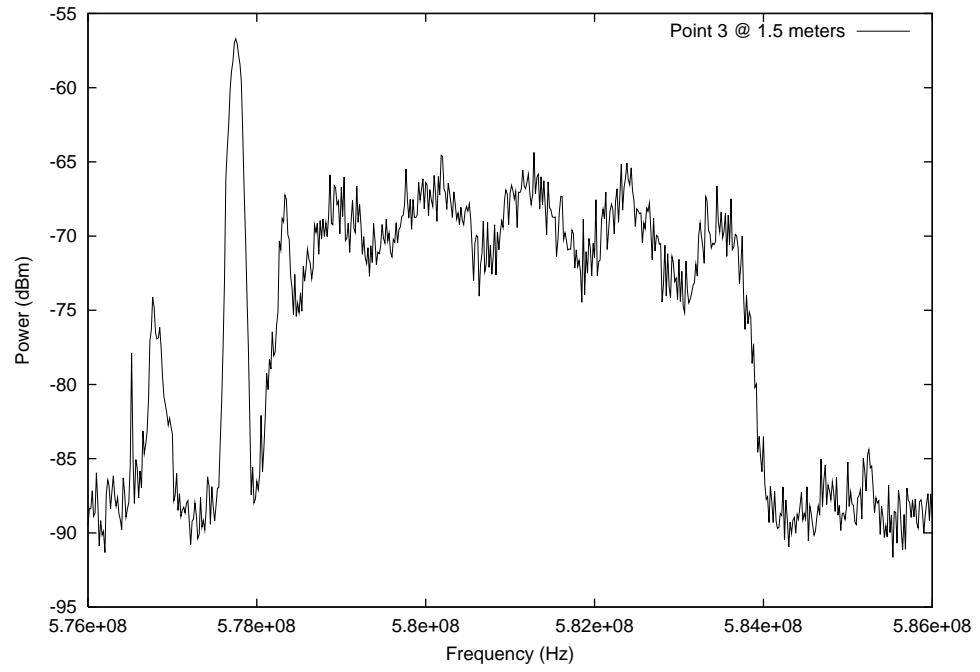


Figure 12: DTV envelope at 1.5 meters in location 3.

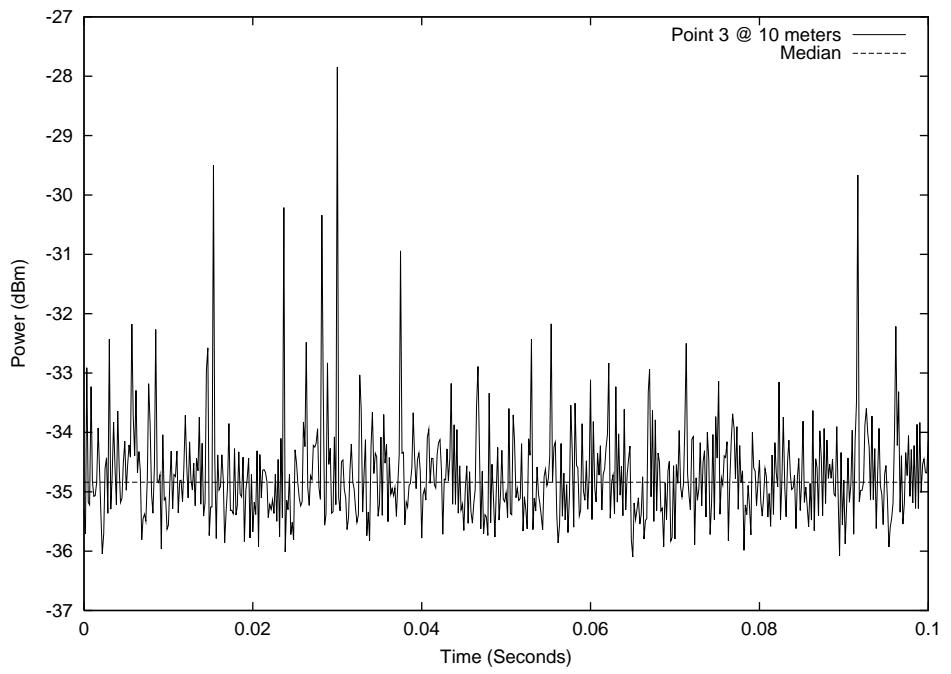


Figure 13: Power at 10 meters in location 3.

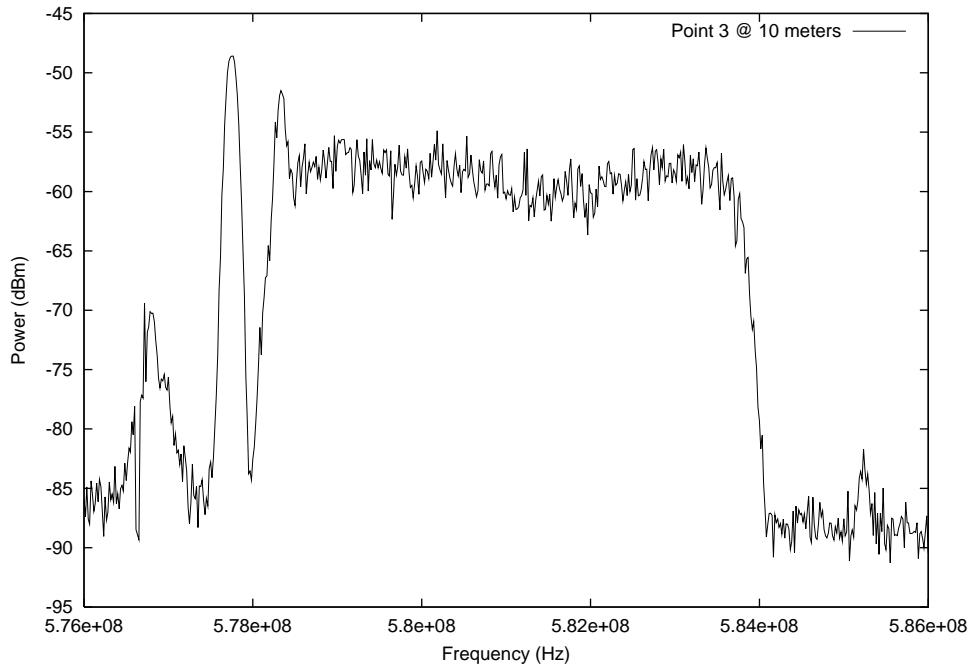


Figure 14: DTV envelope at 10 meters in location 3.

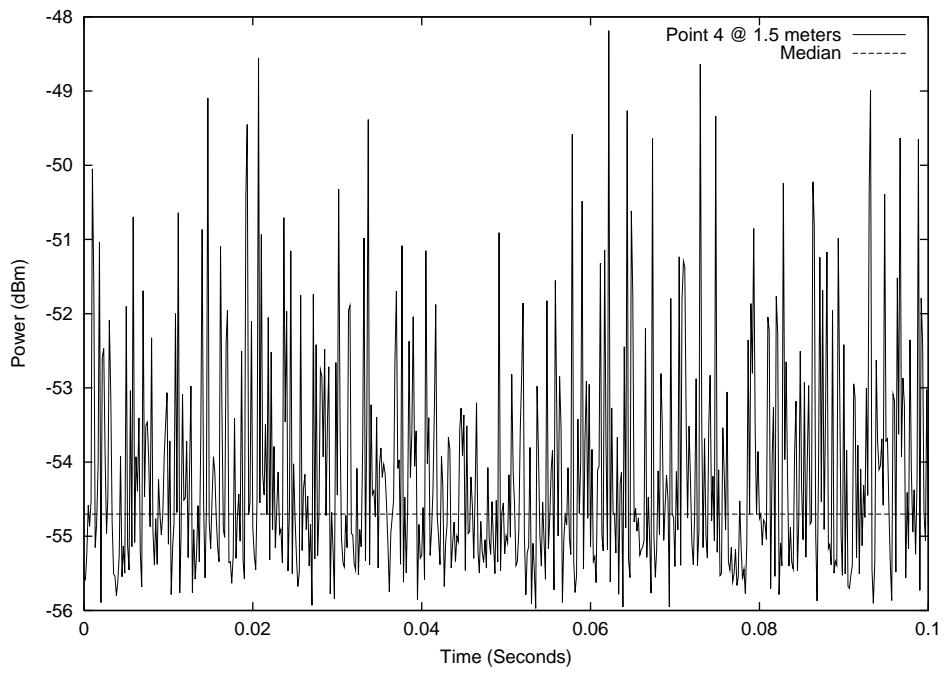


Figure 15: Power at 1.5 meters in location 4.

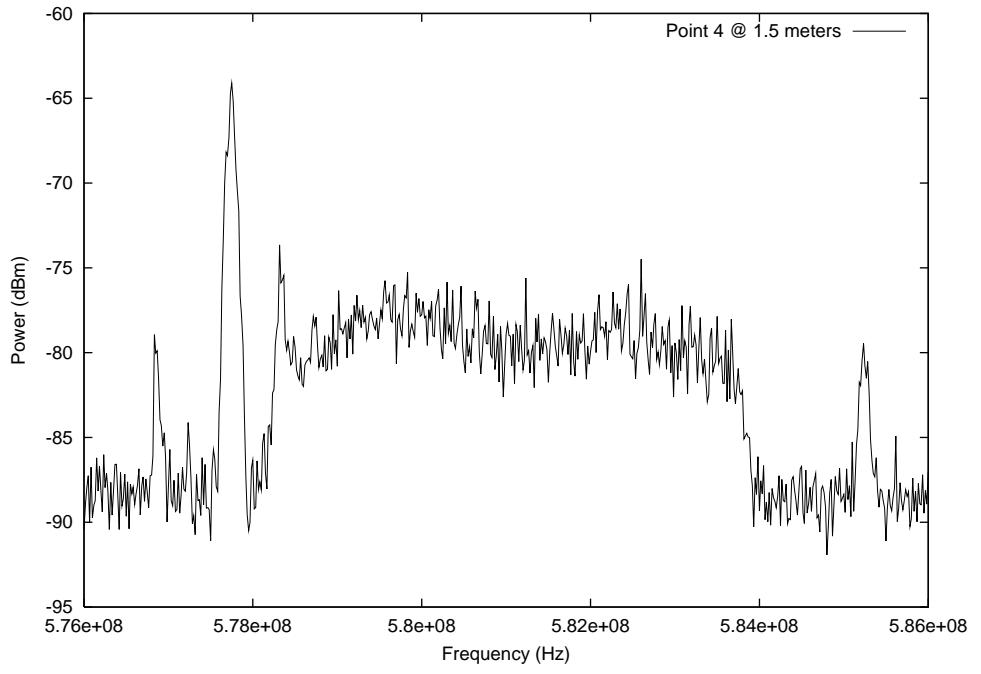


Figure 16: DTV envelope at 1.5 meters in location 4.

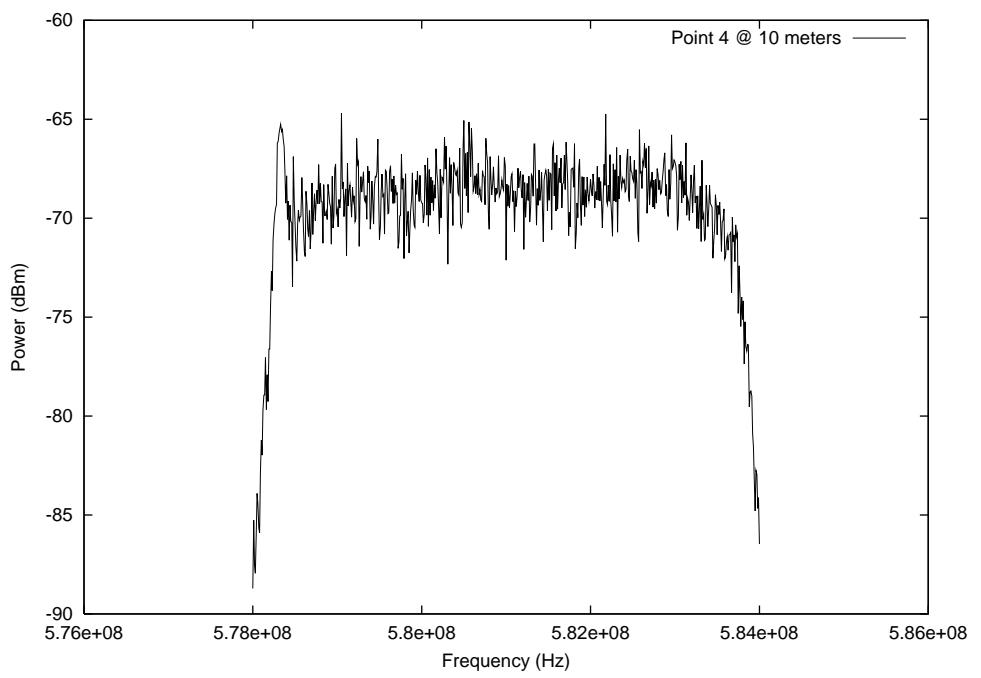


Figure 17: DTV envelope at 10 meters in location 4.

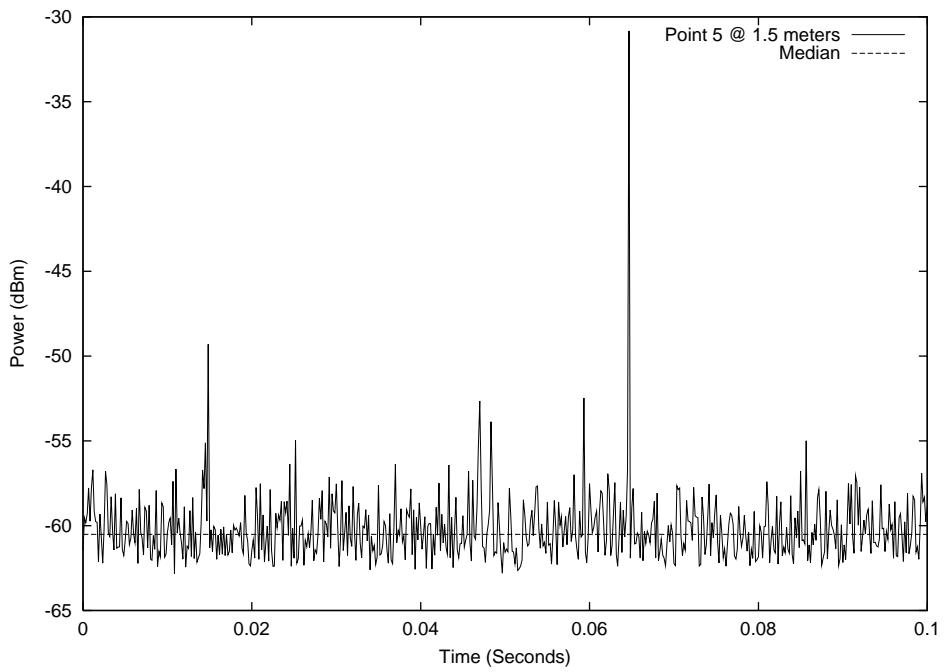


Figure 18: Power at 1.5 meters in location 5.

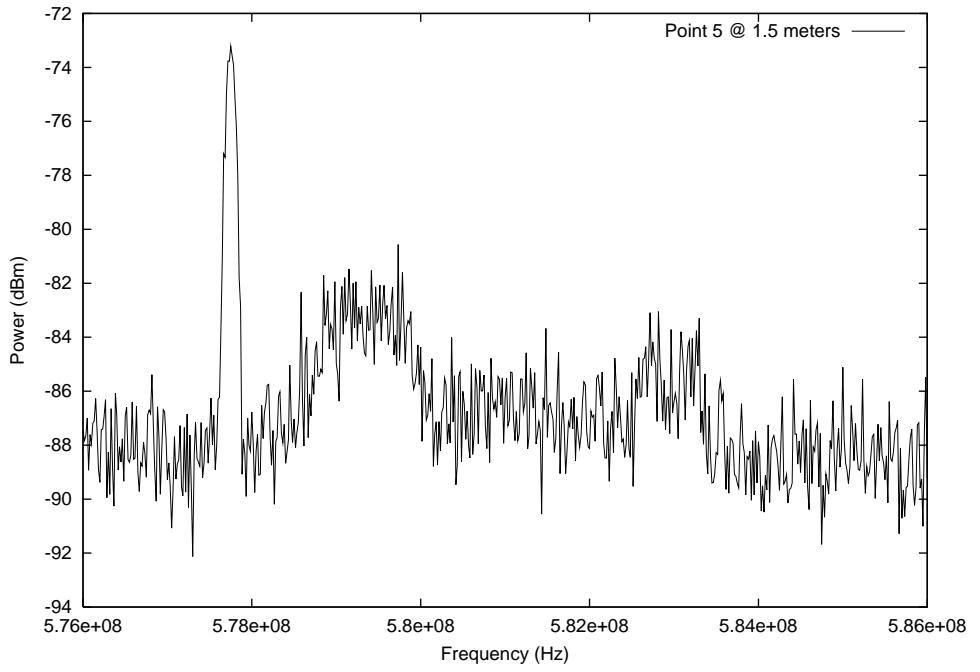


Figure 19: DTV envelope at 1.5 meters in location 5.

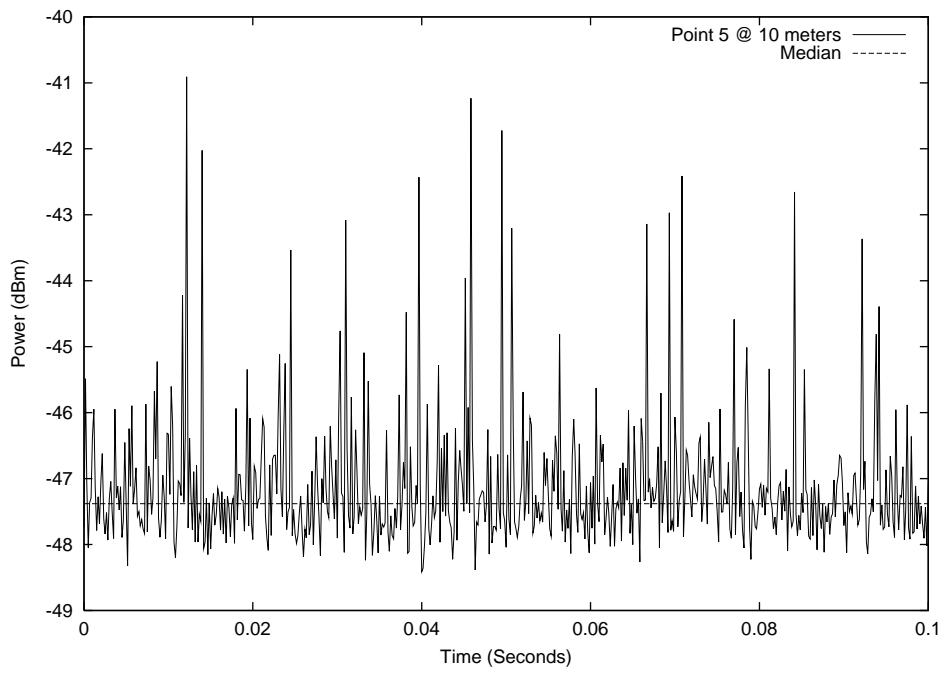


Figure 20: Power at 10 meters in location 5.

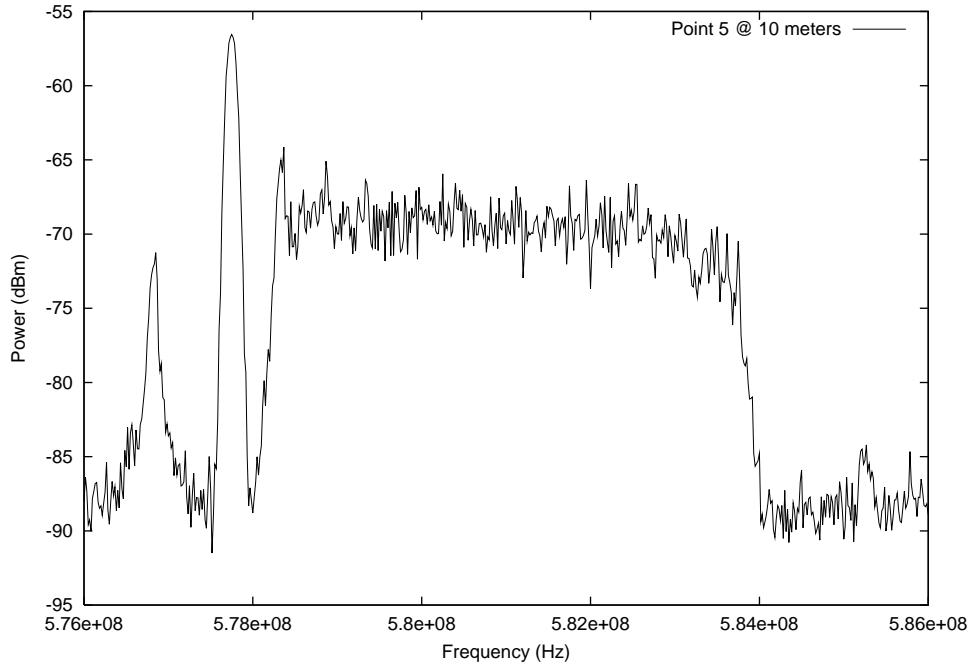


Figure 21: DTV envelope at 10 meters in location 5.

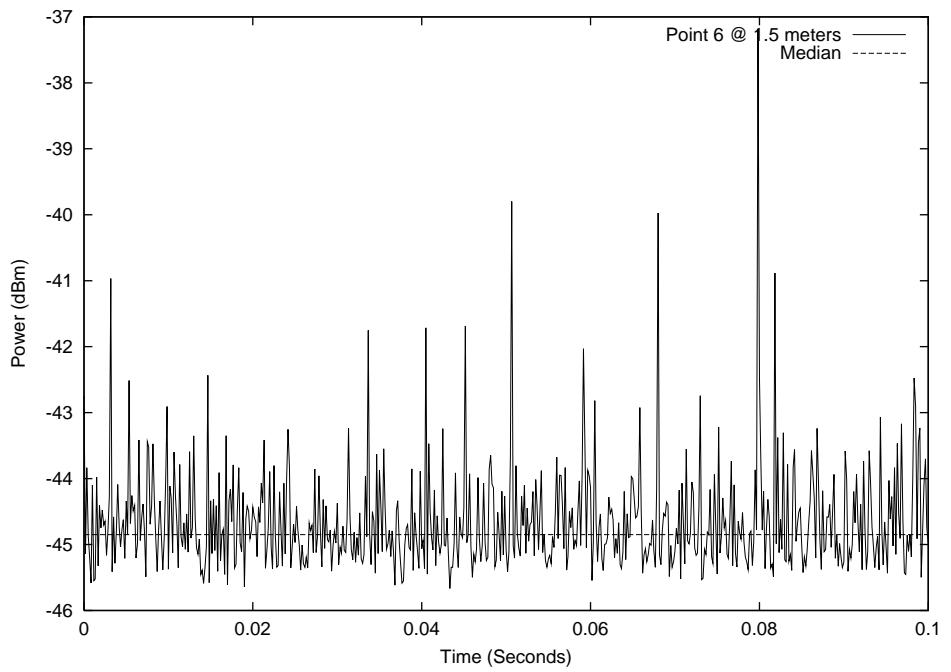


Figure 22: Power at 1.5 meters in location 6.

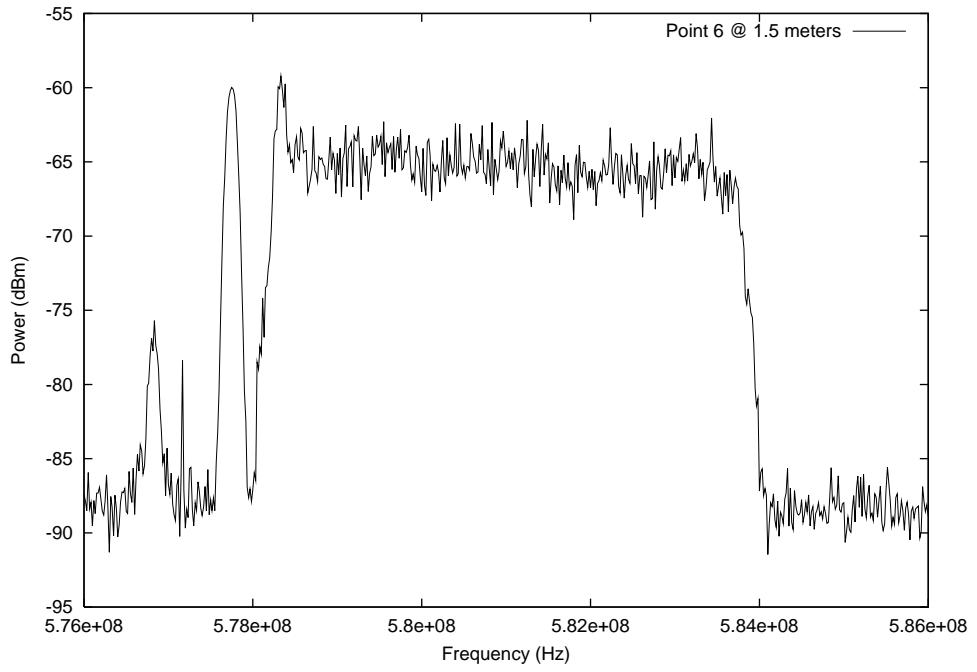


Figure 23: DTV envelope at 1.5 meters in location 6.

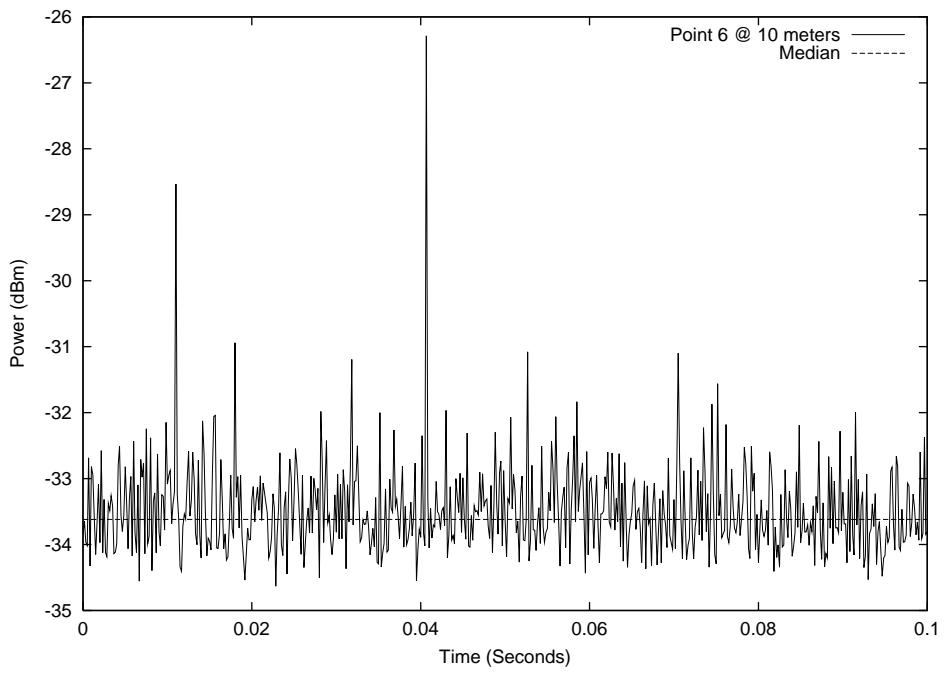


Figure 24: Power at 10 meters in location 6.

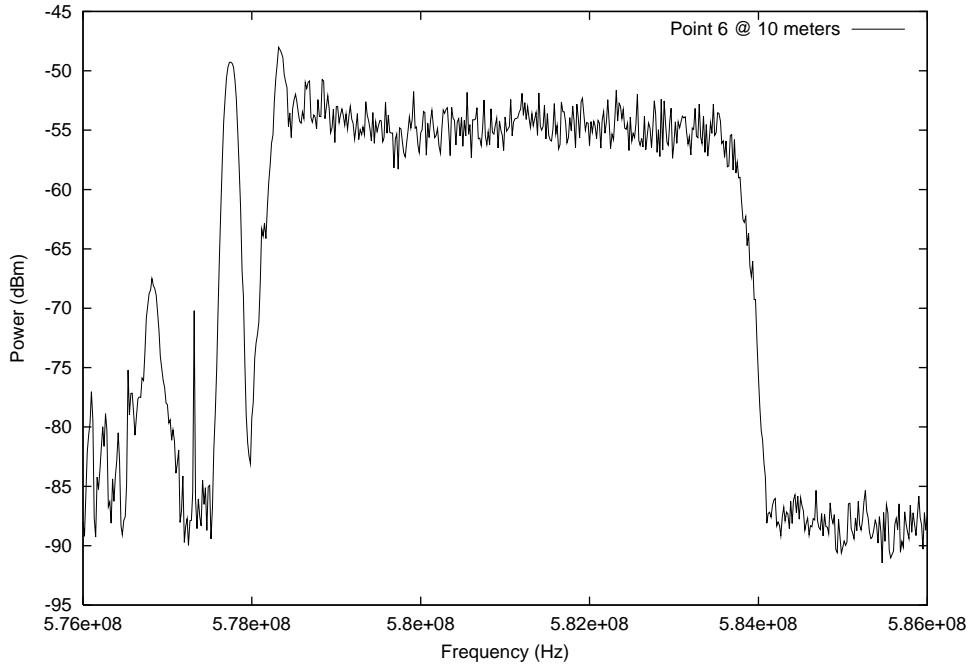


Figure 25: DTV envelope at 10 meters in location 6.

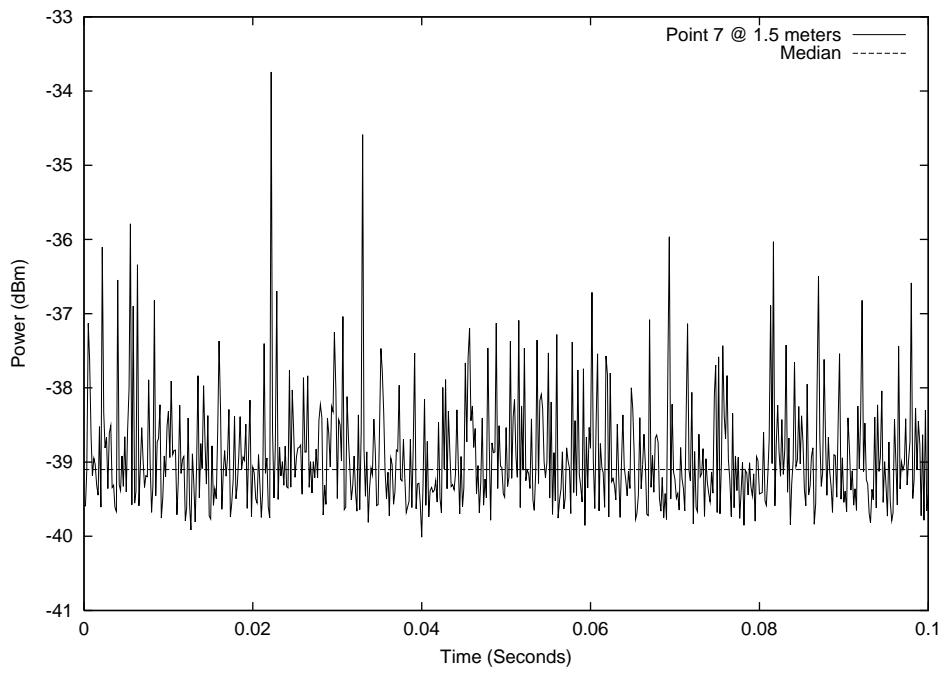


Figure 26: Power at 1.5 meters in location 7.

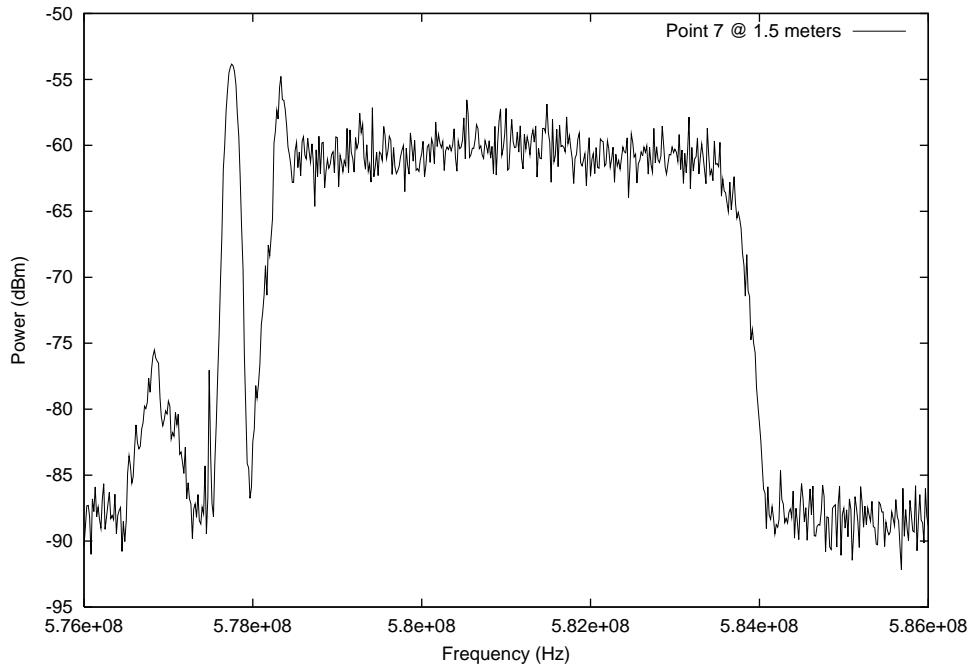


Figure 27: DTV envelope at 1.5 meters in location 7.

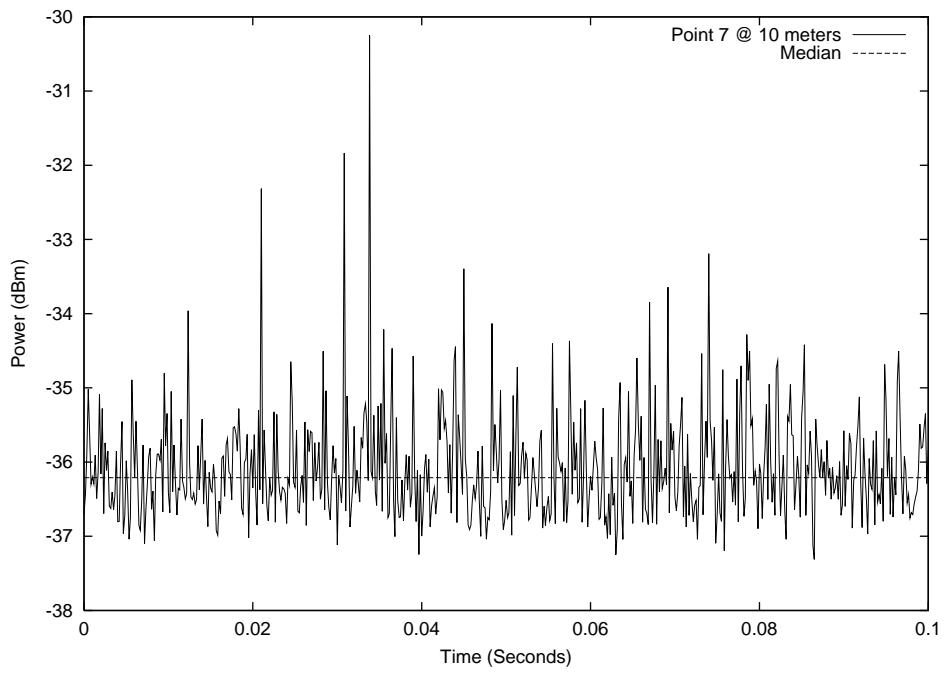


Figure 28: Power at 10 meters in location 7.

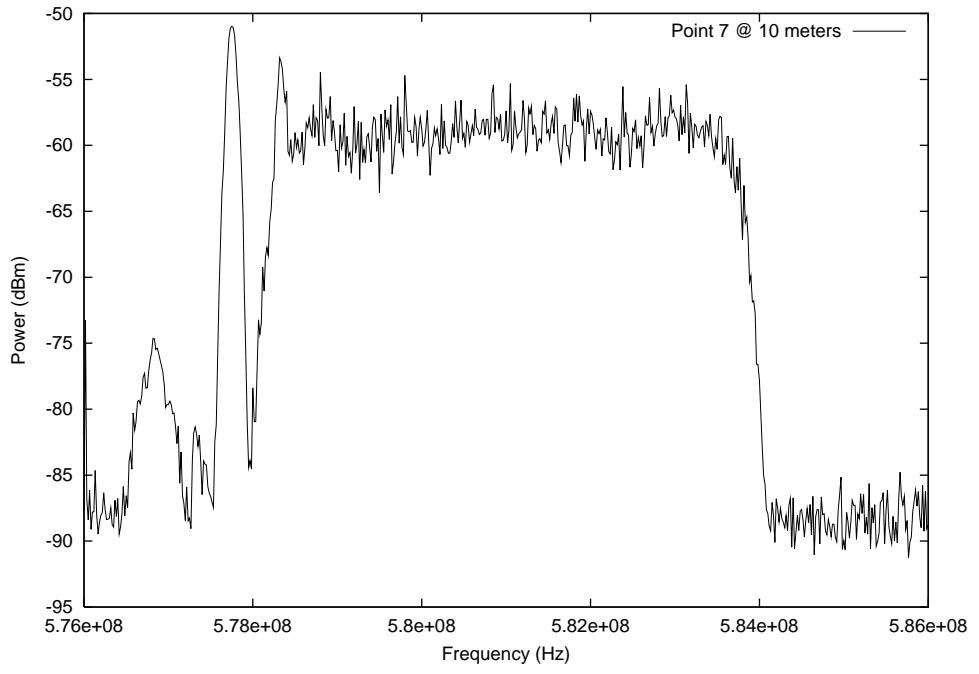


Figure 29: DTV envelope at 10 meters in location 7.

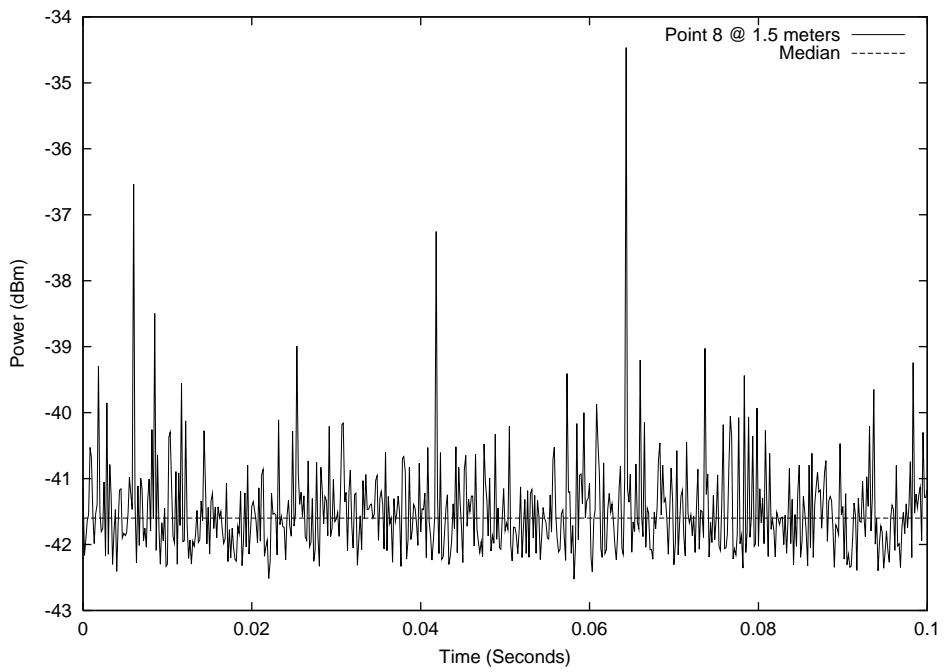


Figure 30: Power at 1.5 meters in location 8.

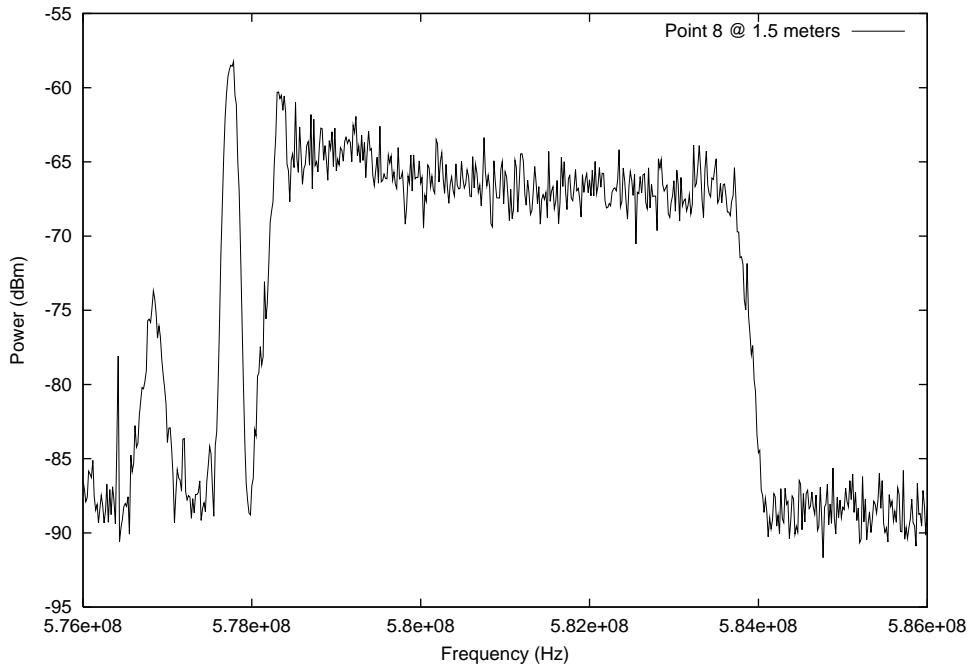


Figure 31: DTV envelope at 1.5 meters in location 8.

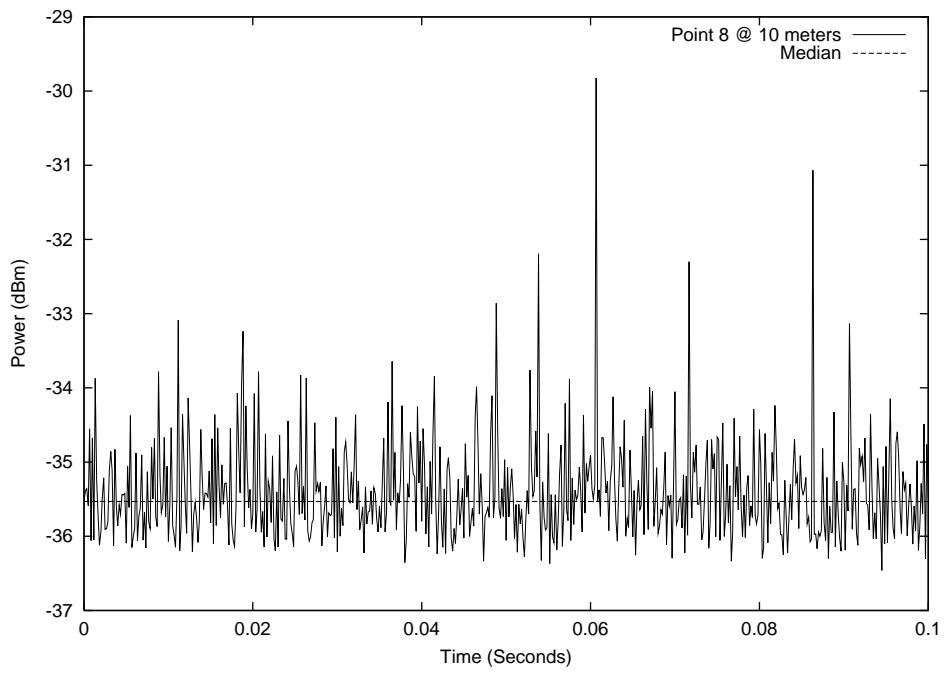


Figure 32: Power at 10 meters in location 8.

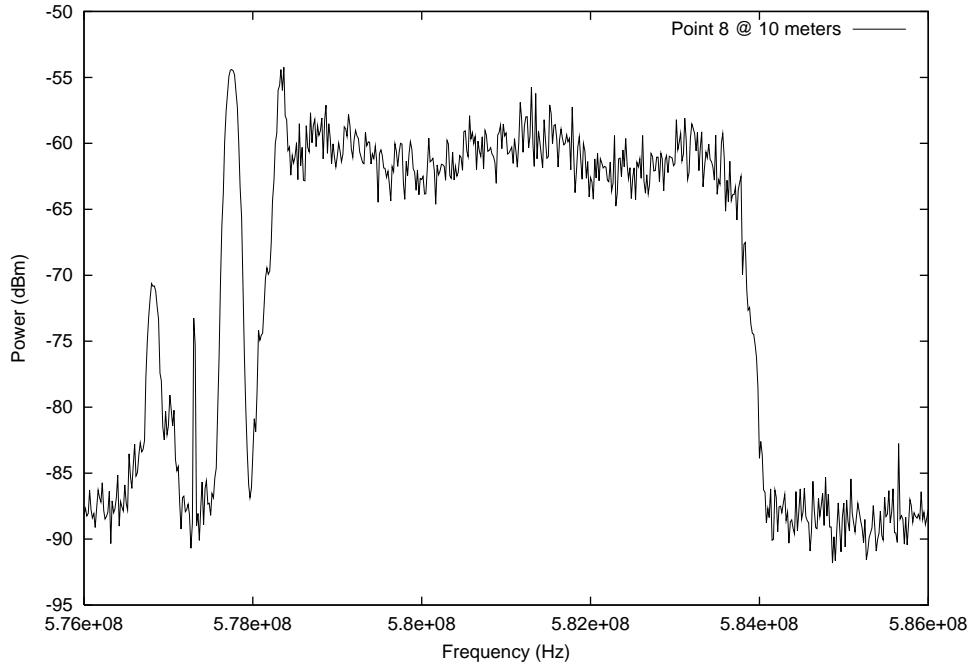


Figure 33: DTV envelope at 10 meters in location 8.

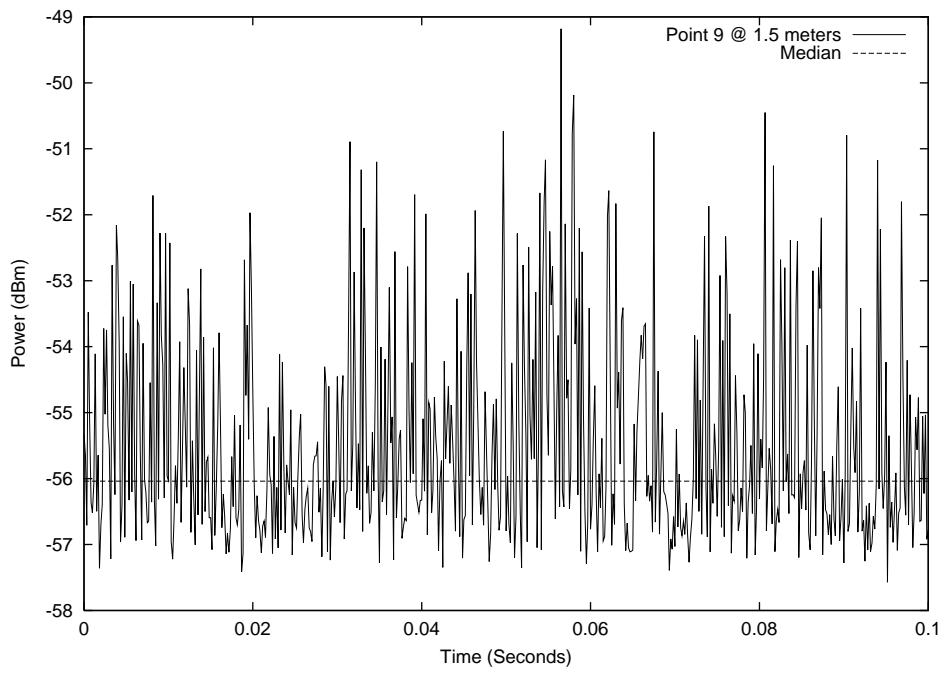


Figure 34: Power at 1.5 meters in location 9.

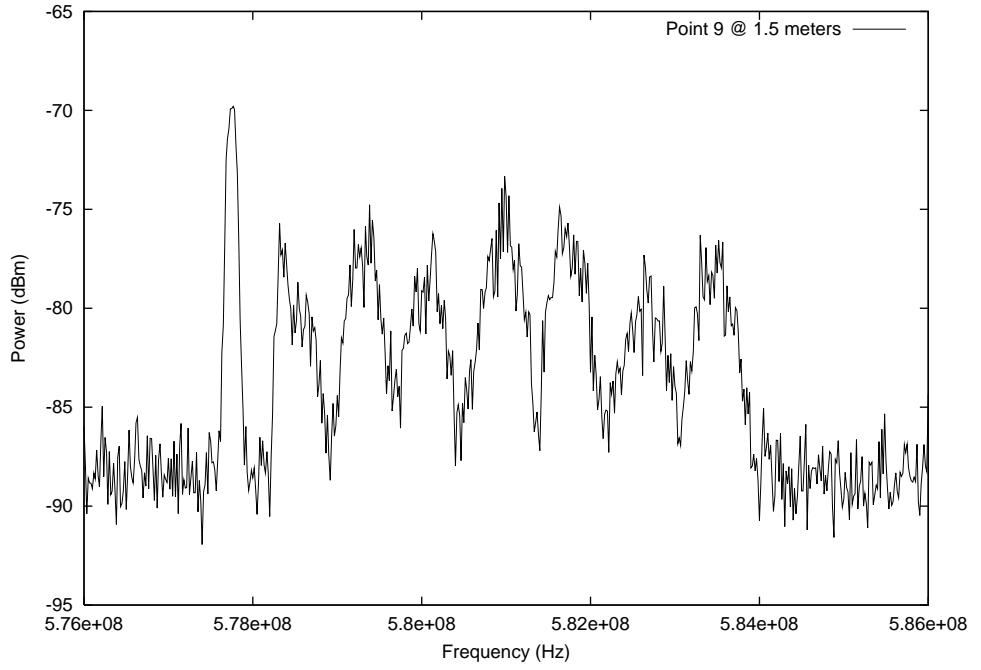


Figure 35: DTV envelope at 1.5 meters in location 9.

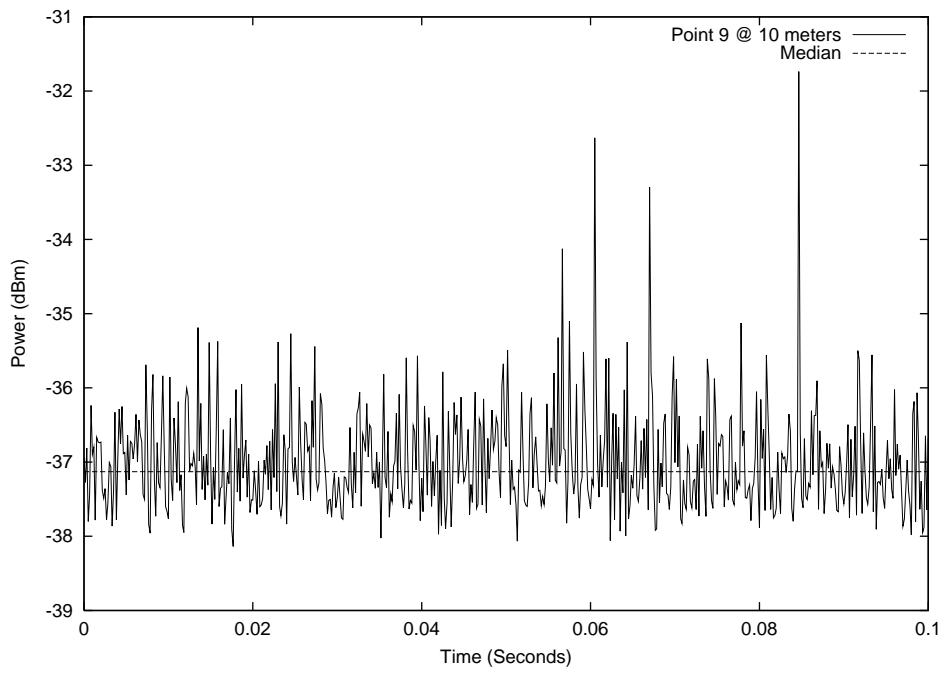


Figure 36: Power at 10 meters in location 9.

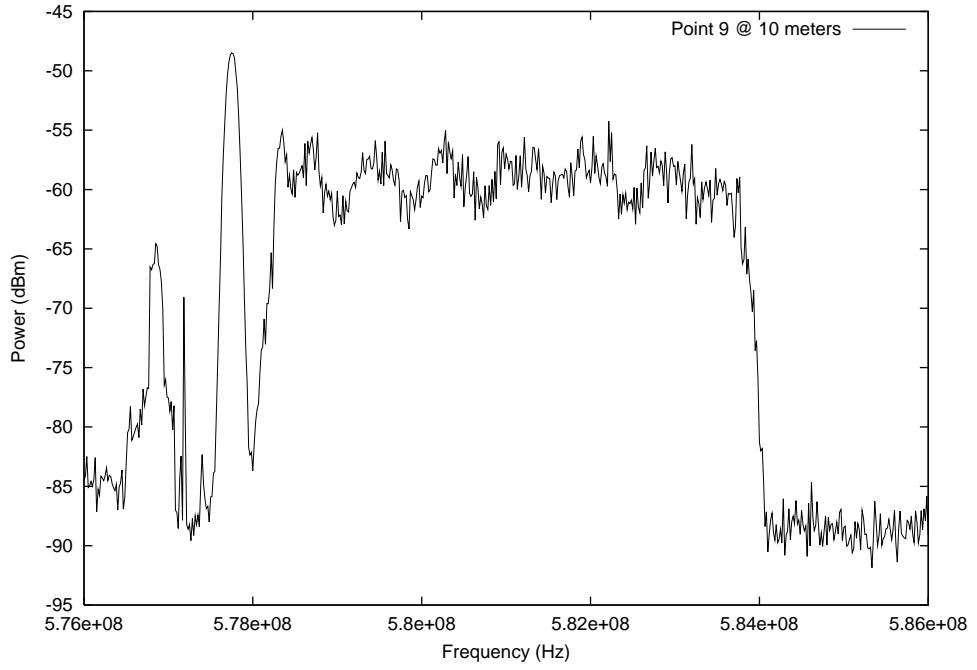


Figure 37: DTV envelope at 10 meters in location 9.

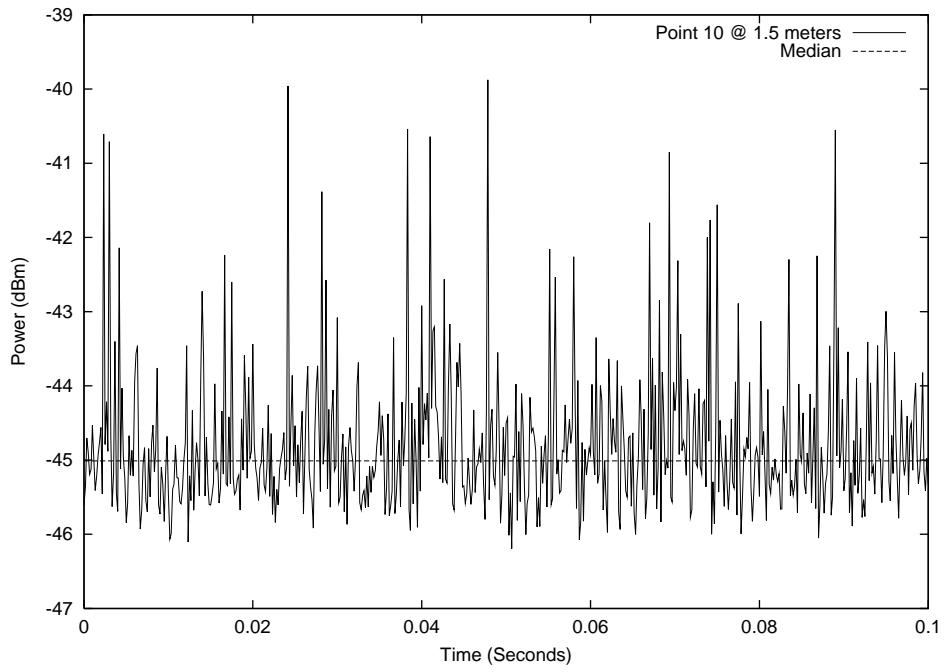


Figure 38: Power at 1.5 meters in location 10.

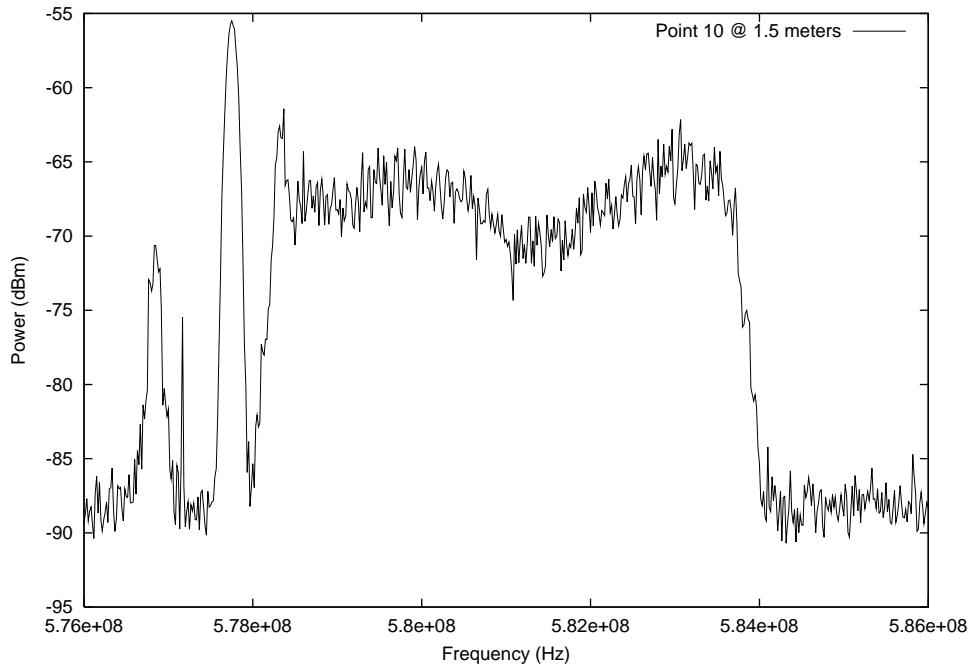


Figure 39: DTV envelope at 1.5 meters in location 10.

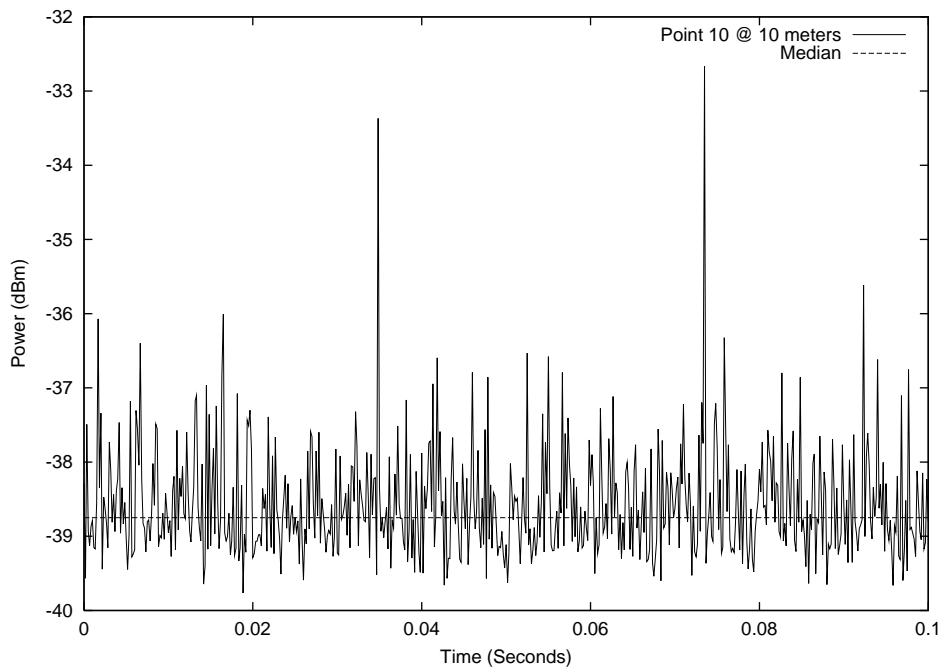


Figure 40: Power at 10 meters in location 10.

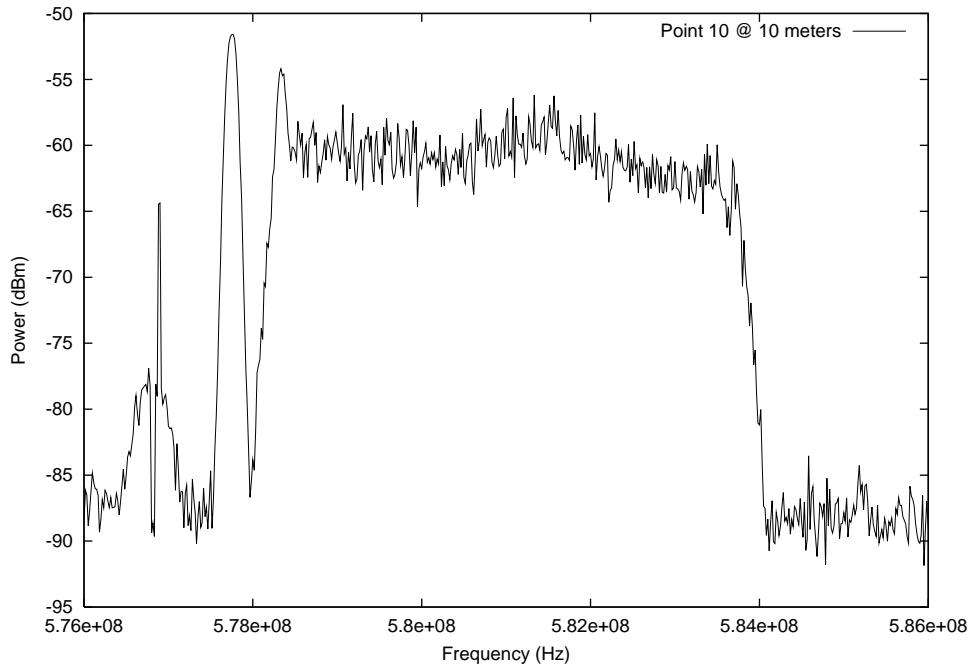


Figure 41: DTV envelope at 10 meters in location 10.

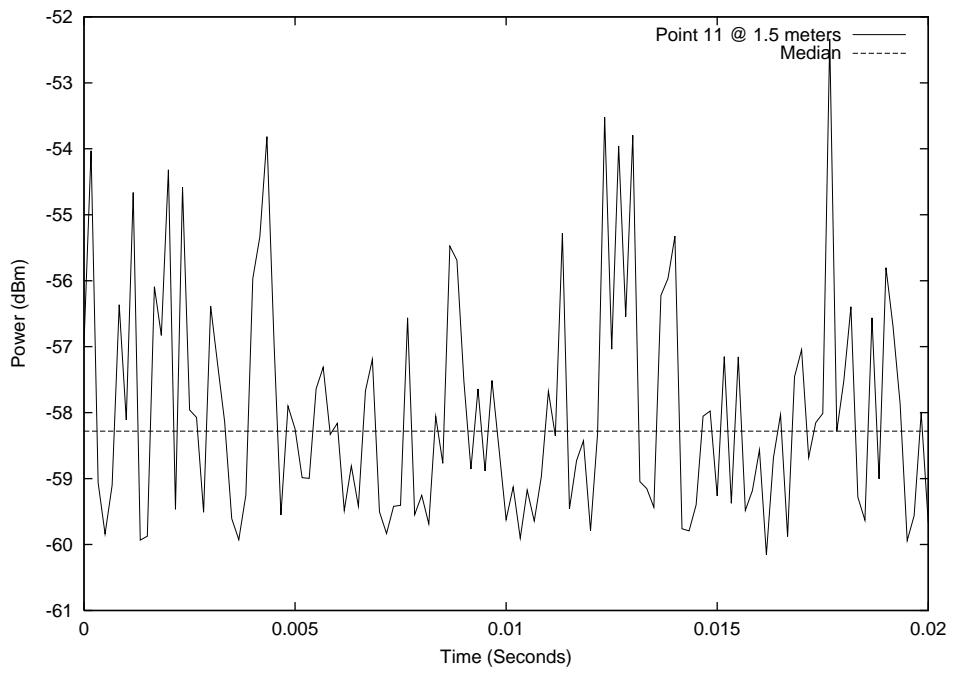


Figure 42: Power at 1.5 meters in location 11.

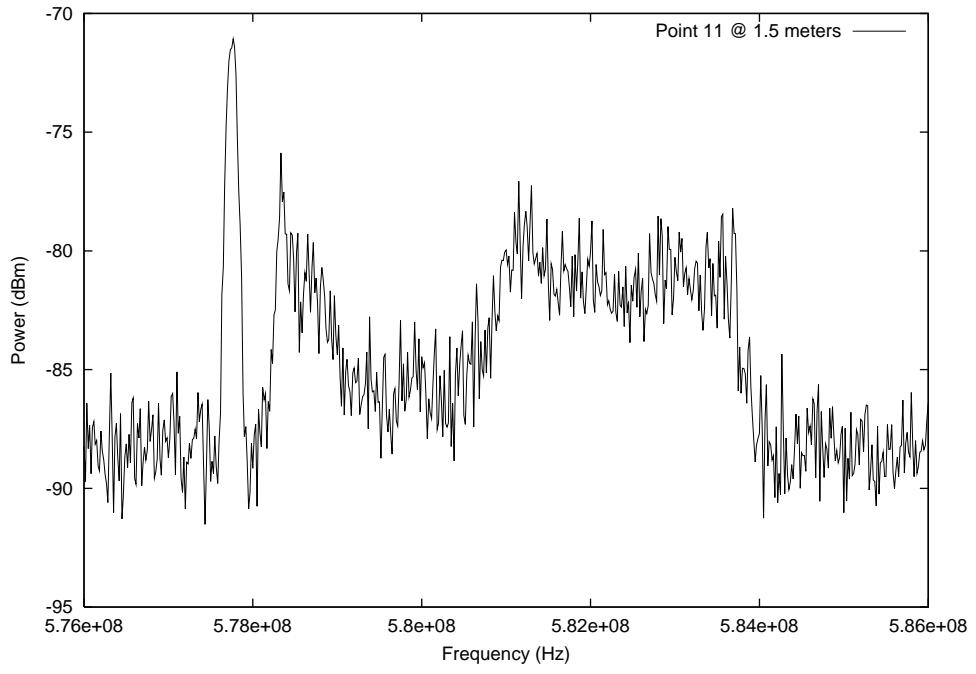


Figure 43: DTV envelope at 1.5 meters in location 11.

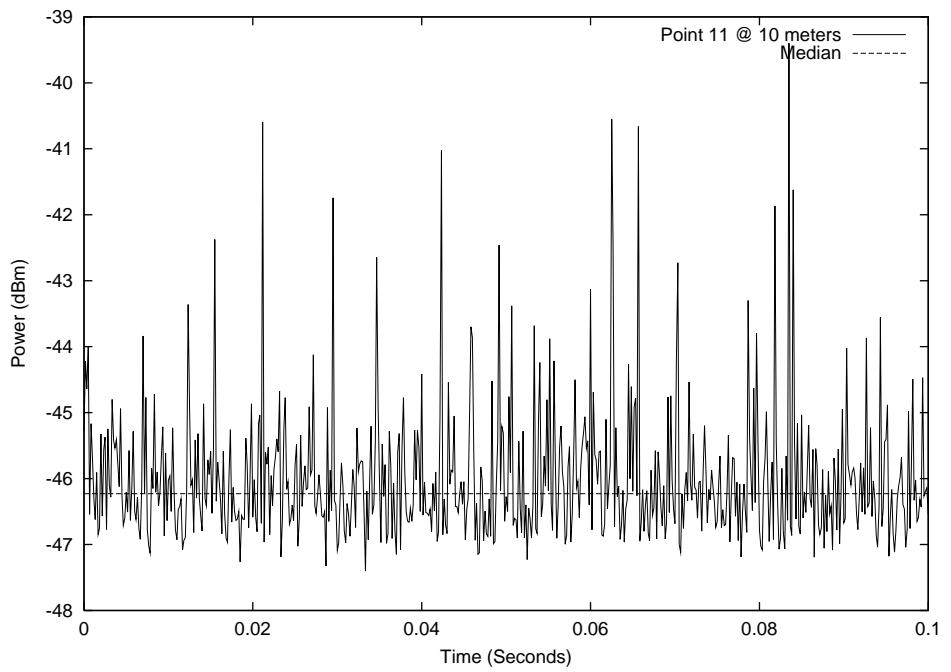


Figure 44: Power at 10 meters in location 11.

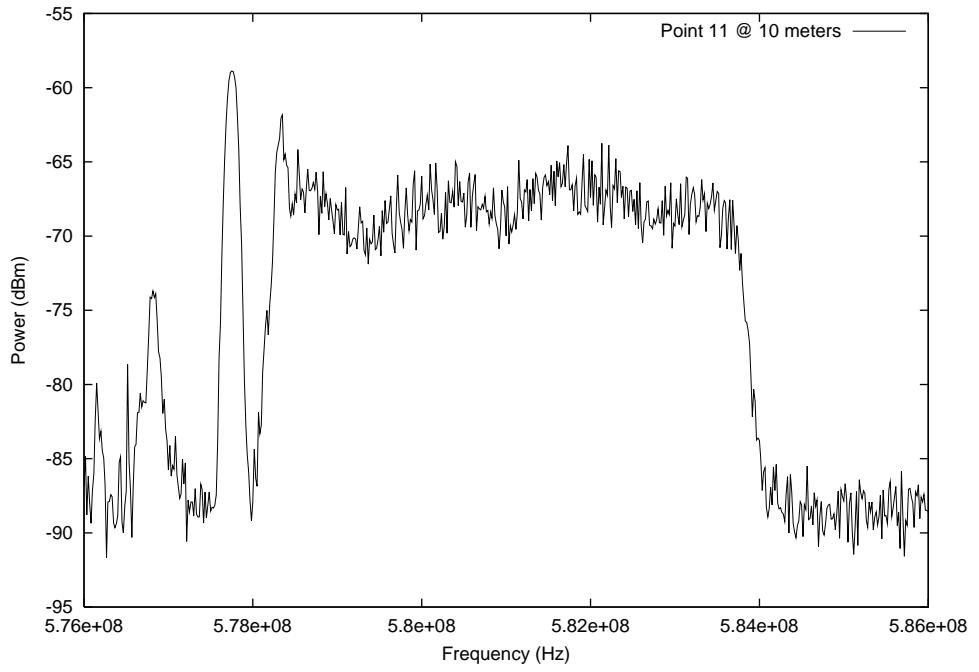


Figure 45: DTV envelope at 10 meters in location 11.

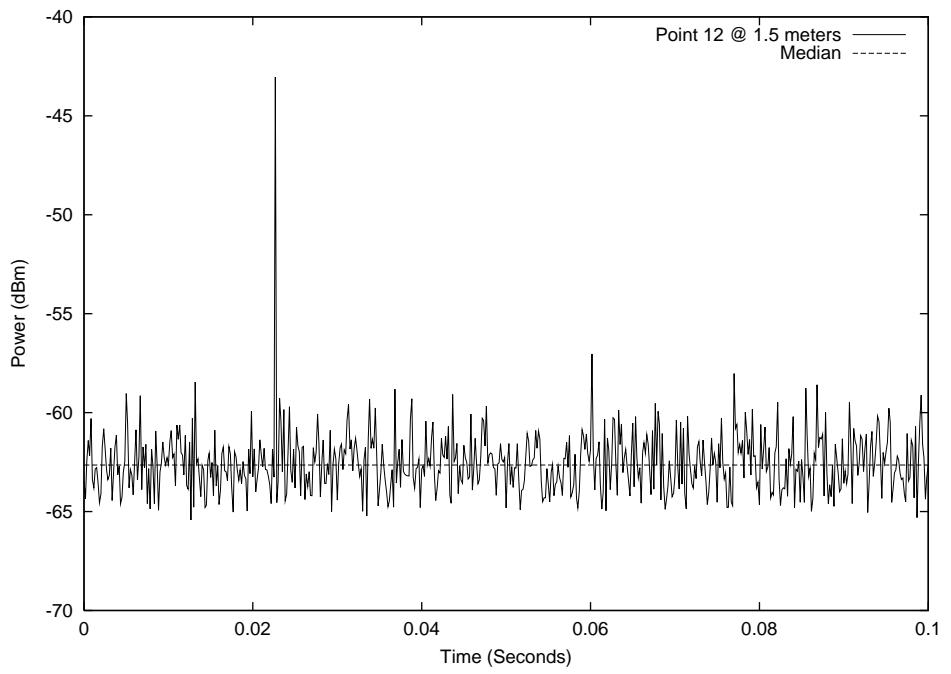


Figure 46: Power at 1.5 meters in location 12.

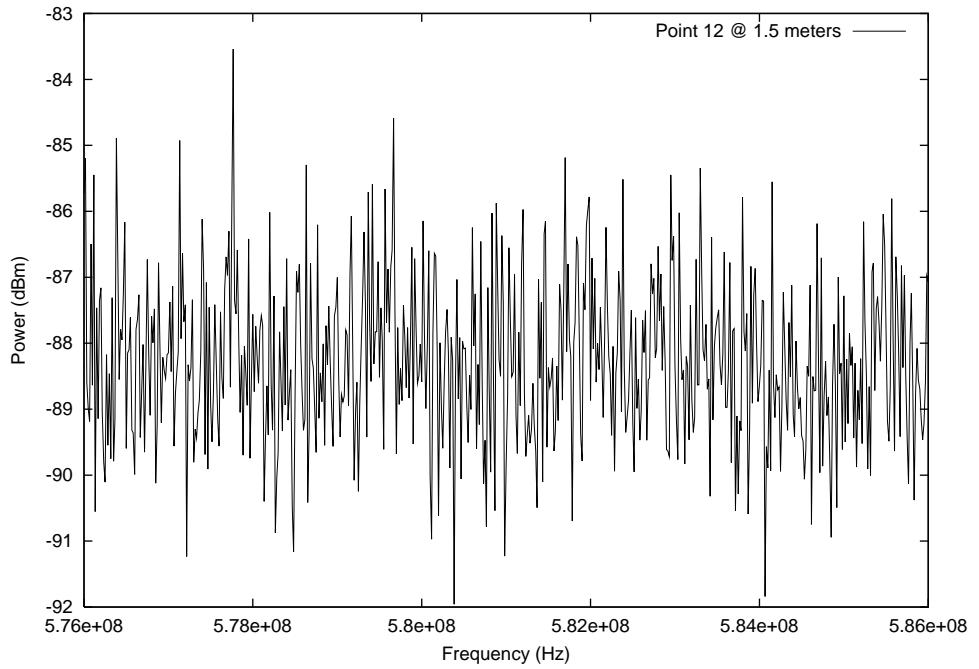


Figure 47: DTV envelope at 1.5 meters in location 12.

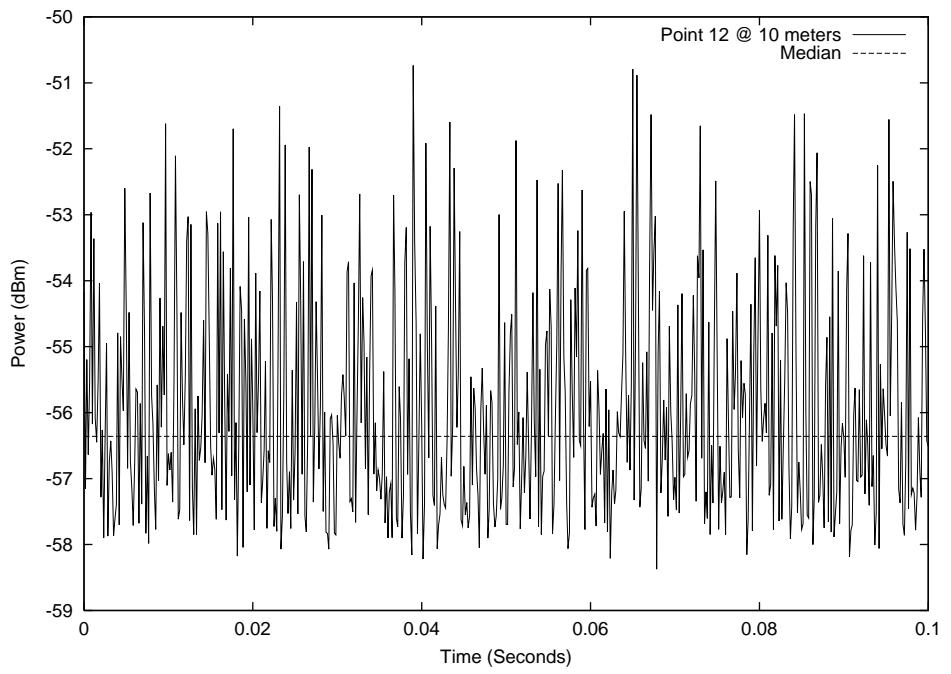


Figure 48: Power at 10 meters in location 12.

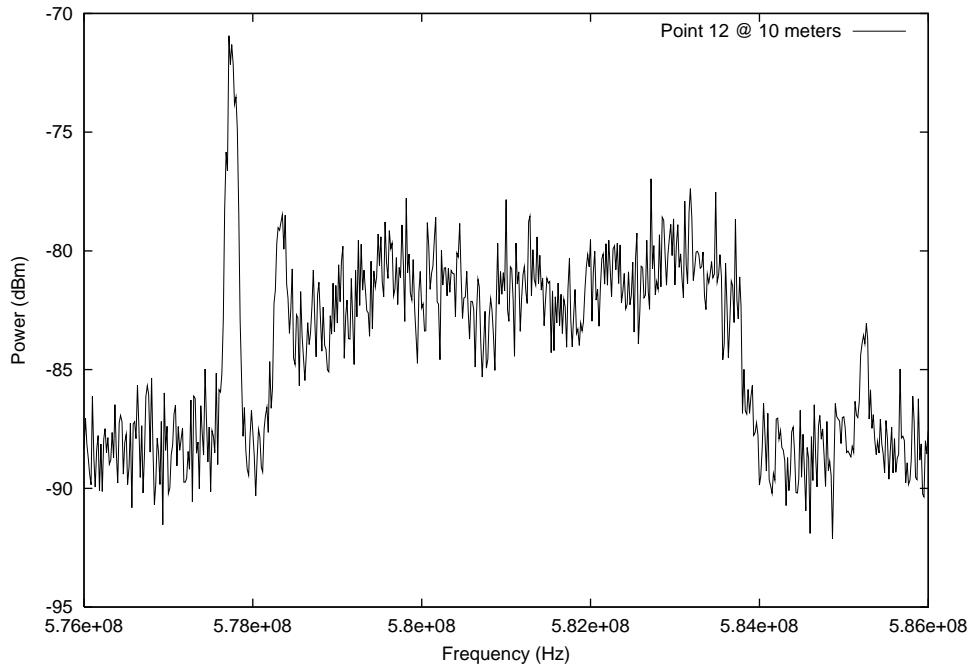


Figure 49: DTV envelope at 10 meters in location 12.

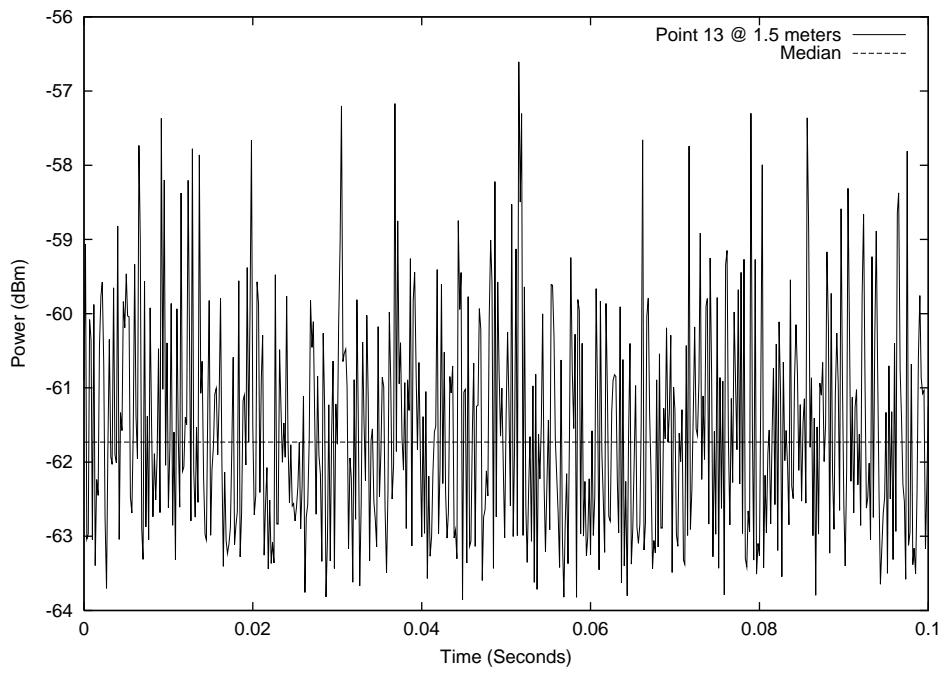


Figure 50: Power at 1.5 meters in location 13.

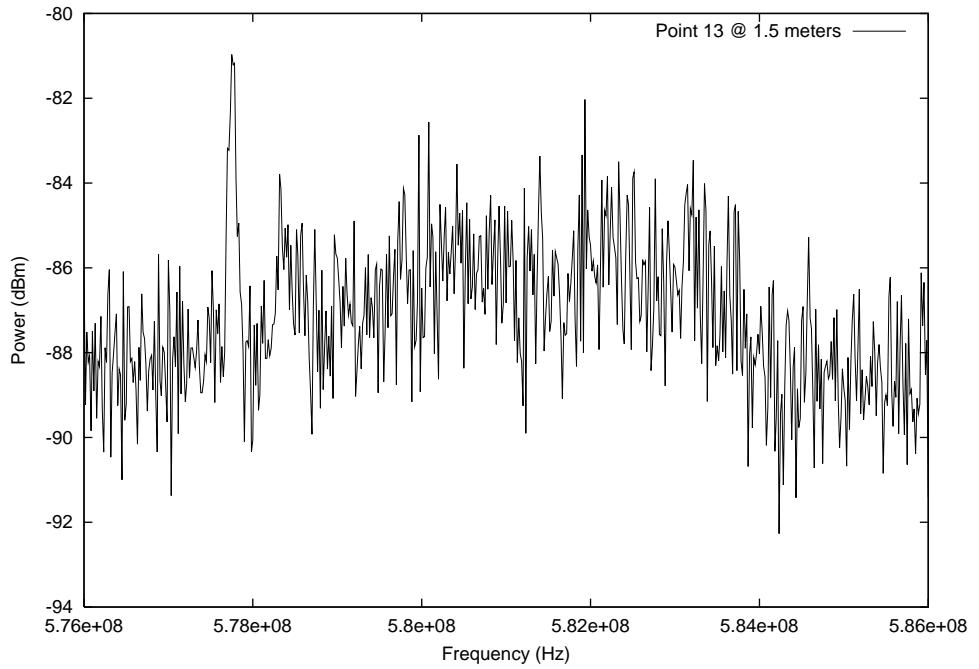


Figure 51: DTV envelope at 1.5 meters in location 13.

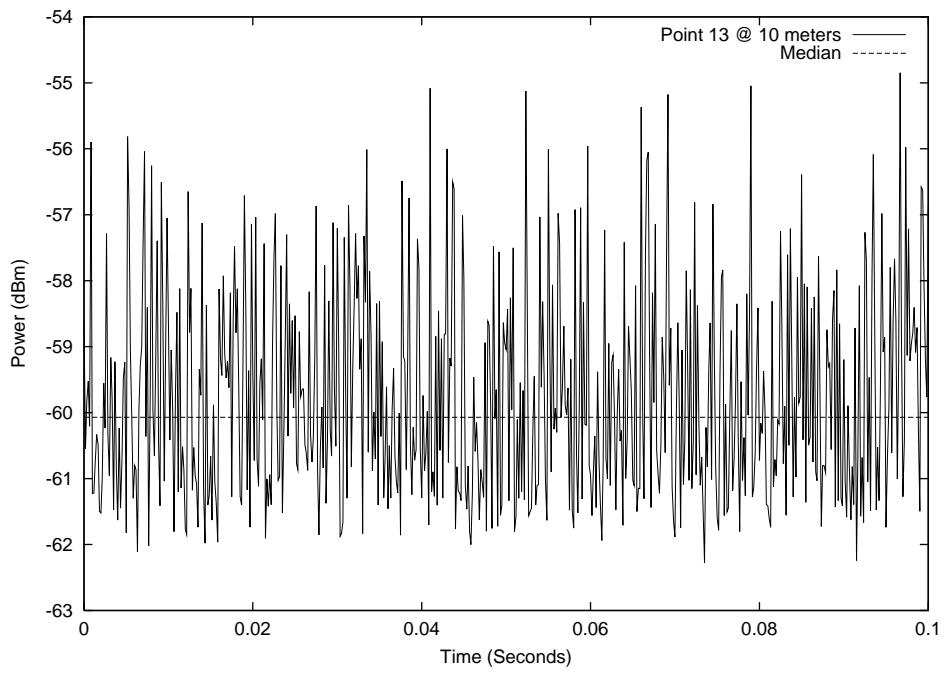


Figure 52: Power at 10 meters in location 13.

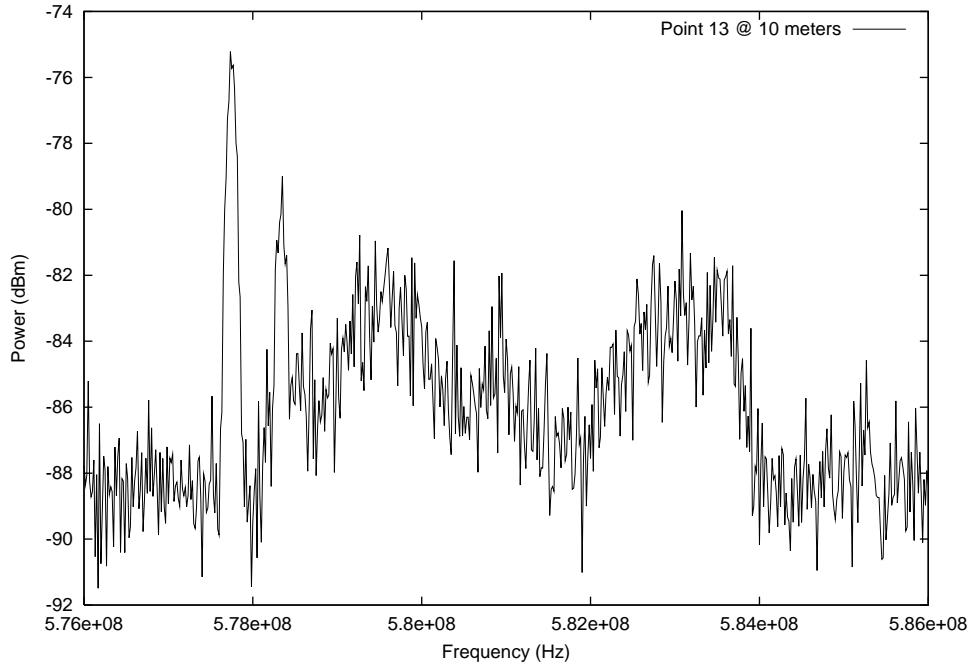


Figure 53: DTV envelope at 10 meters in location 13.

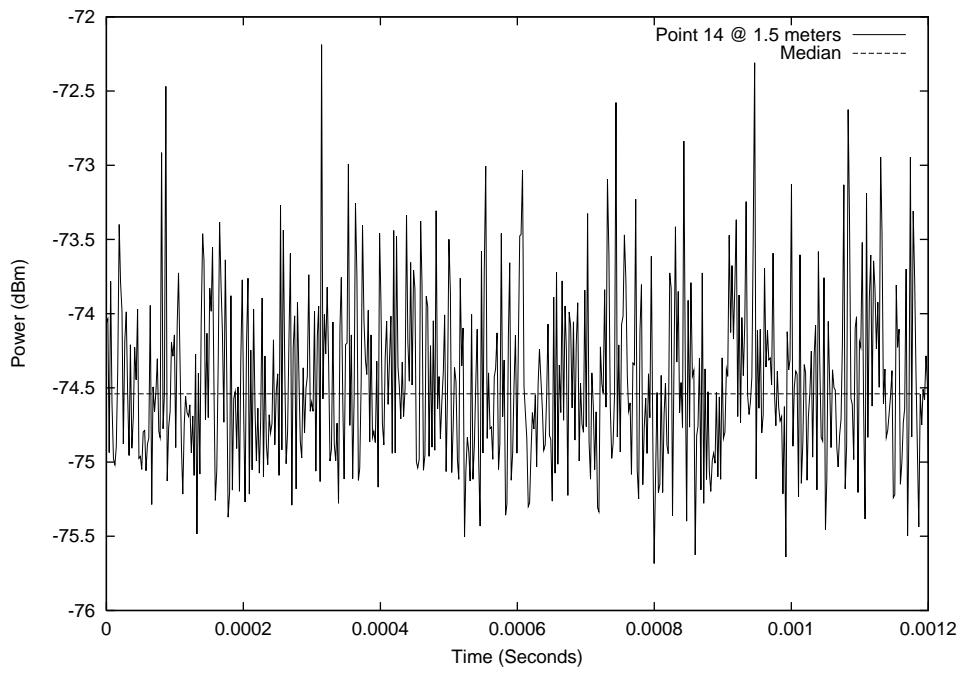


Figure 54: Power at 1.5 meters in location 14.

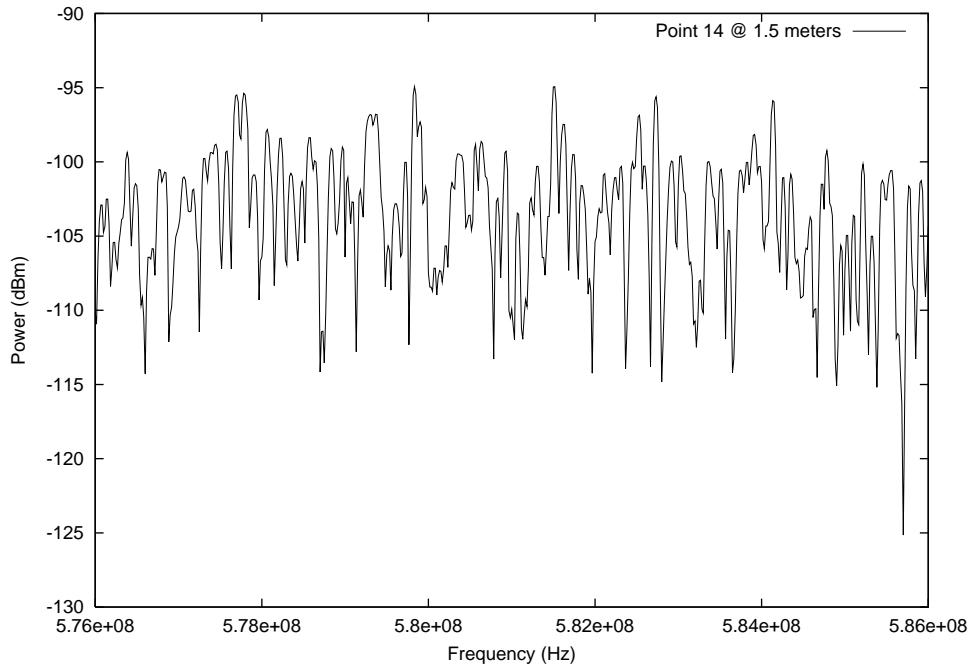


Figure 55: DTV envelope at 1.5 meters in location 14.

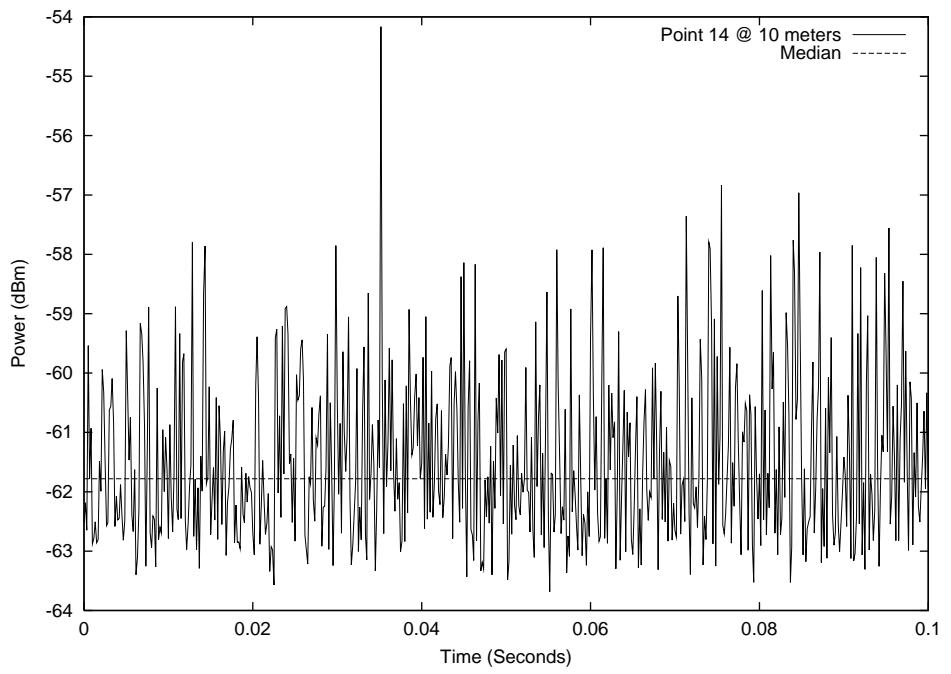


Figure 56: Power at 10 meters in location 14.

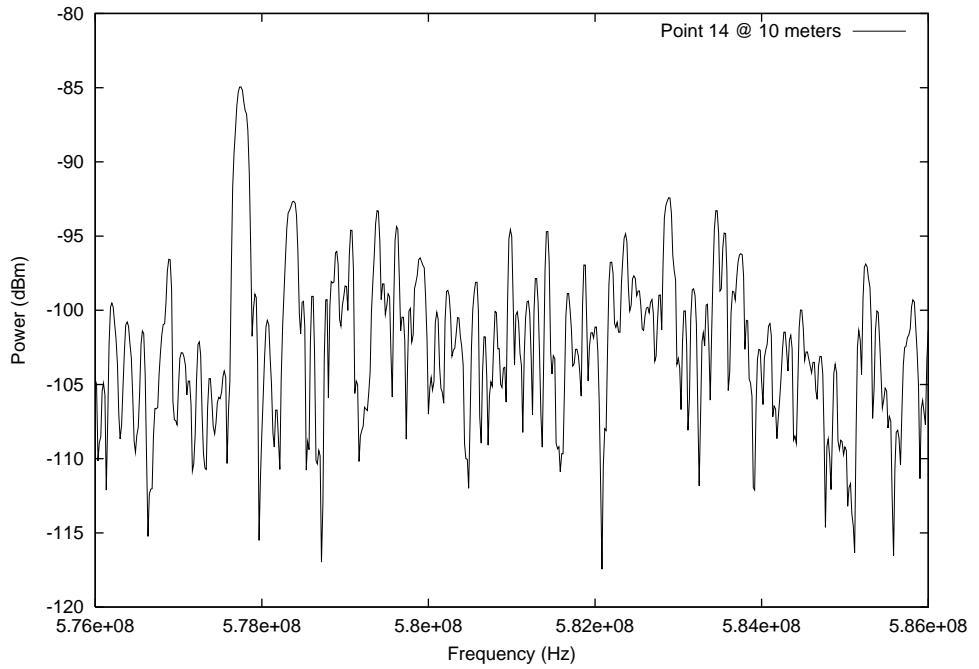


Figure 57: DTV envelope at 10 meters in location 14.

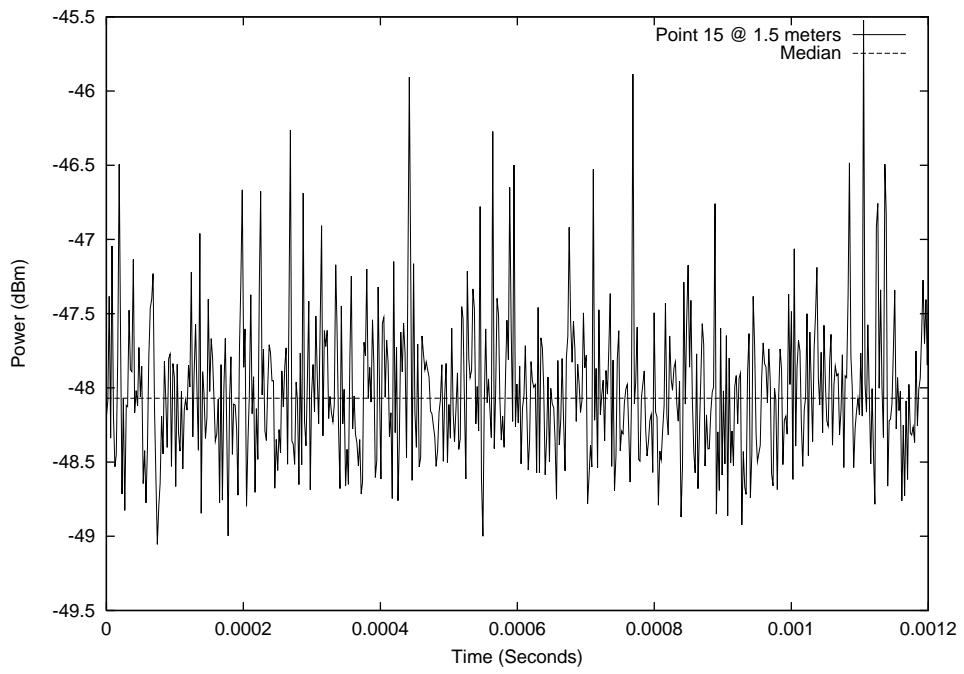


Figure 58: Power at 1.5 meters in location 15.

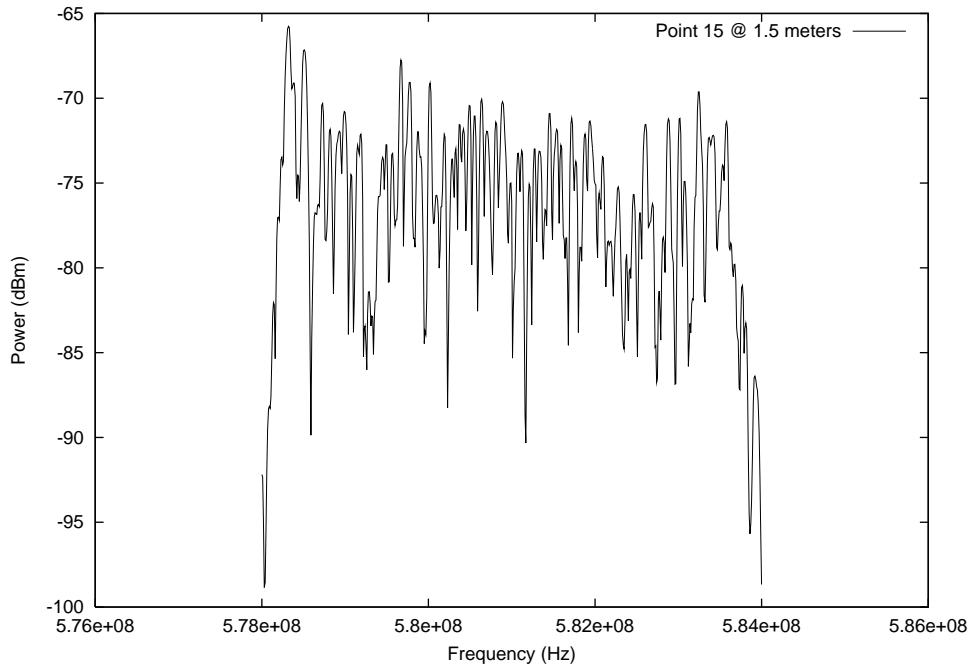


Figure 59: DTV envelope at 1.5 meters in location 15.

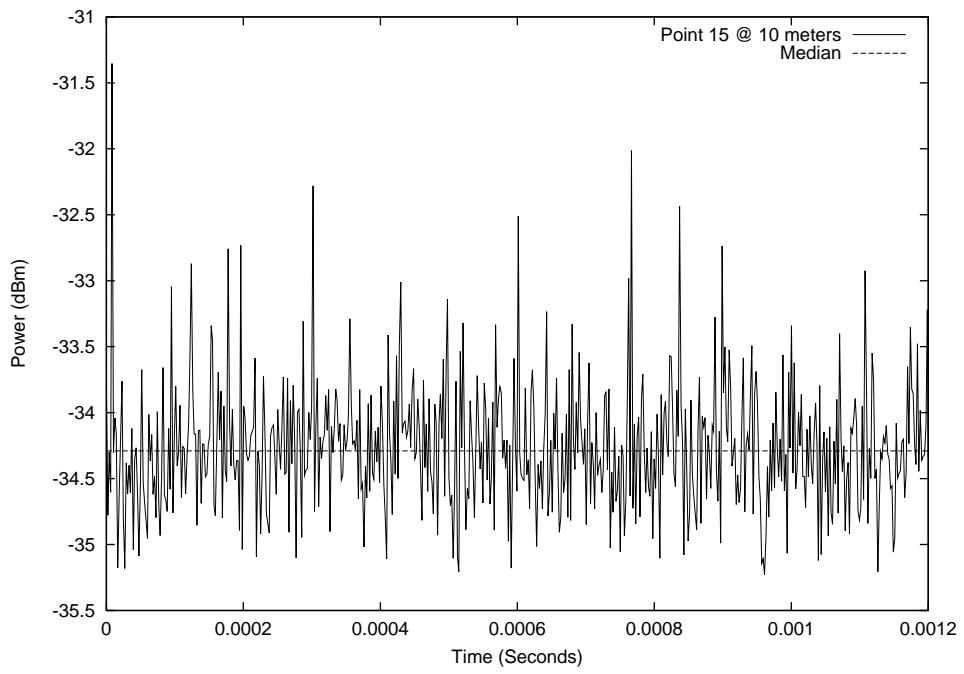


Figure 60: Power at 10 meters in location 15.

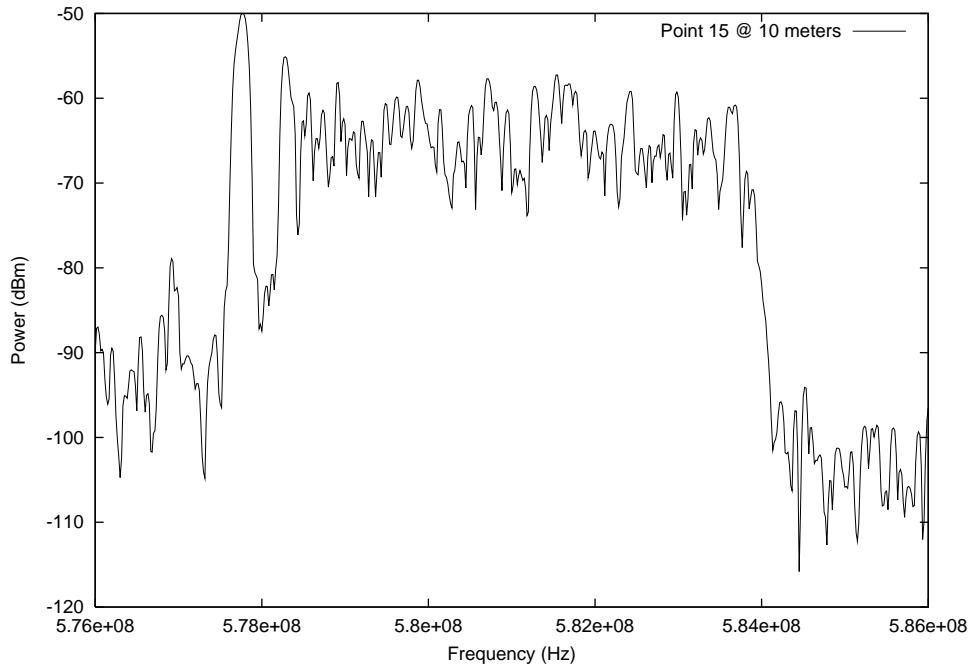


Figure 61: DTV envelope at 10 meters in location 15.

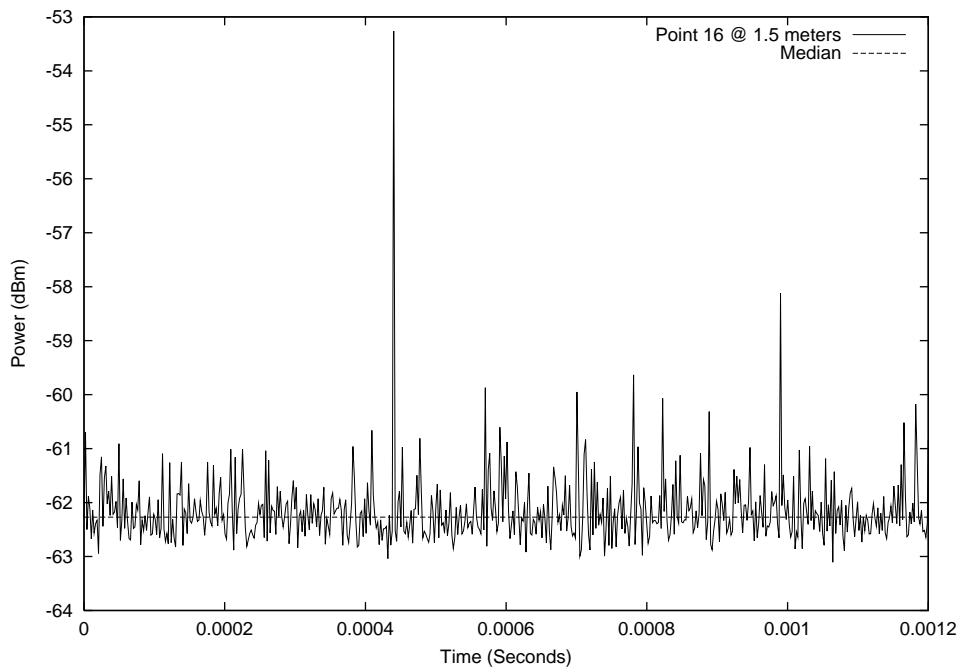


Figure 62: Power at 1.5 meters in location 16.

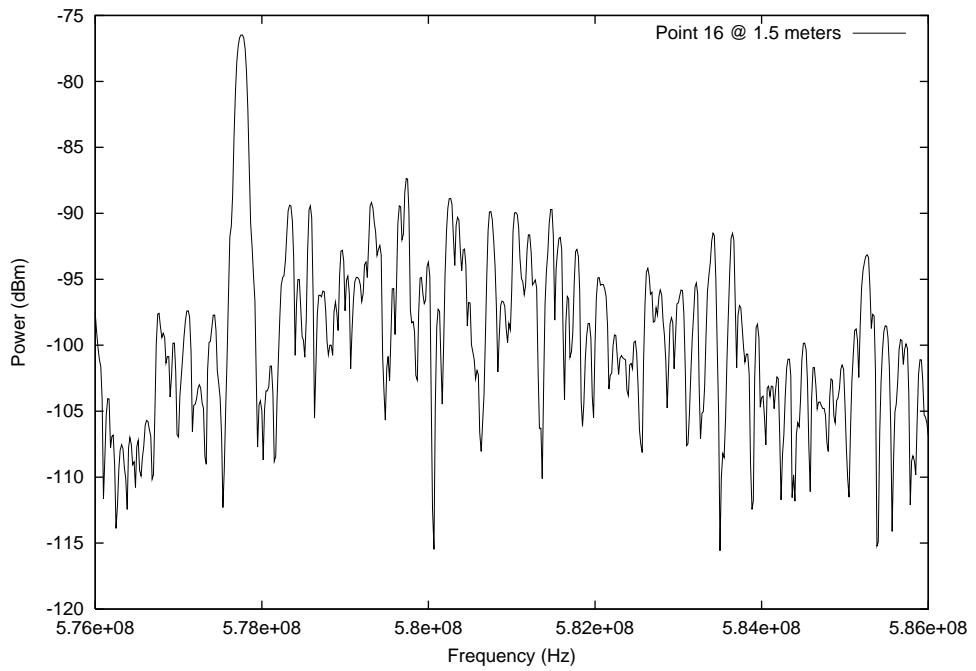


Figure 63: DTV envelope at 1.5 meters in location 16.

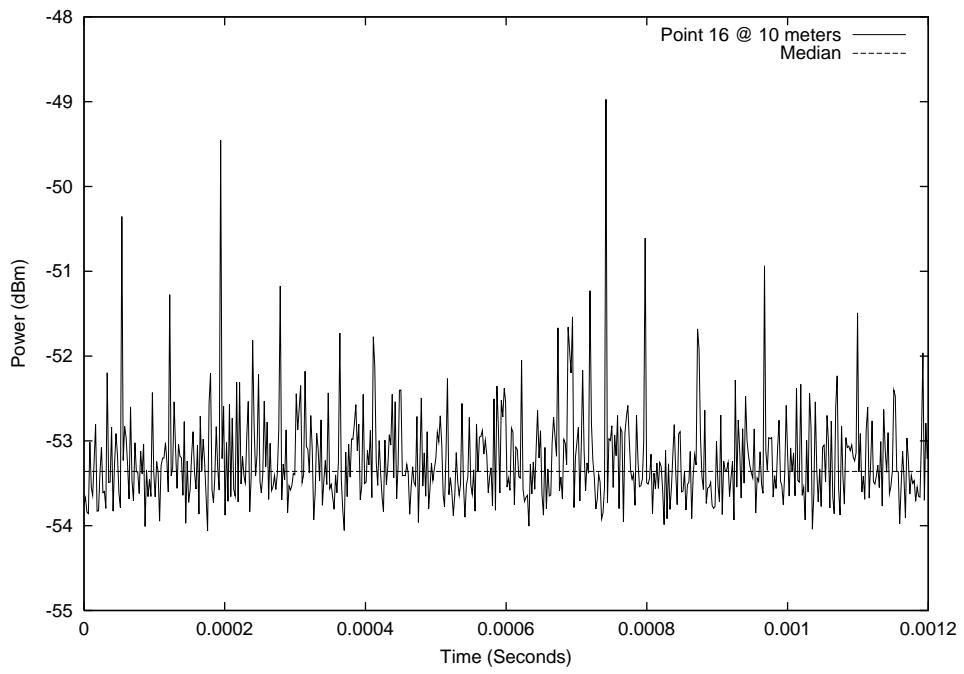


Figure 64: Power at 10 meters in location 16.

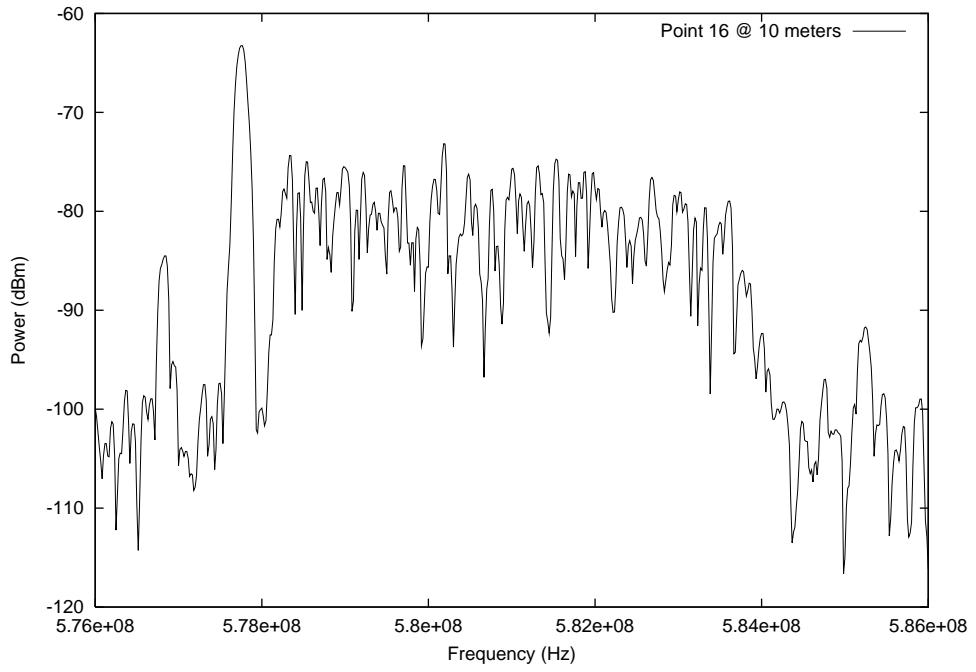


Figure 65: DTV envelope at 10 meters in location 16.

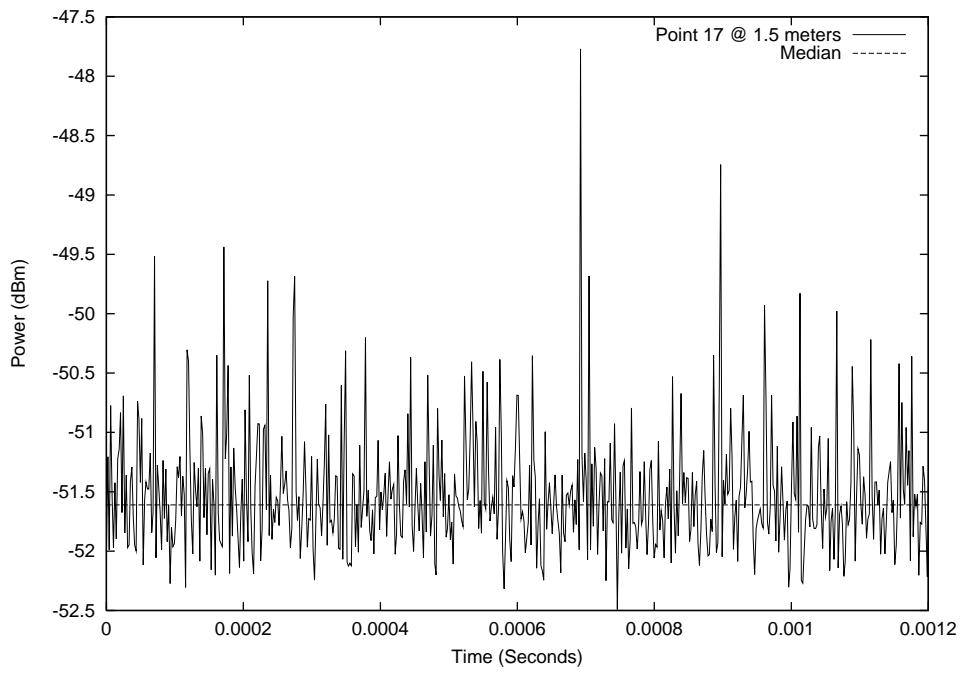


Figure 66: Power at 1.5 meters in location 17.

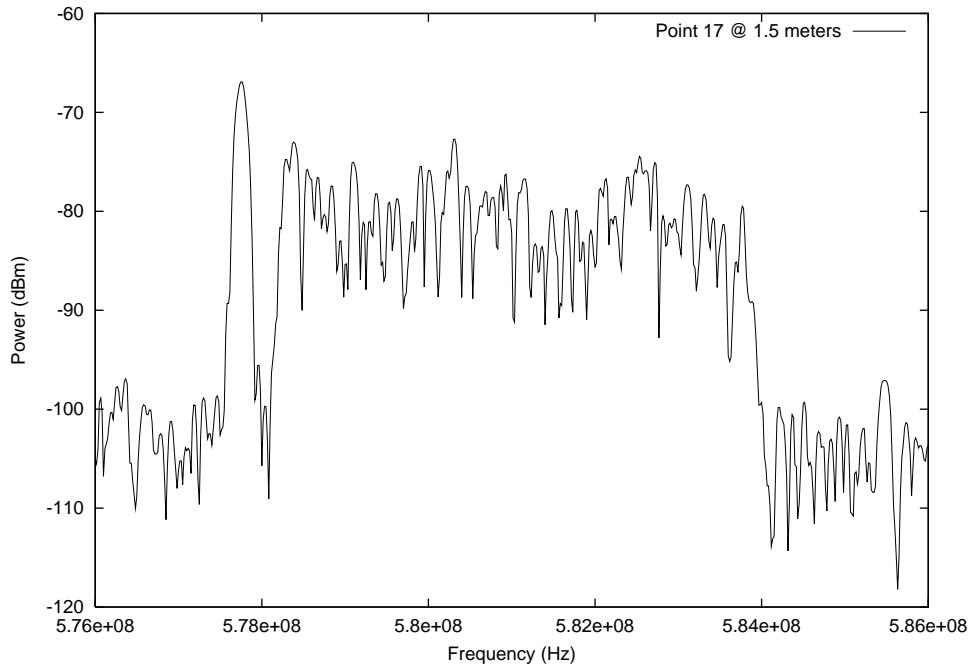


Figure 67: DTV envelope at 1.5 meters in location 17.

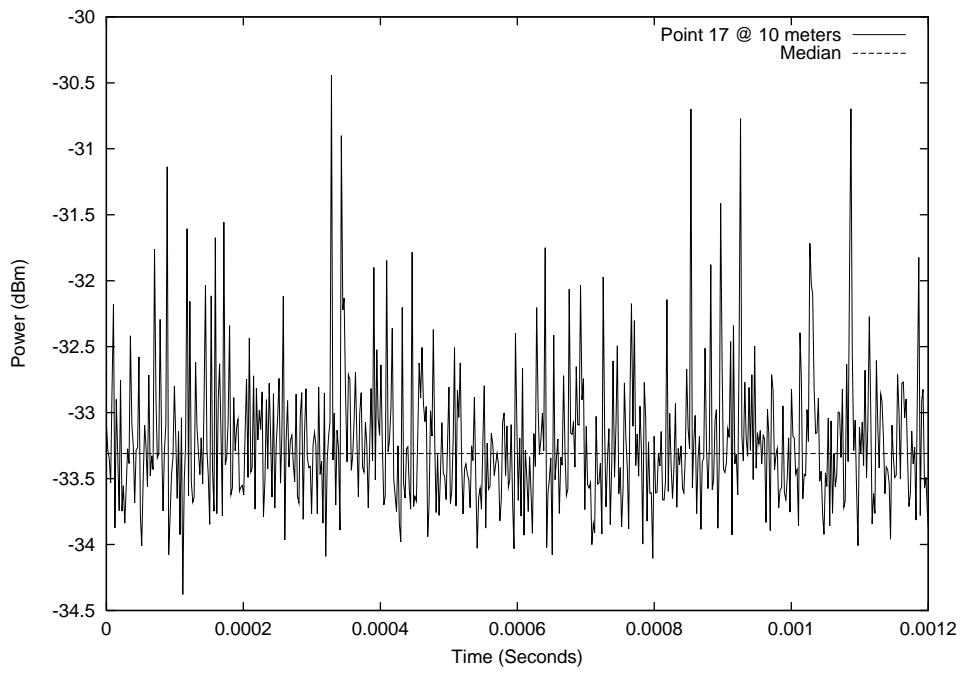


Figure 68: Power at 10 meters in location 17.

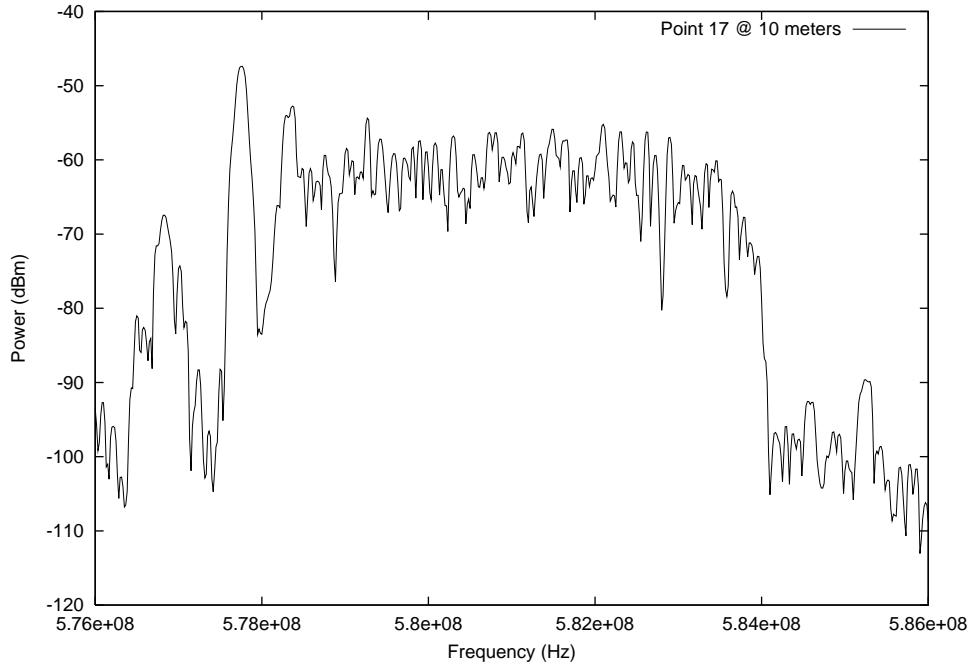


Figure 69: DTV envelope at 10 meters in location 17.

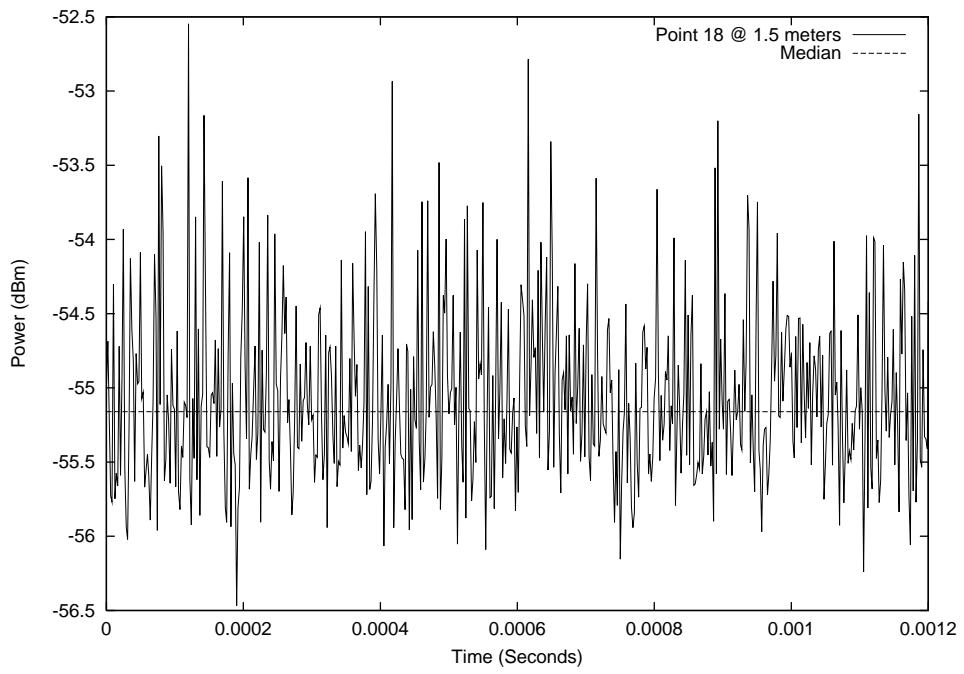


Figure 70: Power at 1.5 meters in location 18.

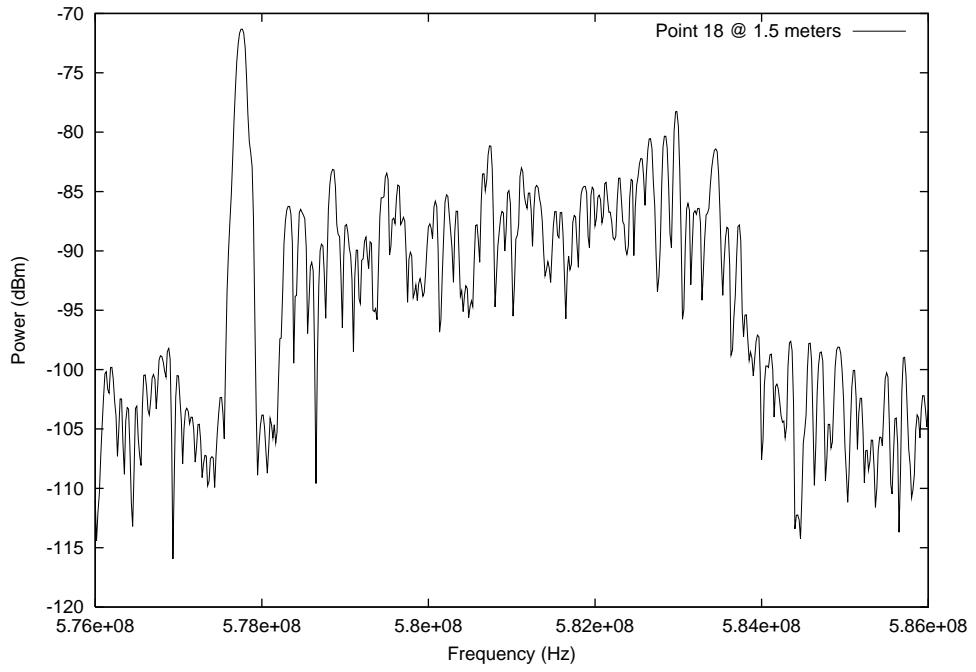


Figure 71: DTV envelope at 1.5 meters in location 18.

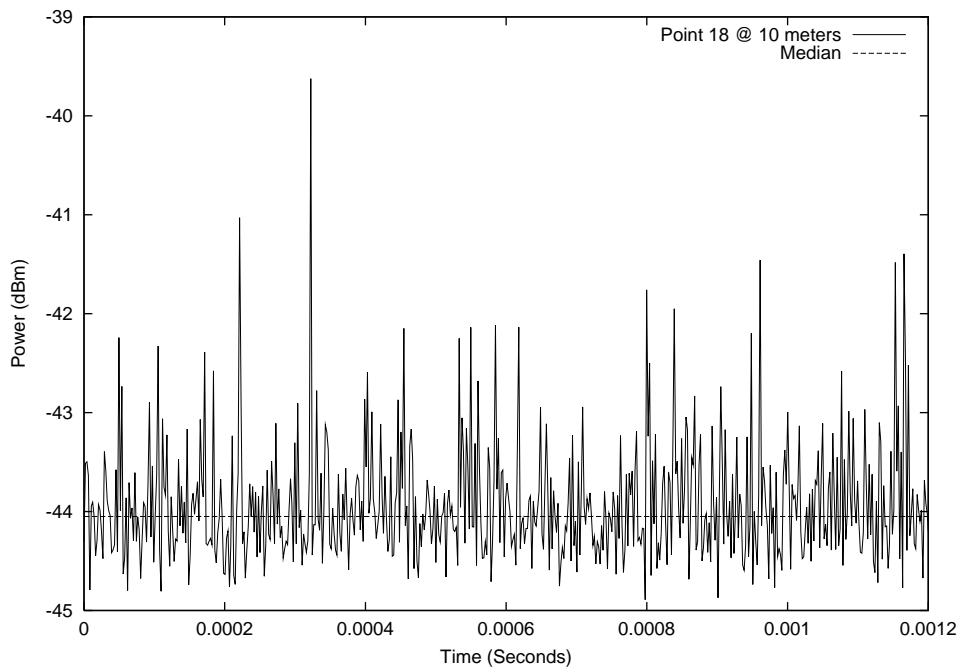


Figure 72: Power at 10 meters in location 18.

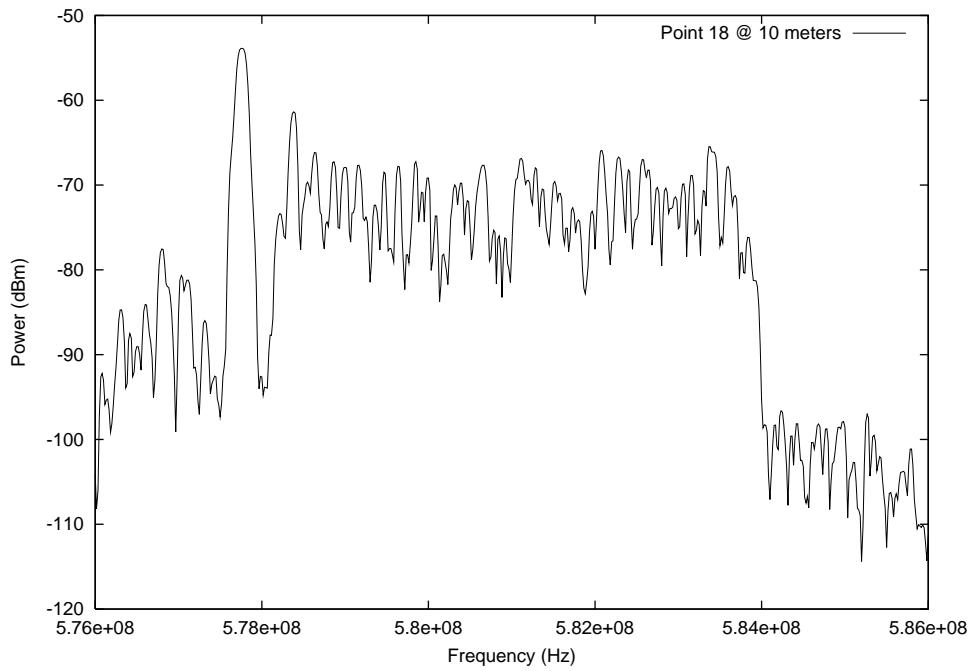


Figure 73: DTV envelope at 10 meters in location 18.

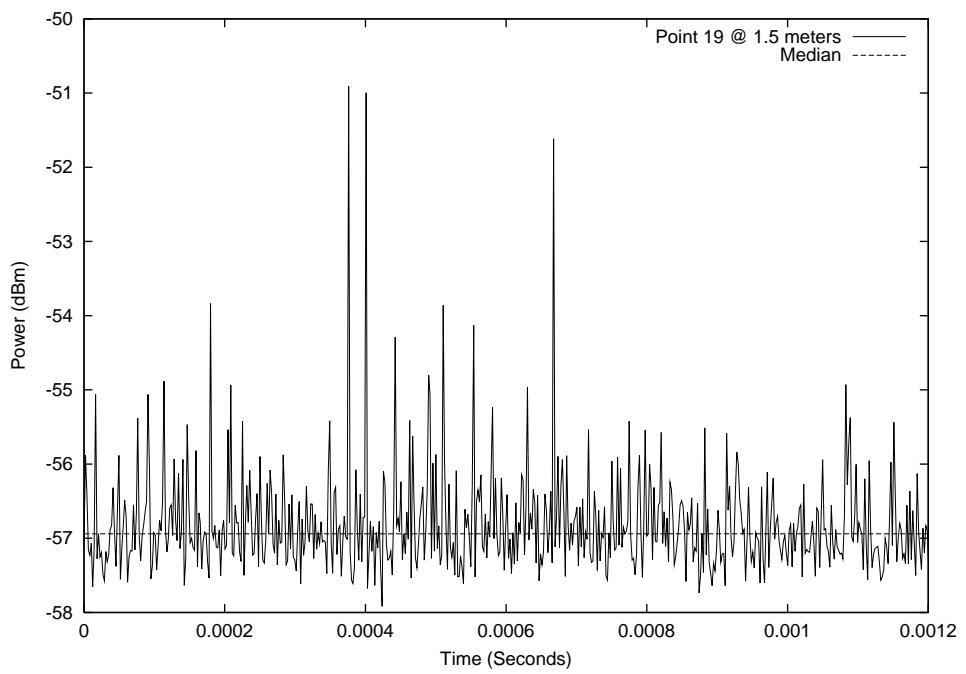


Figure 74: Power at 1.5 meters in location 19.

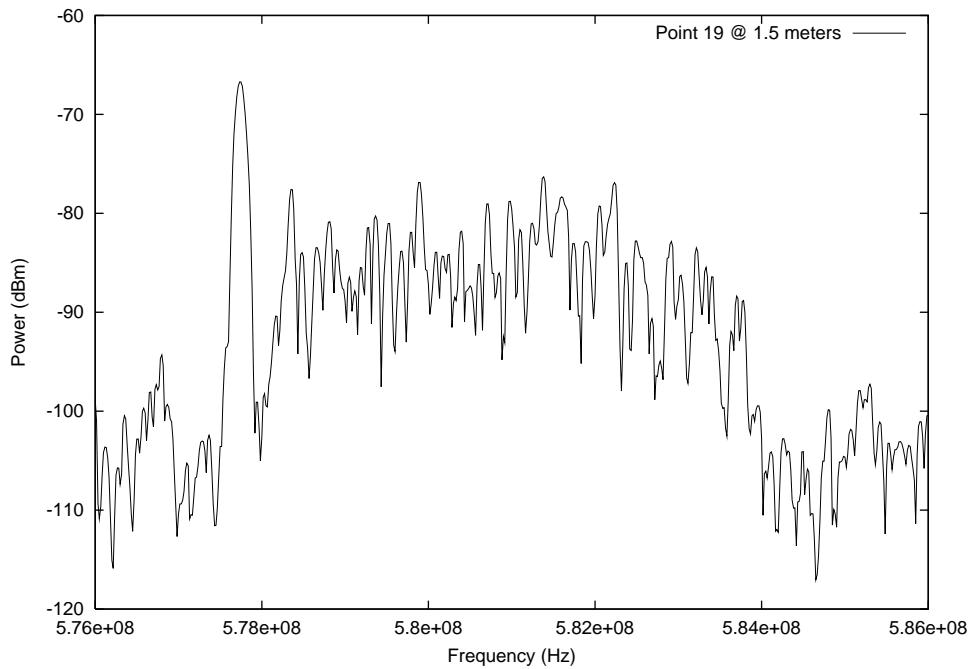


Figure 75: DTV envelope at 1.5 meters in location 19.

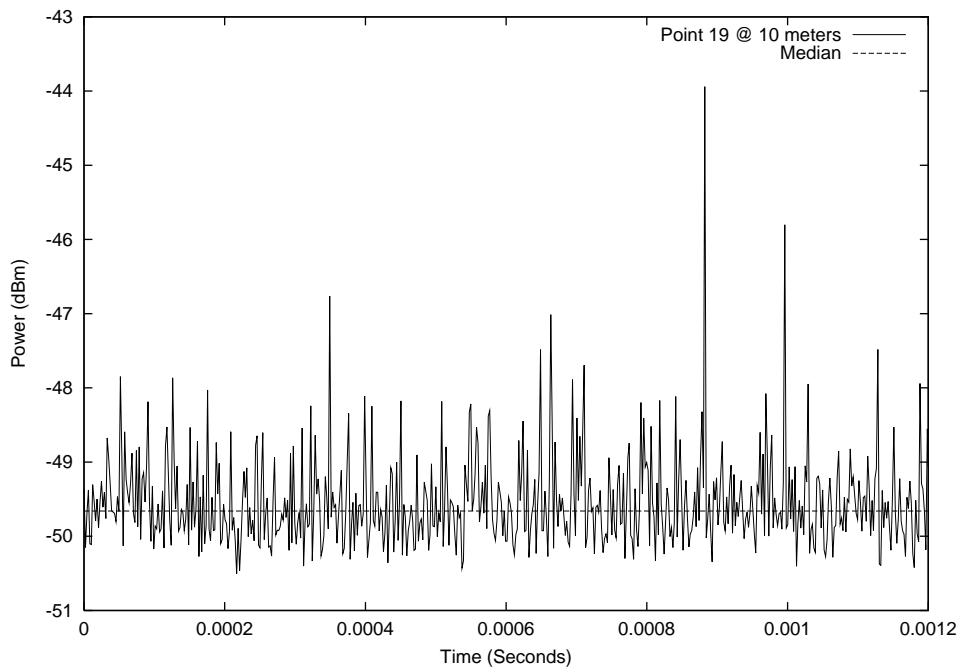


Figure 76: Power at 10 meters in location 19.

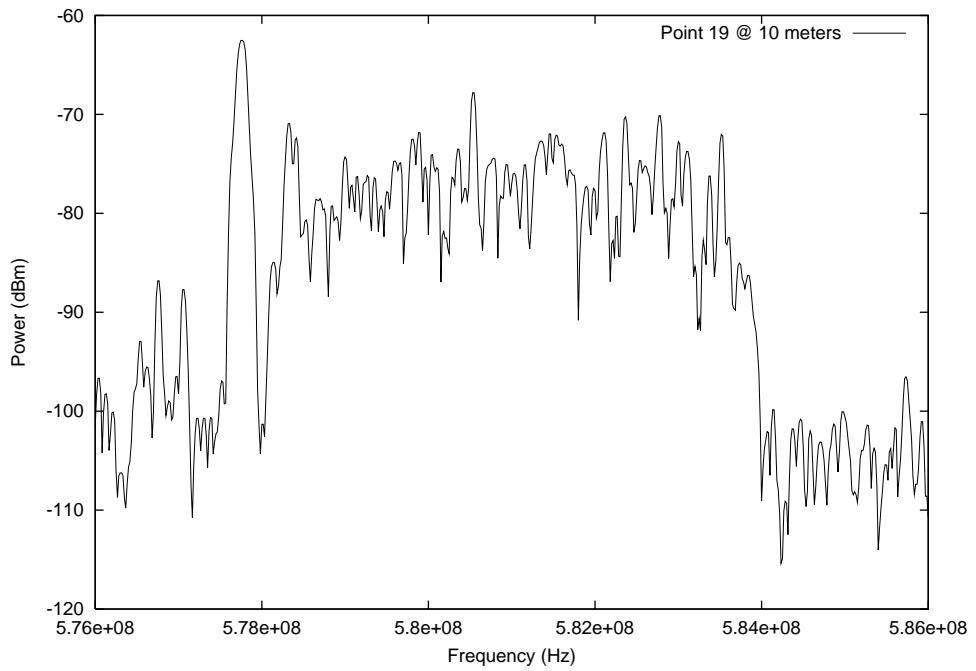


Figure 77: DTV envelope at 10 meters in location 19.

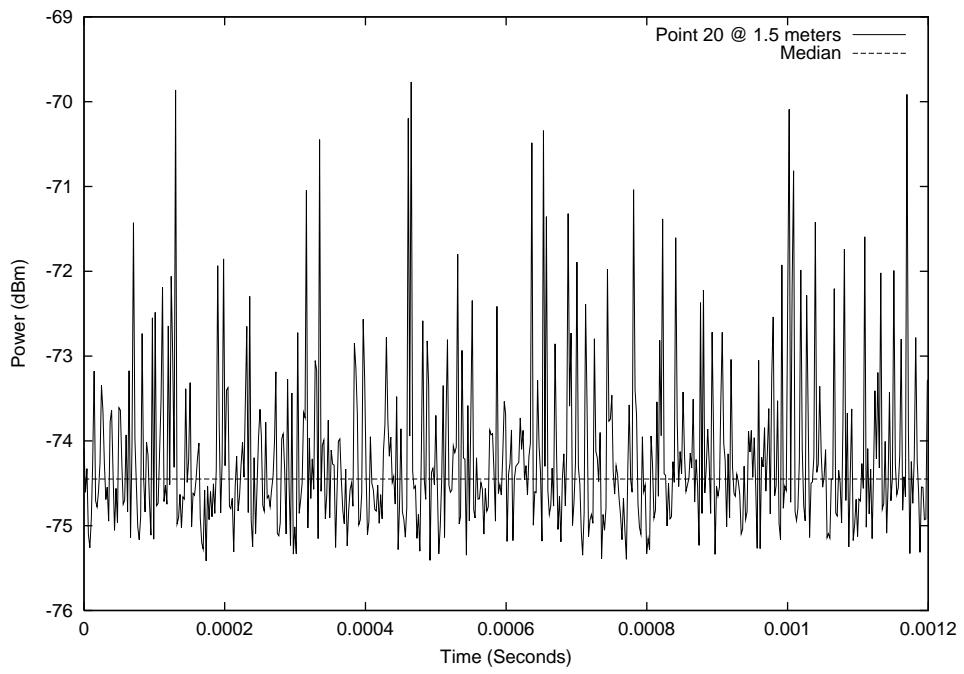


Figure 78: Power at 1.5 meters in location 20.

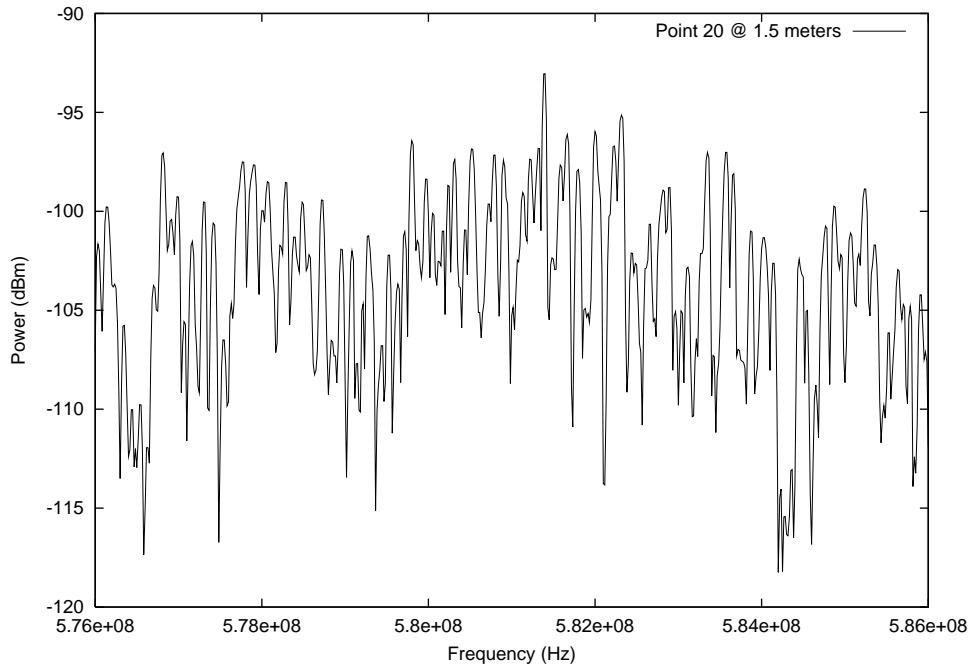


Figure 79: DTV envelope at 1.5 meters in location 20.

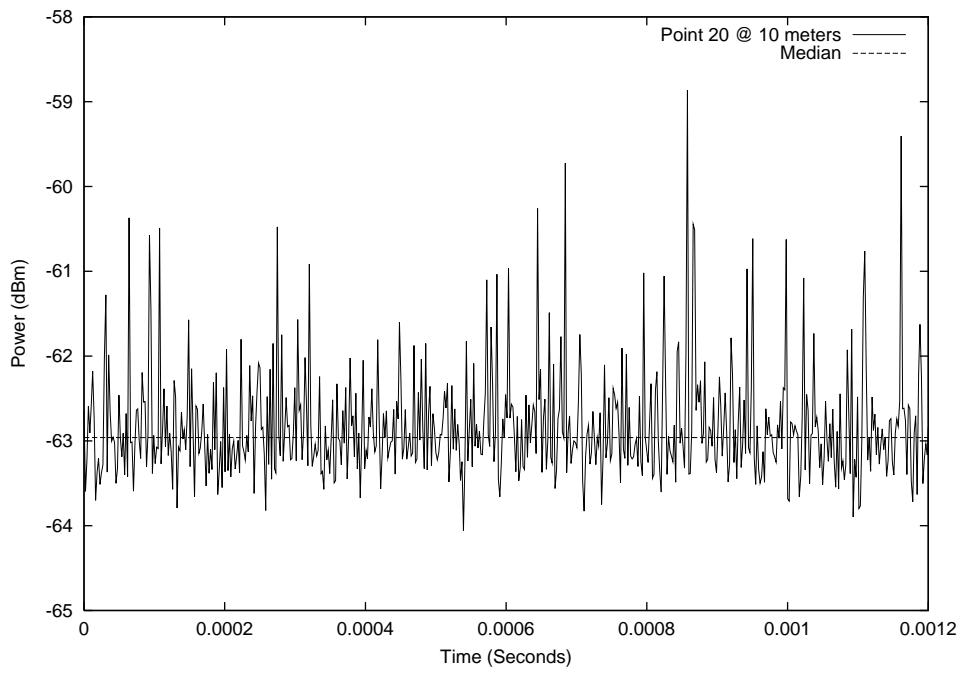


Figure 80: Power at 10 meters in location 20.

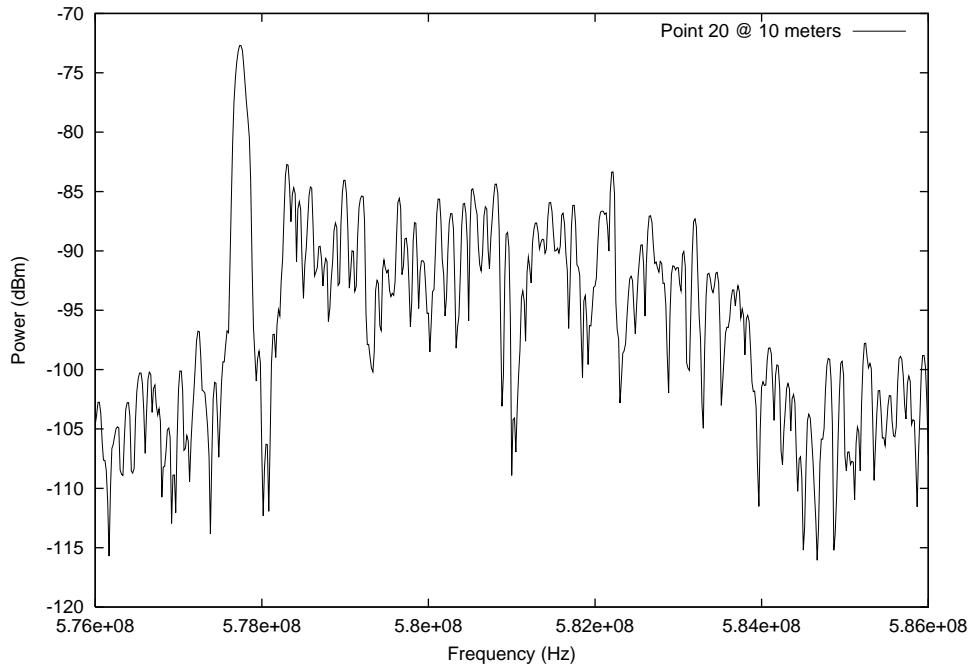


Figure 81: DTV envelope at 10 meters in location 20.

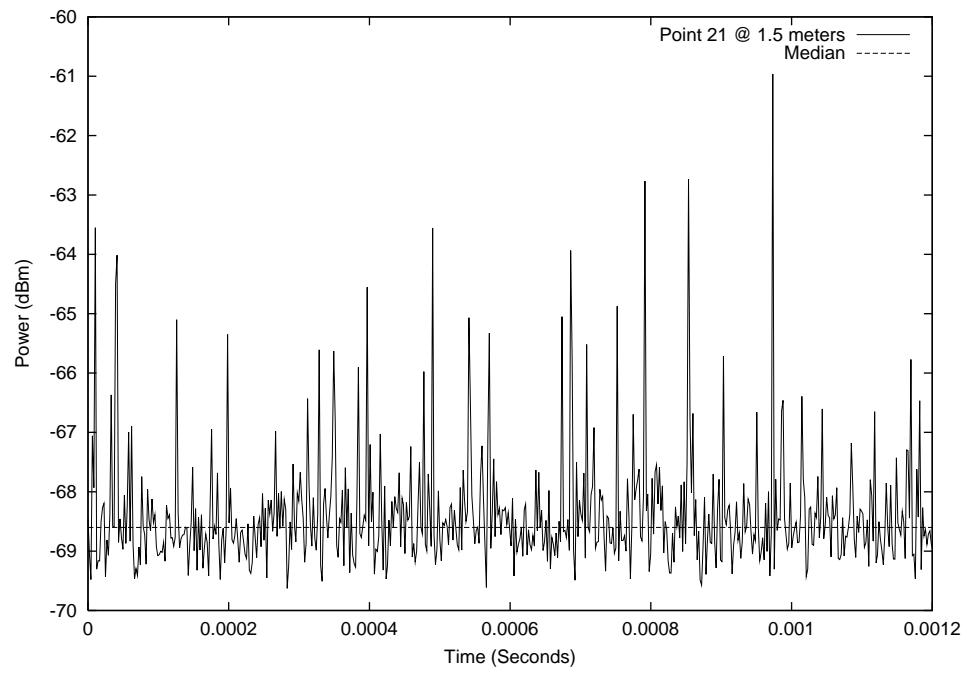


Figure 82: Power at 1.5 meters in location 21.

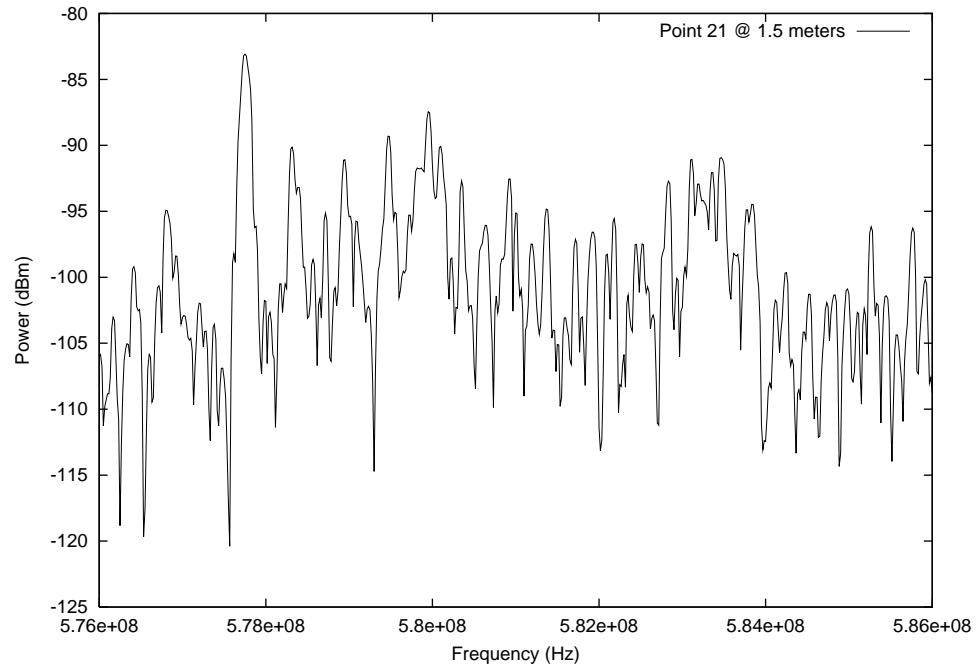


Figure 83: DTV envelope at 1.5 meters in location 21.

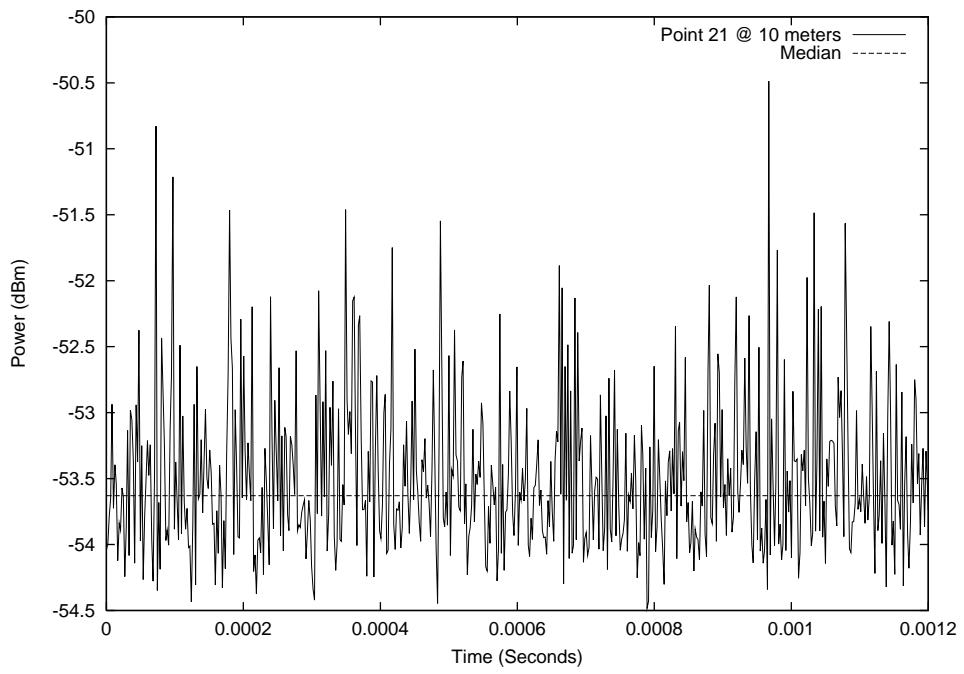


Figure 84: Power at 10 meters in location 21.

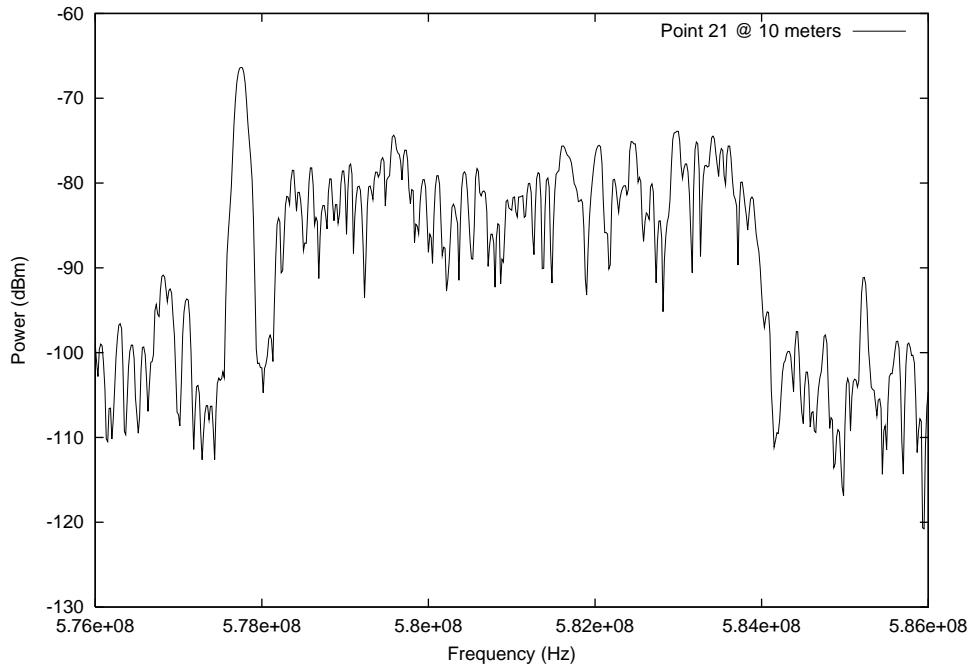


Figure 85: DTV envelope at 10 meters in location 21.

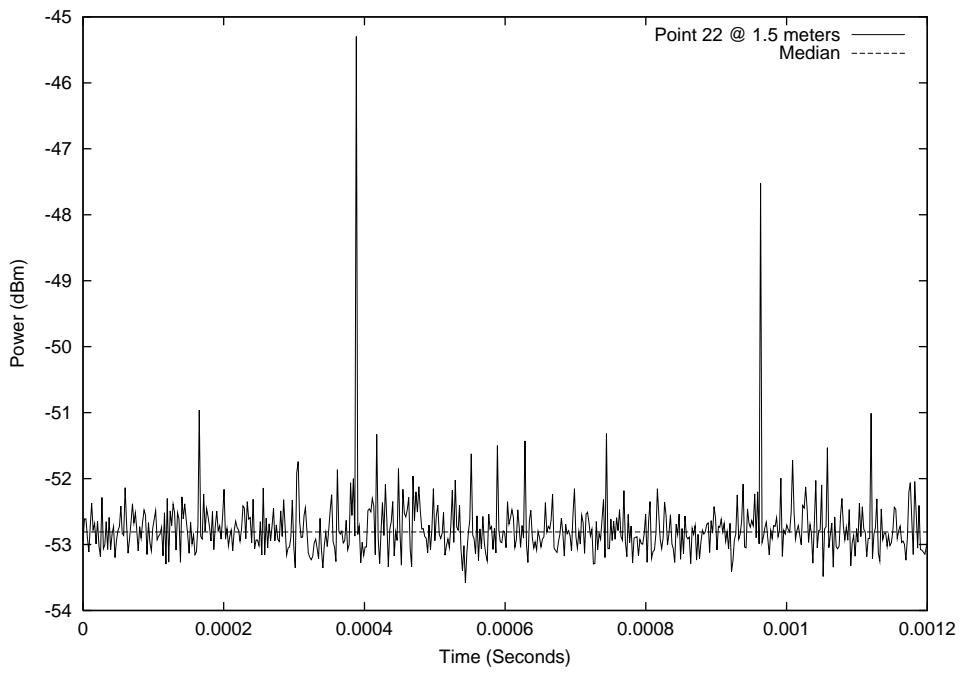


Figure 86: Power at 1.5 meters in location 22.

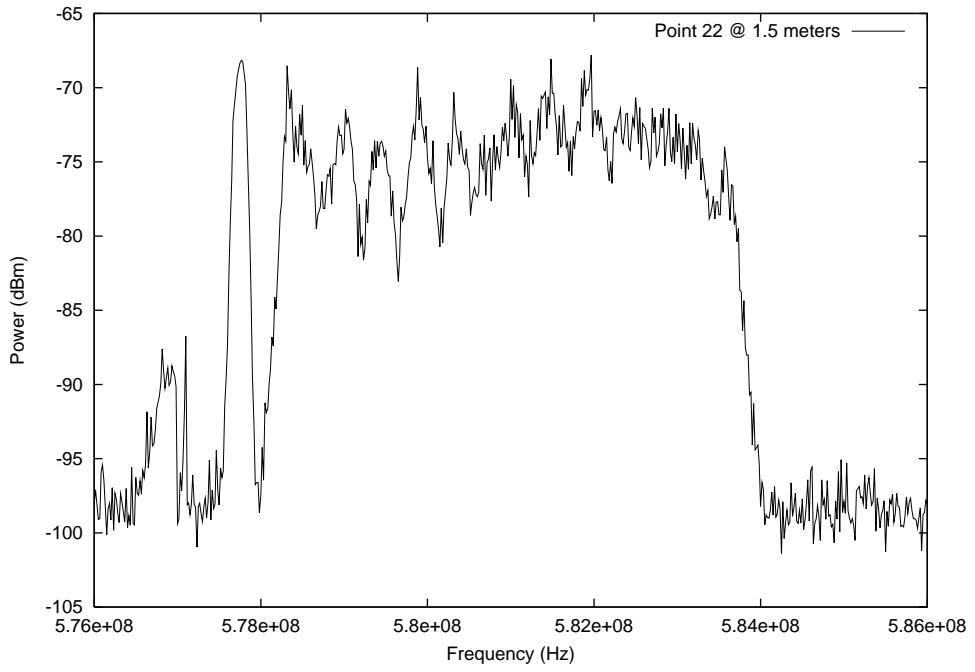


Figure 87: DTV envelope at 1.5 meters in location 22.

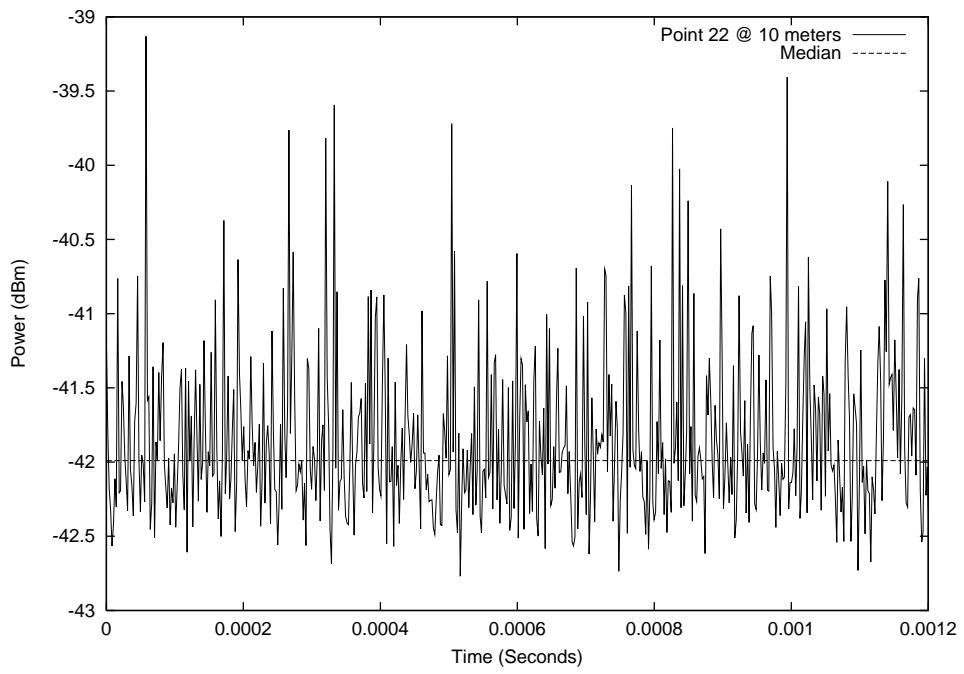


Figure 88: Power at 10 meters in location 22.

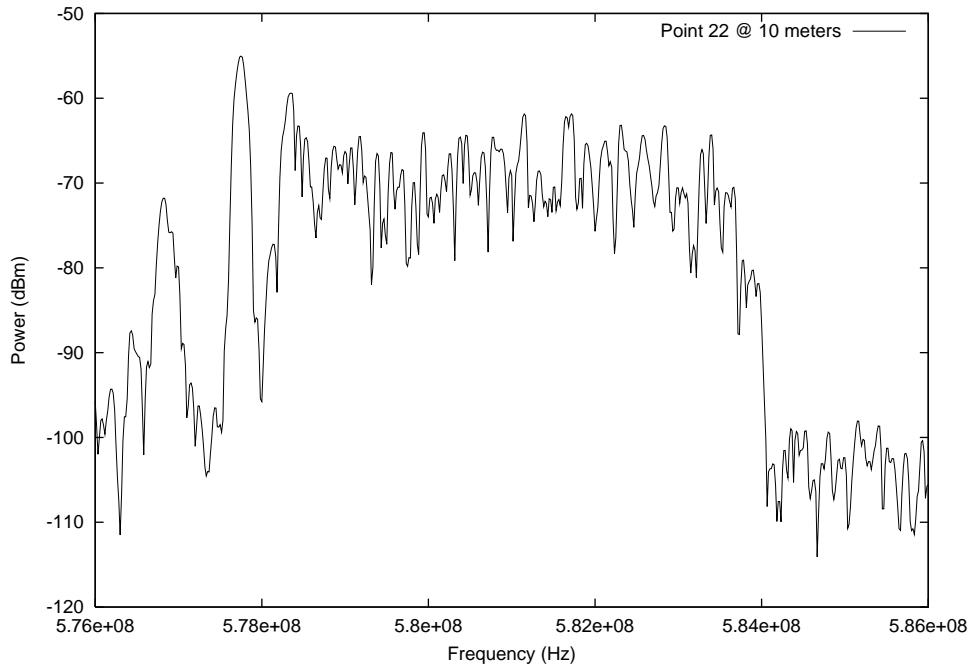


Figure 89: DTV envelope at 10 meters in location 22.

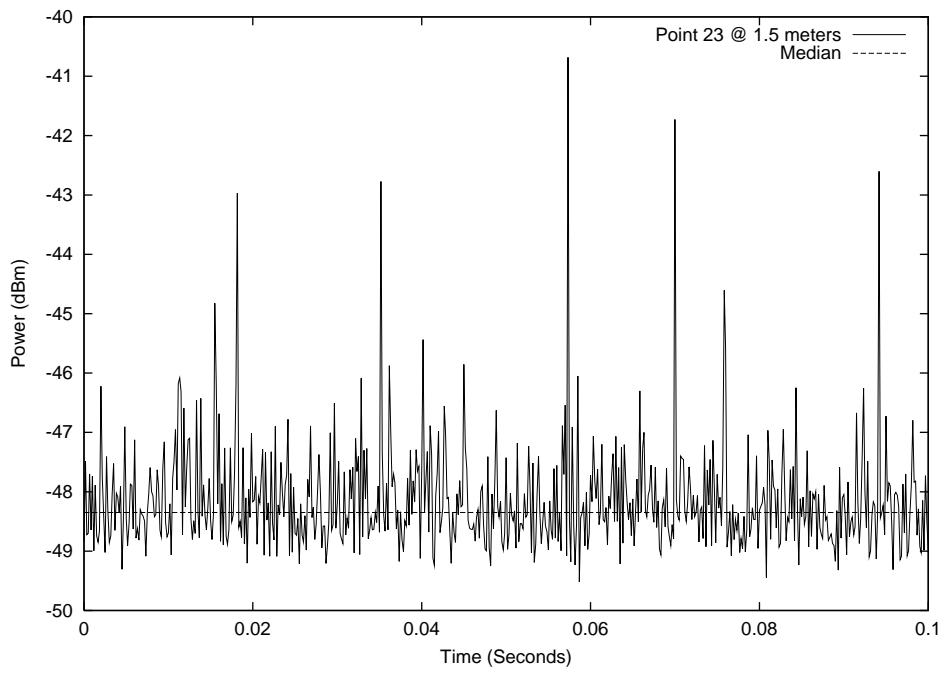


Figure 90: Power at 1.5 meters in location 23.

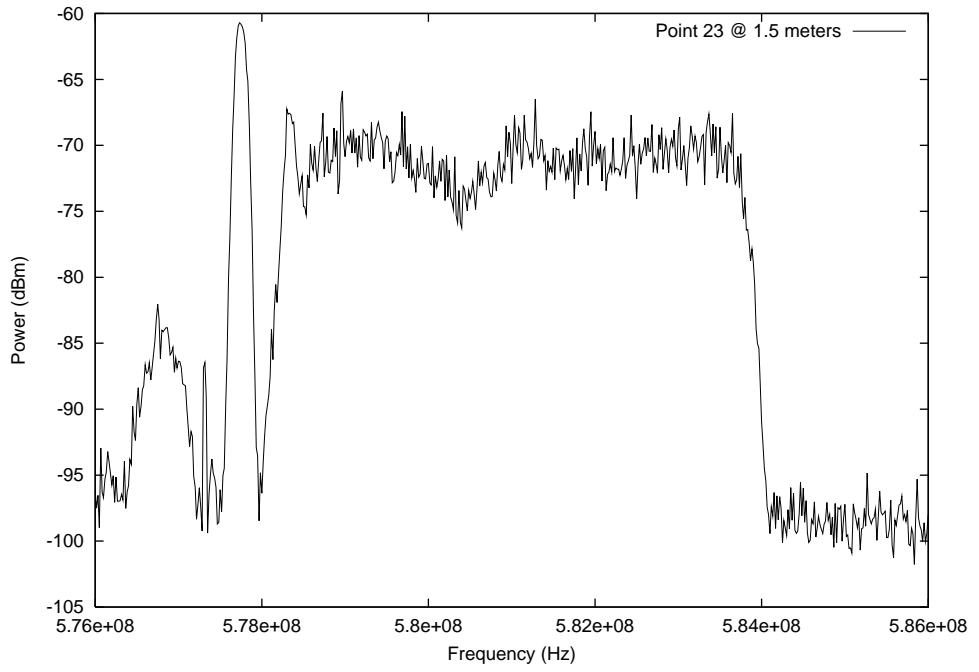


Figure 91: DTV envelope at 1.5 meters in location 23.

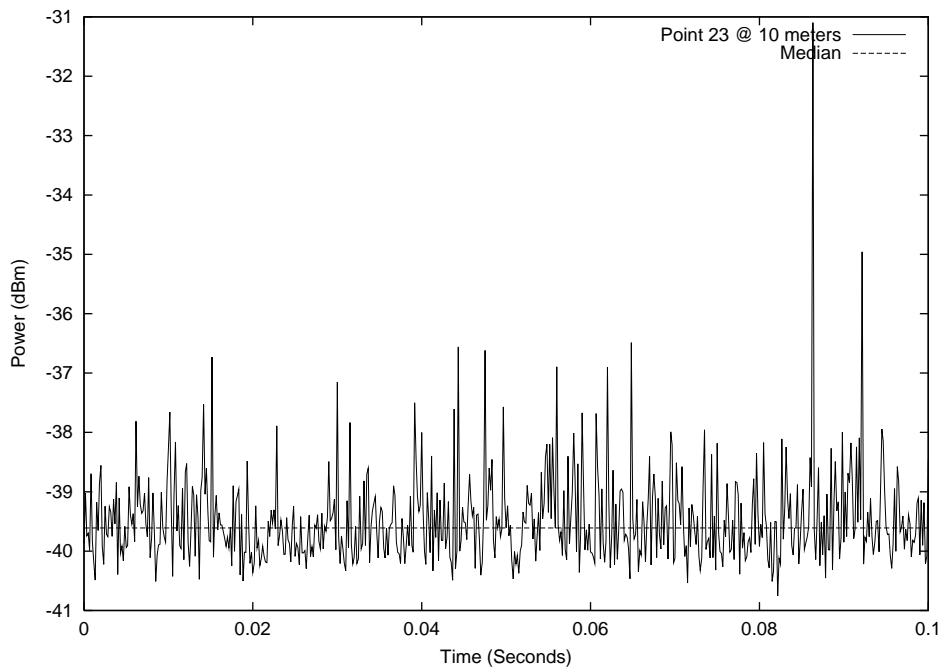


Figure 92: Power at 10 meters in location 23.

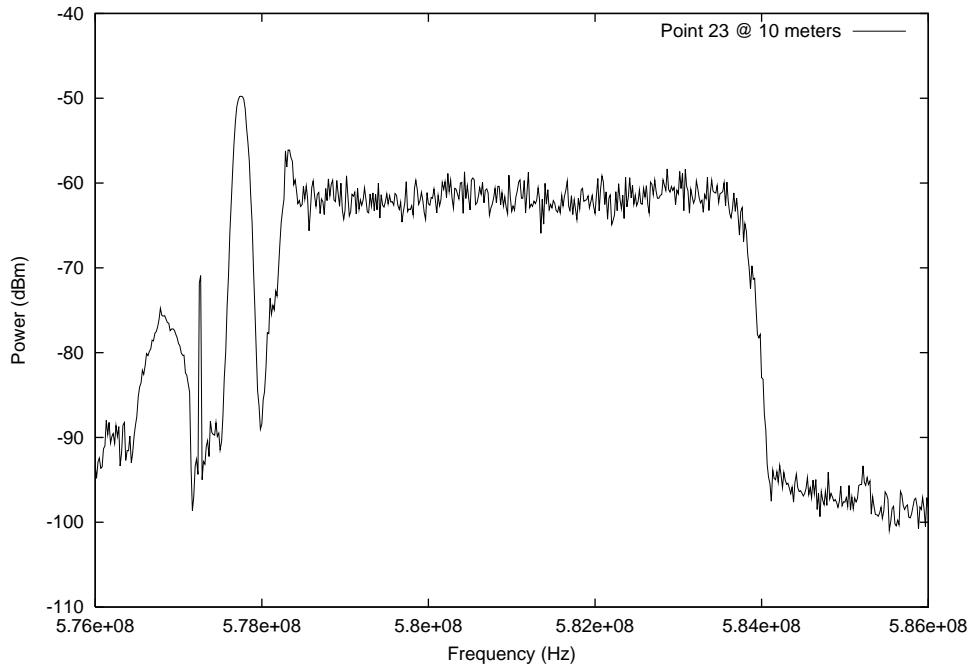


Figure 93: DTV envelope at 10 meters in location 23.

## APPENDIX B: DATA SET TWO

After gathering the data presented in Appendix A it was requested that more data be collected in the area to the North and East of the city of Boulder. Additionally we were asked to include measurements of the root mean square (rms) levels in addition to the peak values as reported in the first data set. The measured field strengths are shown in Table 2, and the graphs in Figures 94–141 show the spectrum analyzer trace data.

Table 2: Test 2 Measurement Results

Point	Picture		Field Strength at 1.5 meters		Field Strength at 10 meters	
	Rcr 1	Rcr 2	peak (dB $\mu$ V/m)	rms (dB $\mu$ V/m)	peak (dB $\mu$ V/m)	rms (dB $\mu$ V/m)
31	Y	Y	78	70	96	87
32	Y	Y	78	69	92	84
33	Y	Y	79	70	95	87
34	Y	N	78	68	93	85
35	Y	Y	81	72	94	86
36	Y	Y	93	85	105	98
37	Y	Y	83	74	93	84
38	Y	N	70	61	84	76
39	Y	N	70	61	83	75
40	N	N	63	52	66	66
41	Y	N	70	61	86	77
42	Y	N	74	68	77	68

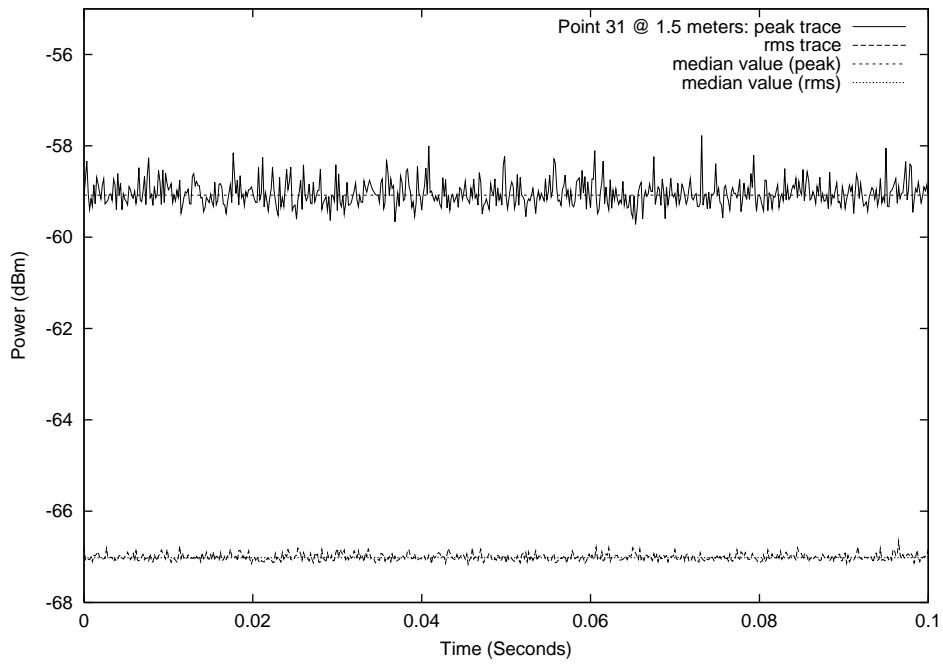


Figure 94: Power at 1.5 meters in location 31.

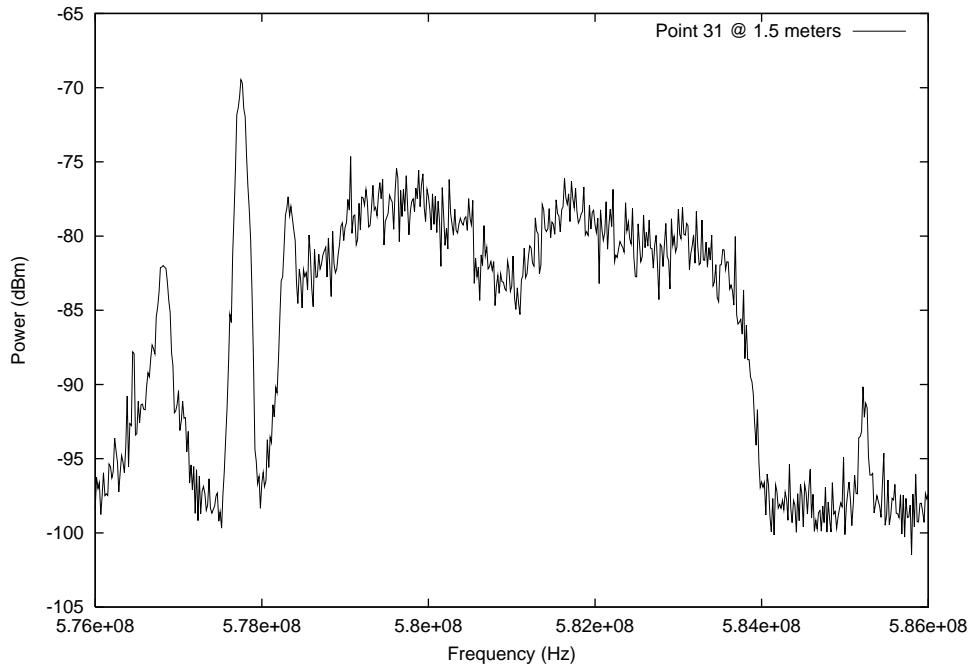


Figure 95: DTV envelope at 1.5 meters in location 31.

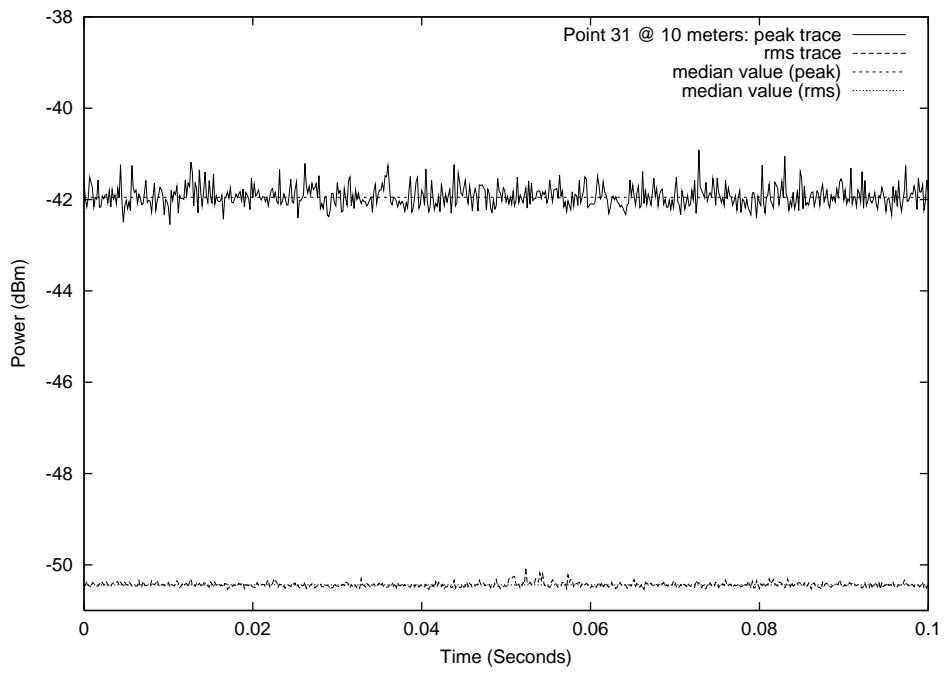


Figure 96: Power at 10 meters in location 31.

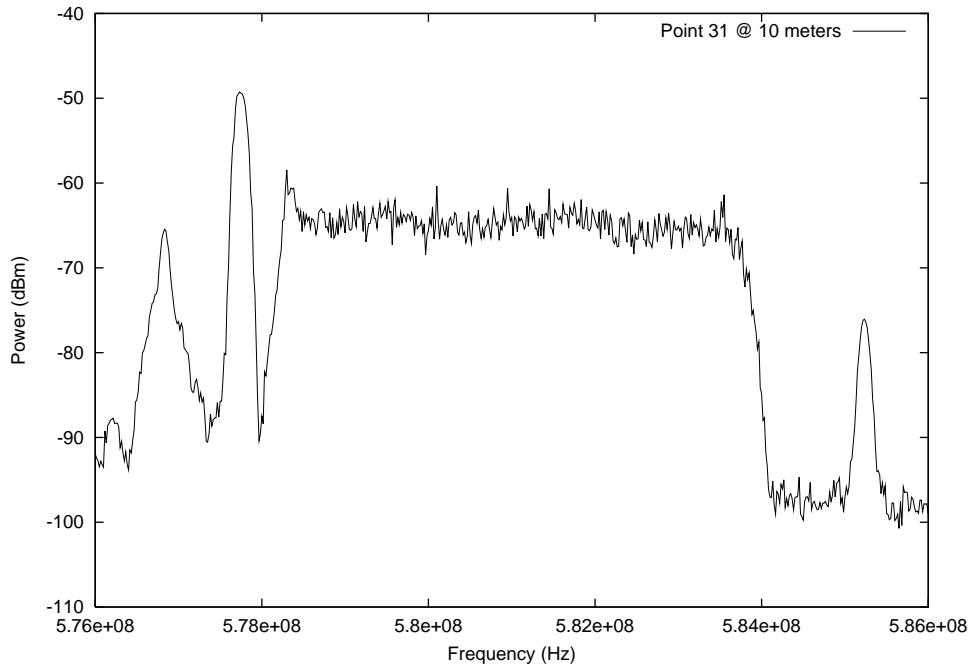


Figure 97: DTV envelope at 10 meters in location 31.

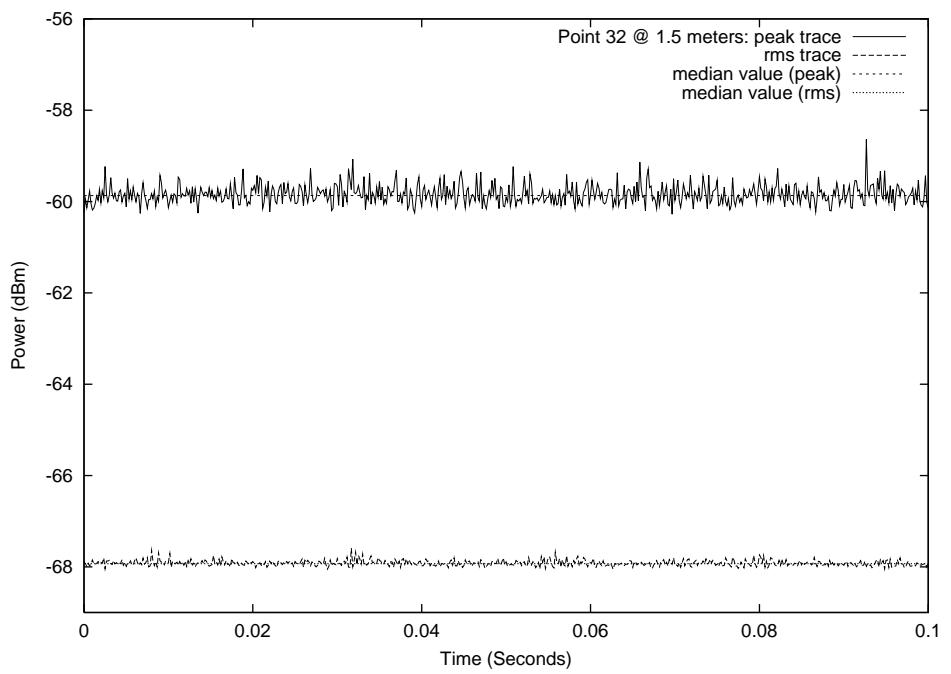


Figure 98: Power at 1.5 meters in location 32.

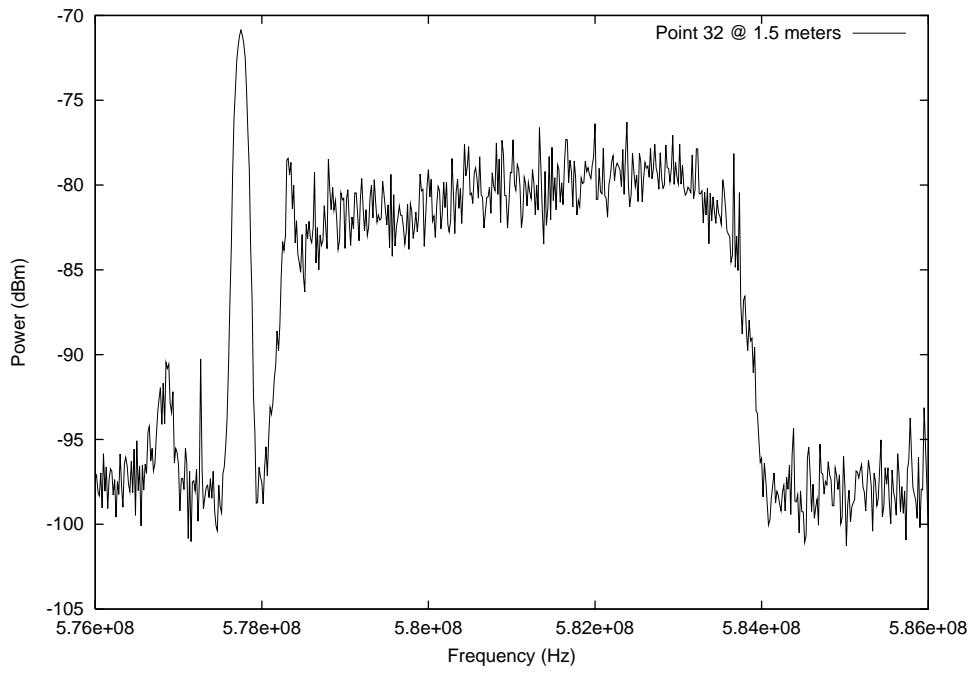


Figure 99: DTV envelope at 1.5 meters in location 32.

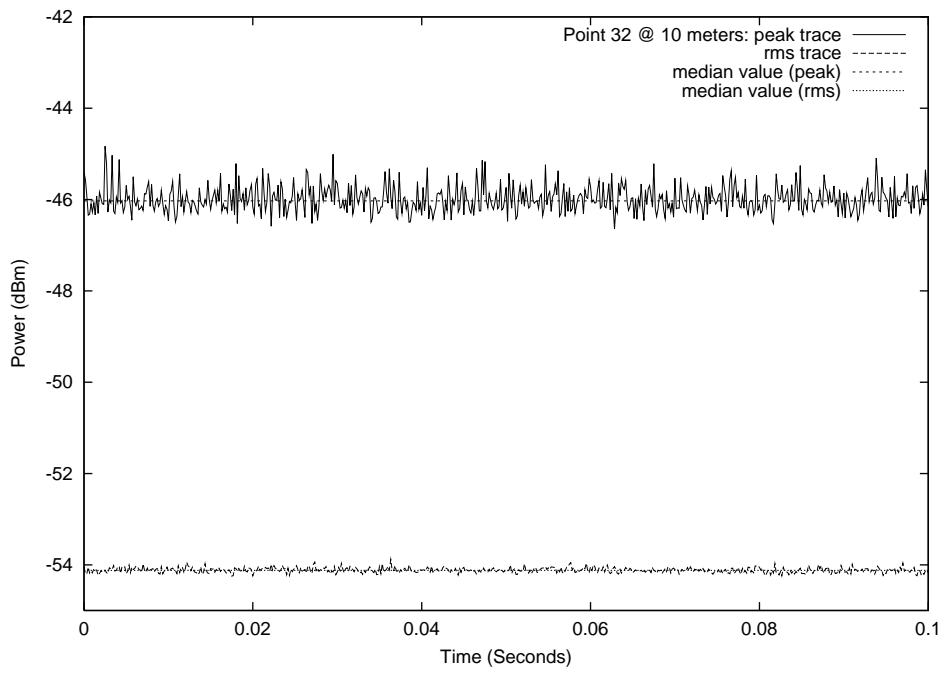


Figure 100: Power at 10 meters in location 32.

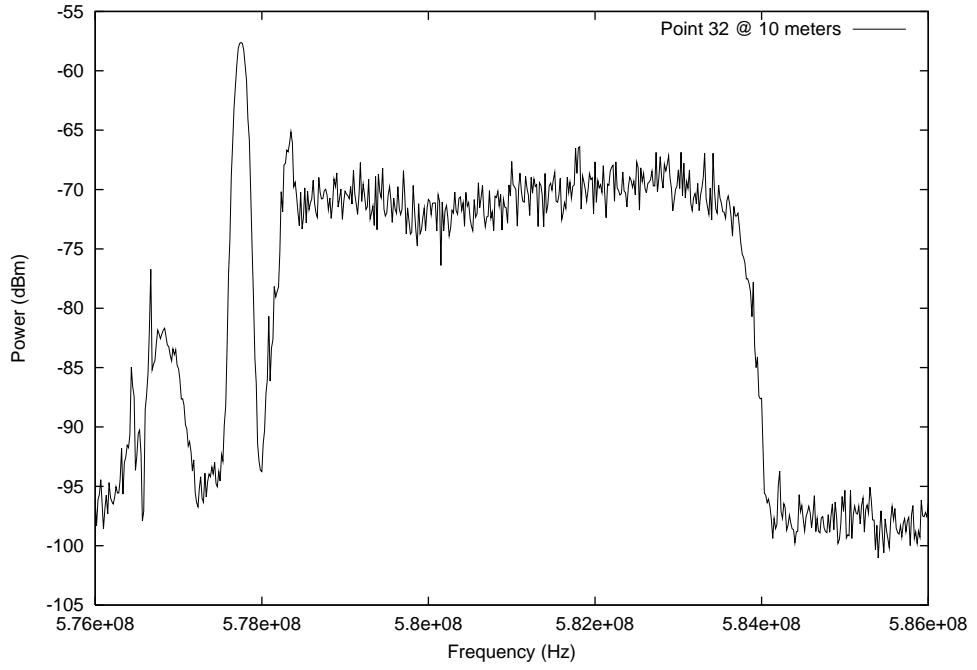


Figure 101: DTV envelope at 10 meters in location 32.

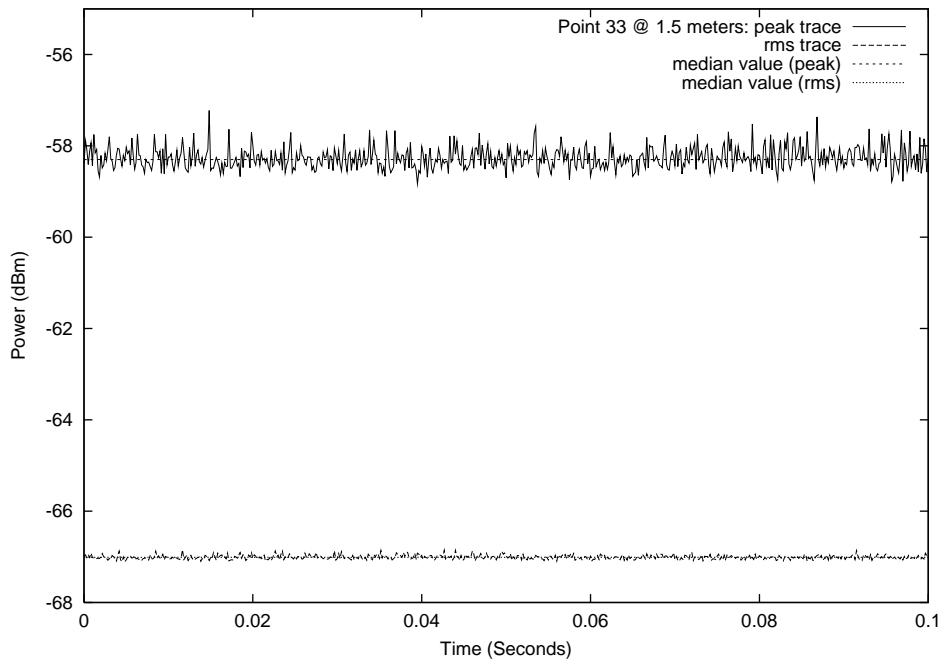


Figure 102: Power at 1.5 meters in location 33.

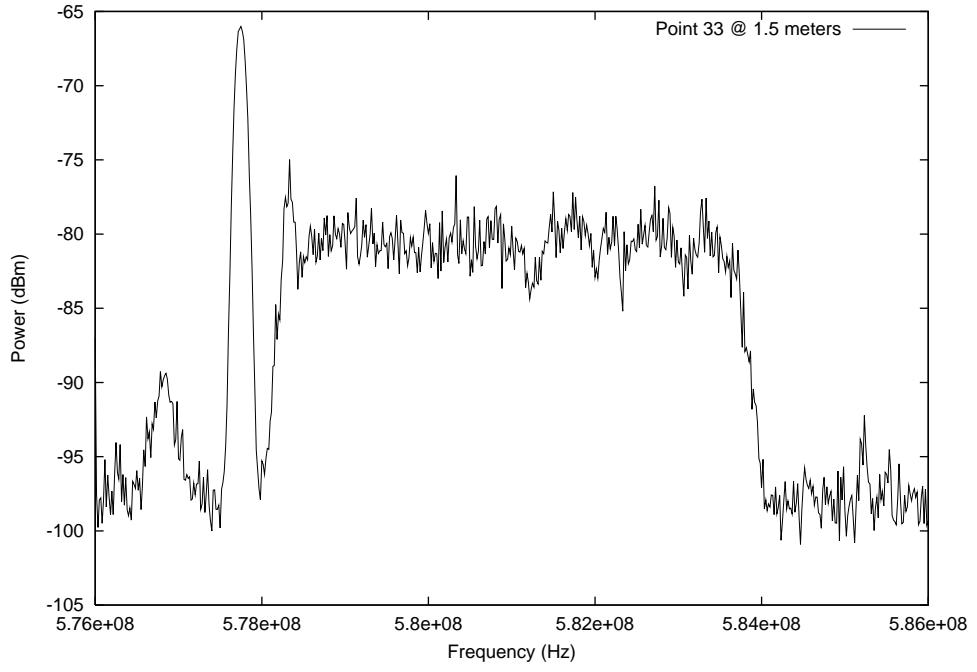


Figure 103: DTV envelope at 1.5 meters in location 33.

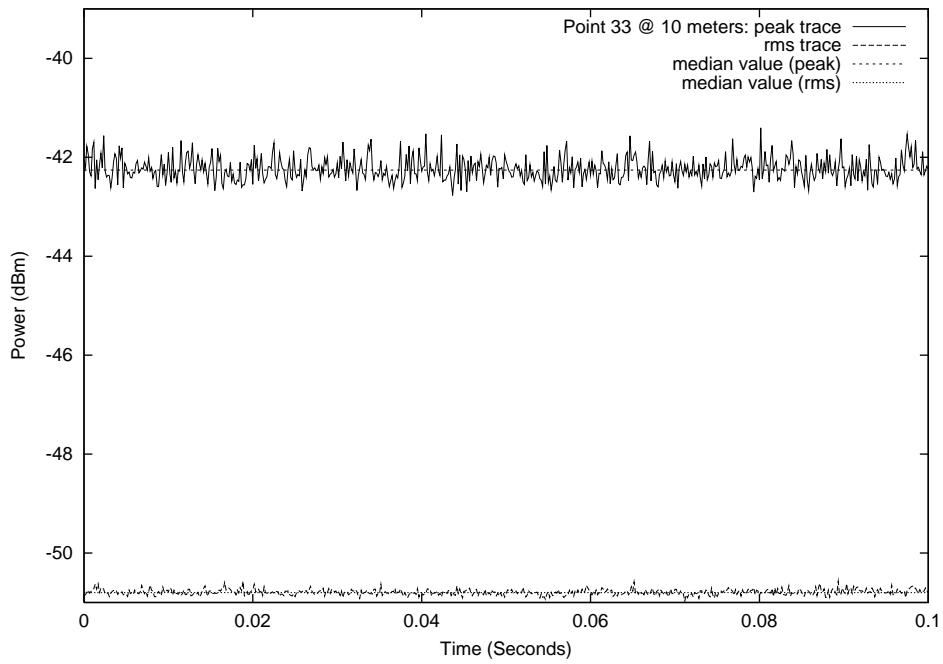


Figure 104: Power at 10 meters in location 33.

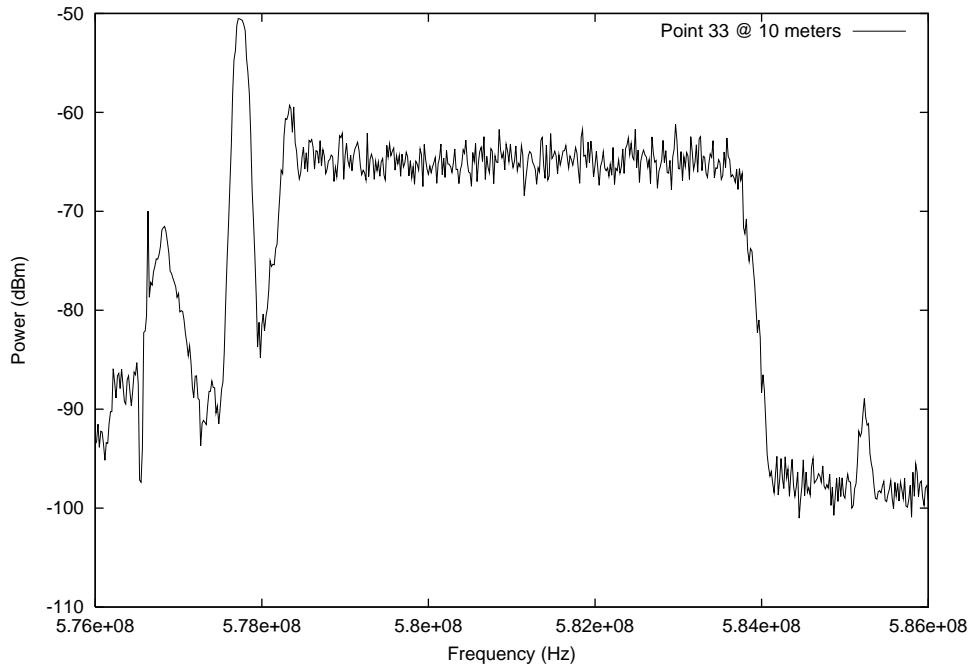


Figure 105: DTV envelope at 10 meters in location 33.

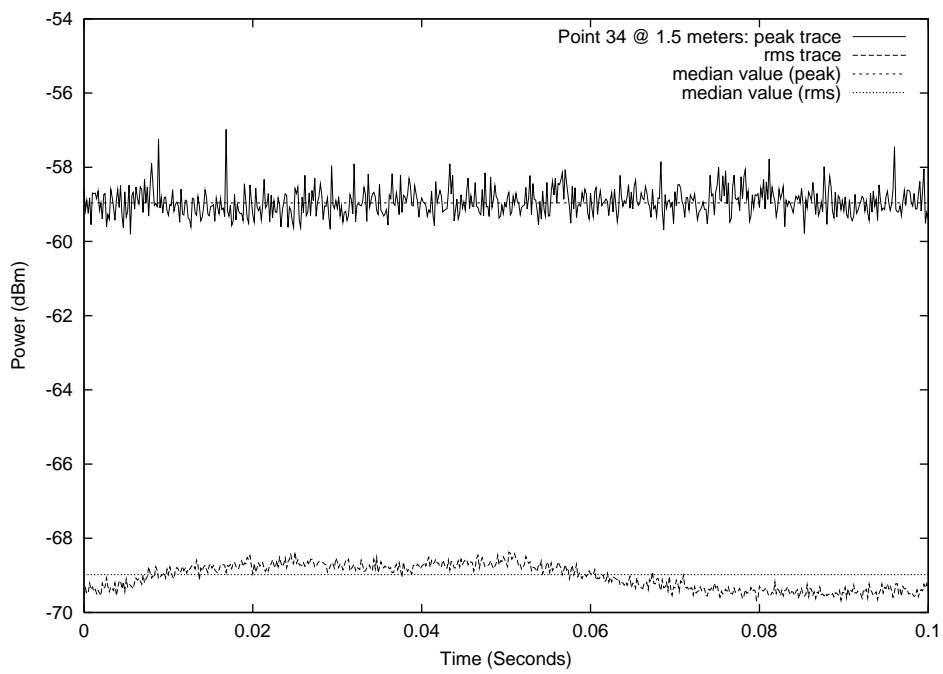


Figure 106: Power at 1.5 meters in location 34.

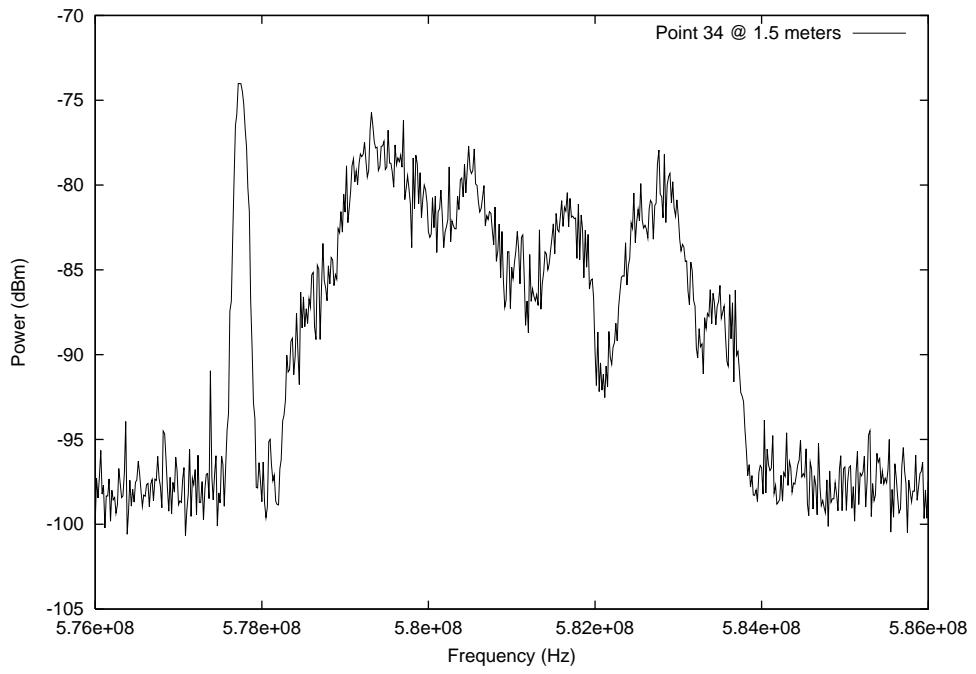


Figure 107: DTV envelope at 1.5 meters in location 34.

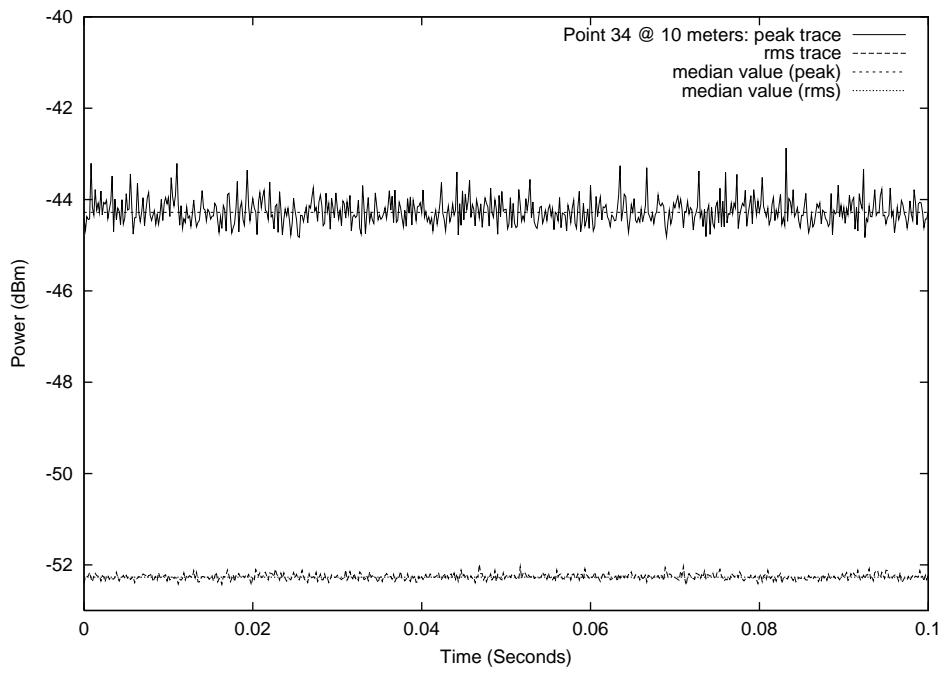


Figure 108: Power at 10 meters in location 34.

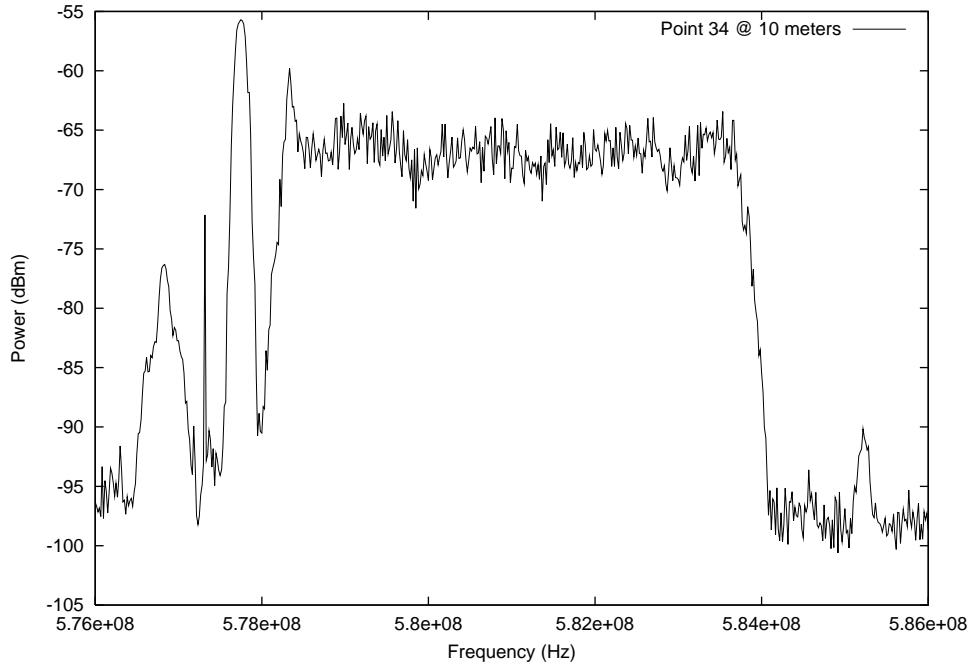


Figure 109: DTV envelope at 10 meters in location 34.

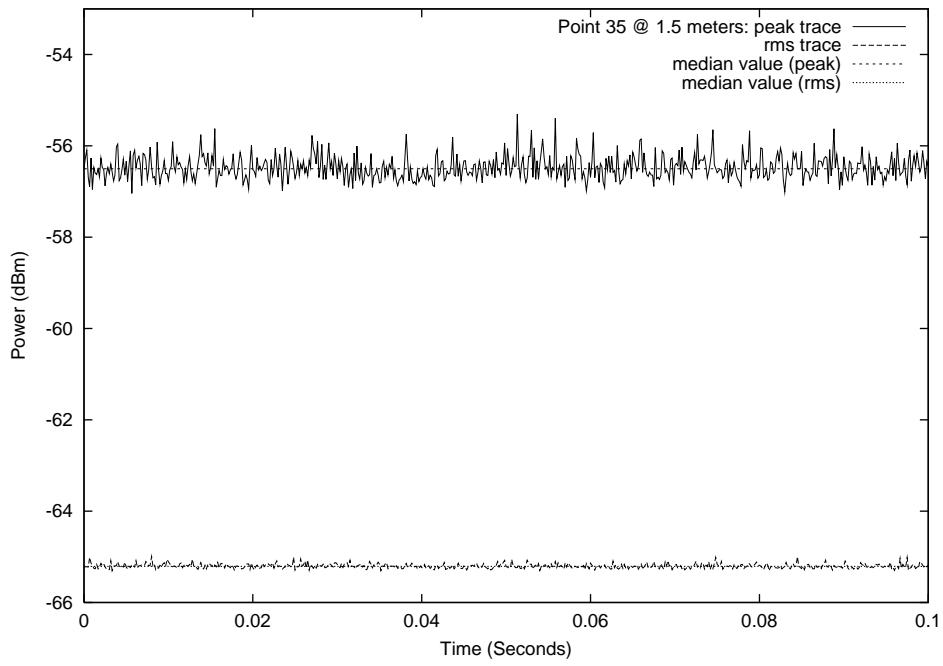


Figure 110: Power at 1.5 meters in location 35.

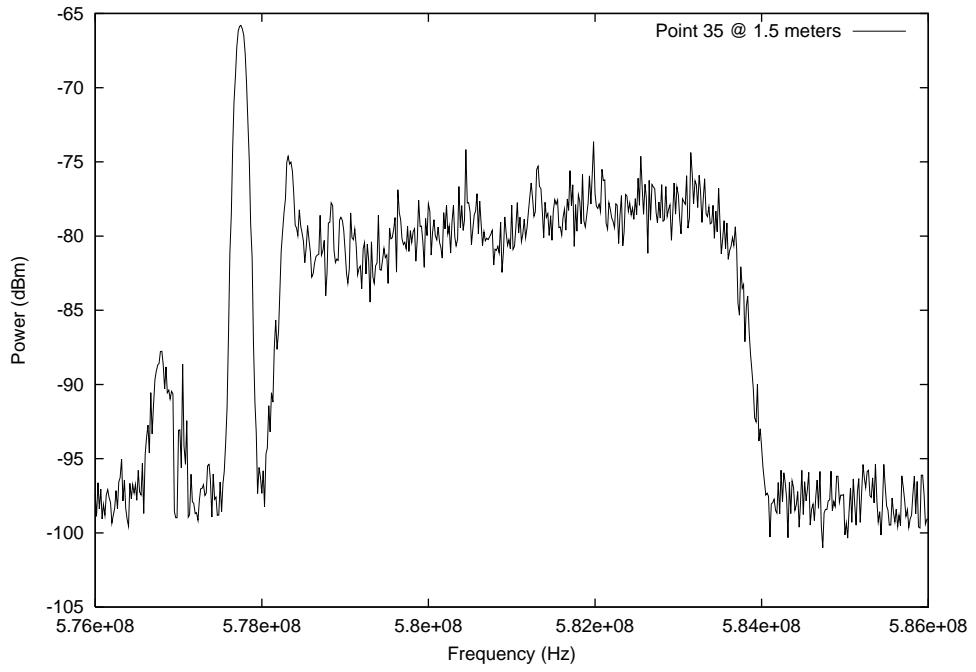


Figure 111: DTV envelope at 1.5 meters in location 35.

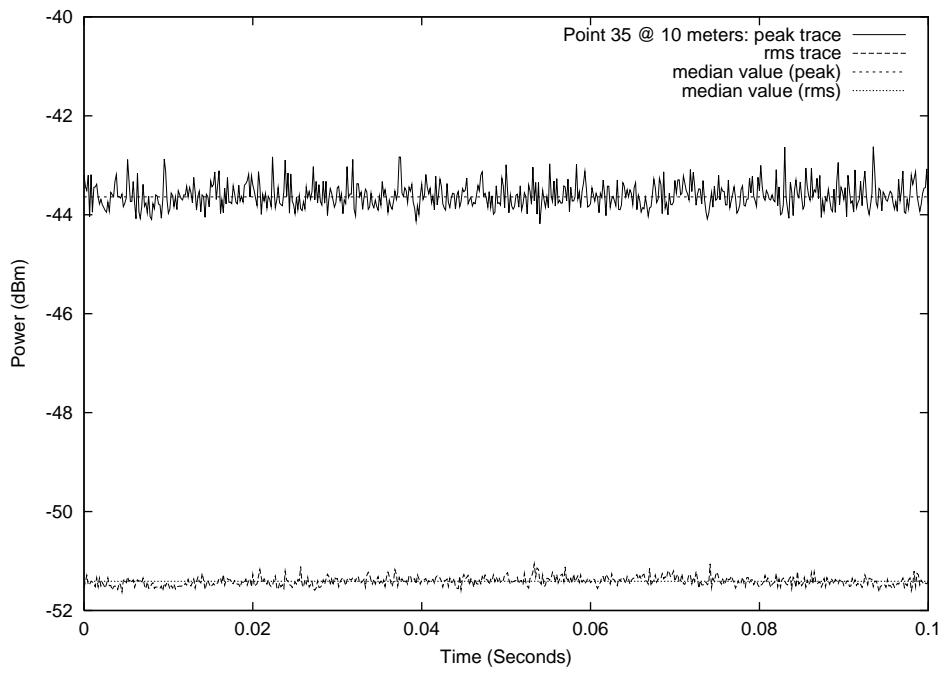


Figure 112: Power at 10 meters in location 35.

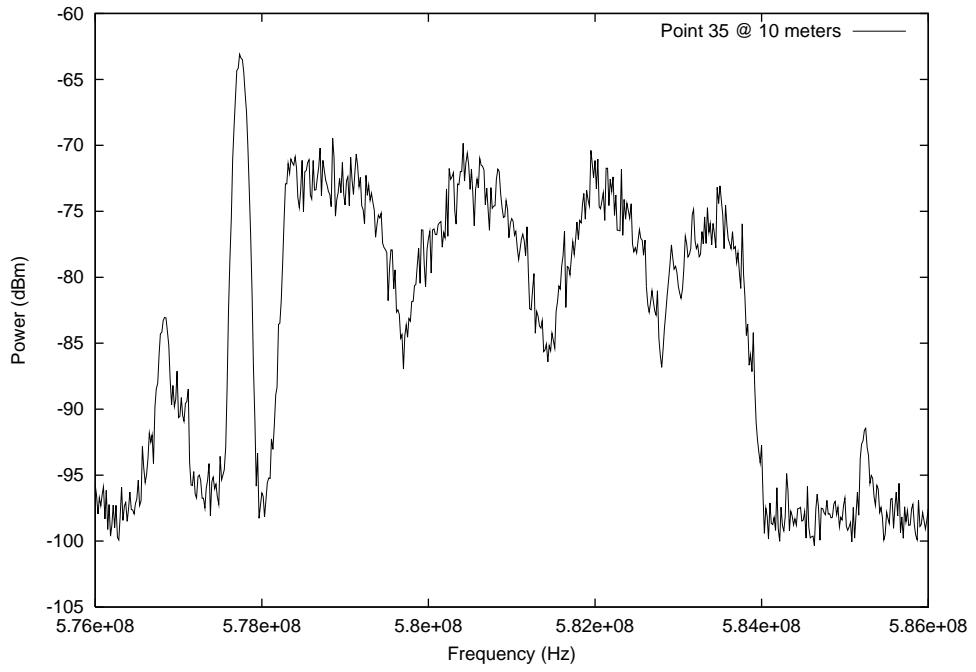


Figure 113: DTV envelope at 10 meters in location 35.

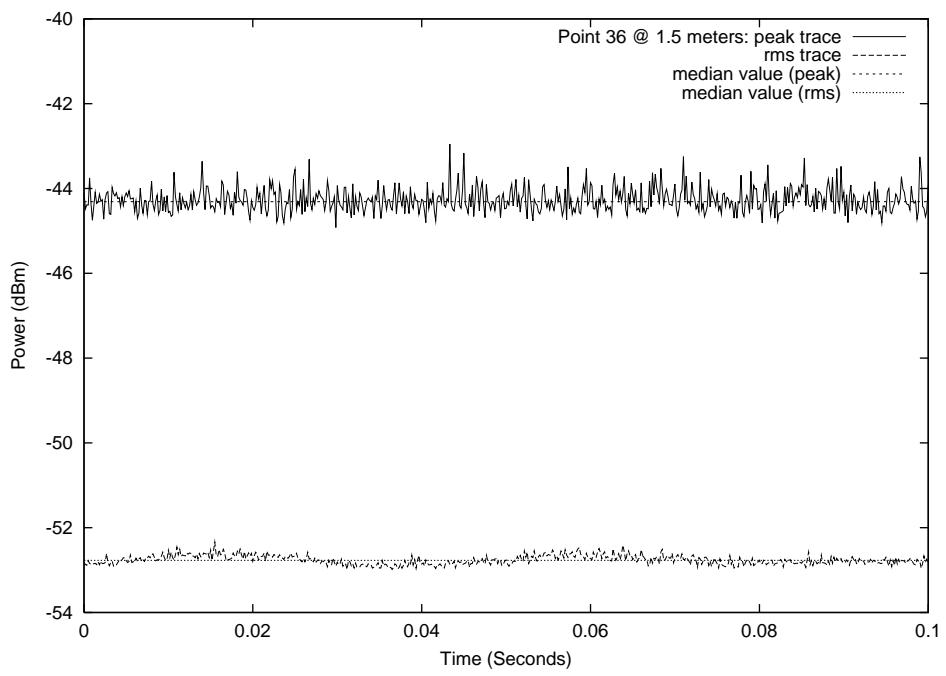


Figure 114: Power at 1.5 meters in location 36.

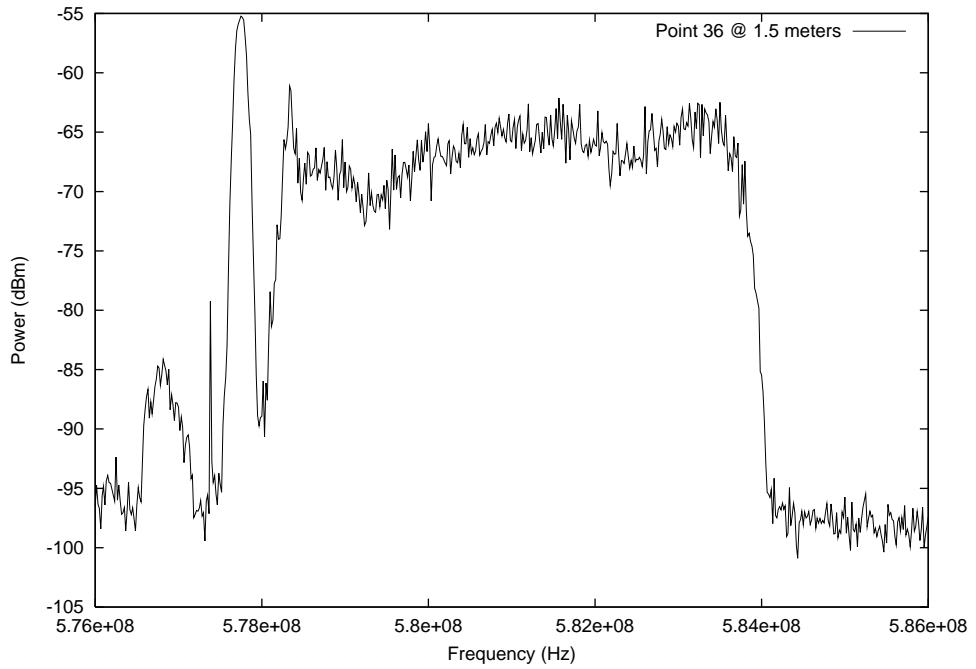


Figure 115: DTV envelope at 1.5 meters in location 36.

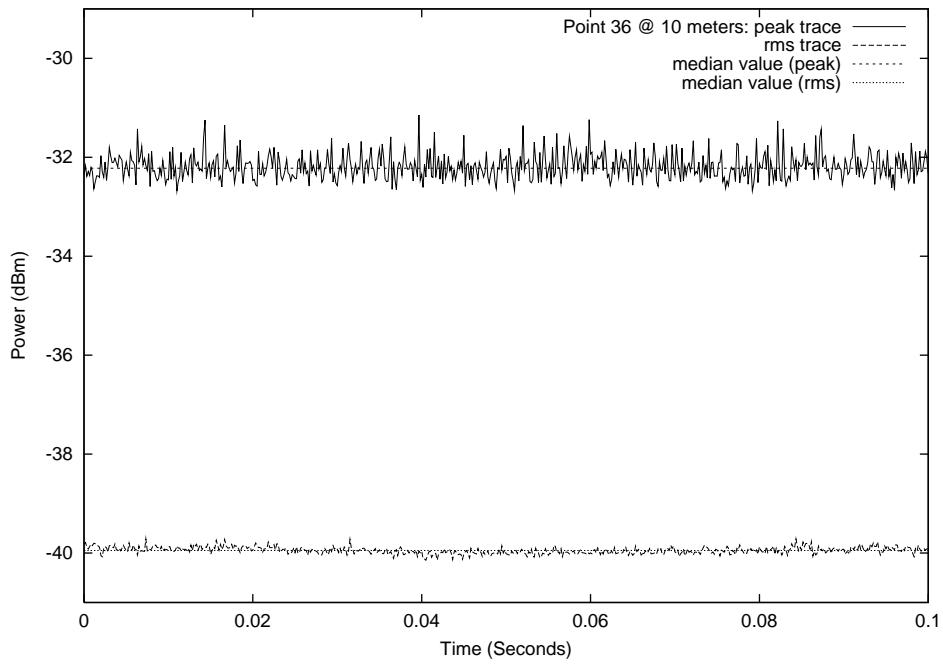


Figure 116: Power at 10 meters in location 36.

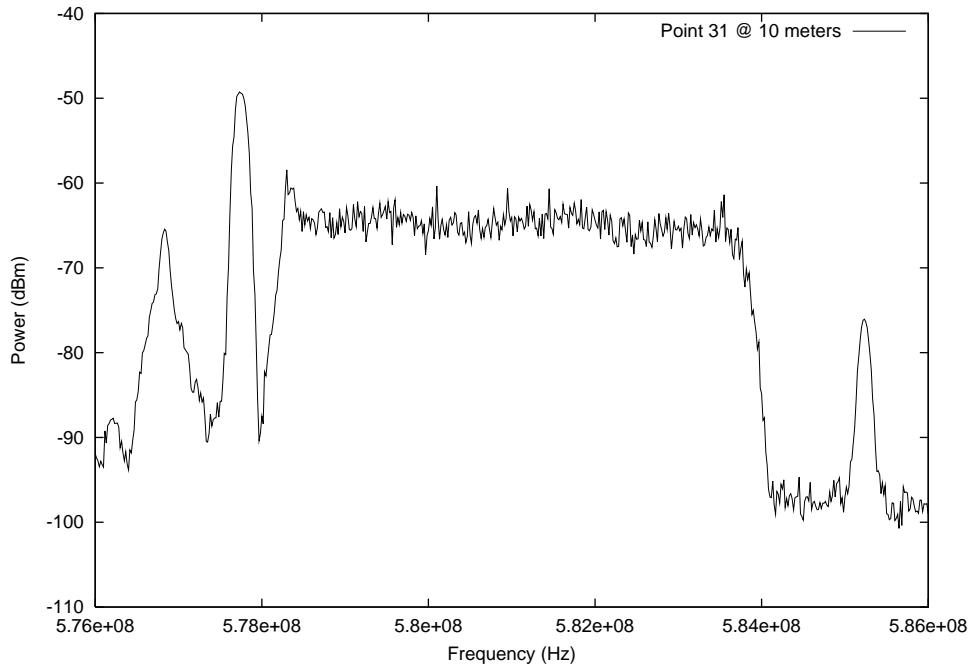


Figure 117: DTV envelope at 10 meters in location 36.

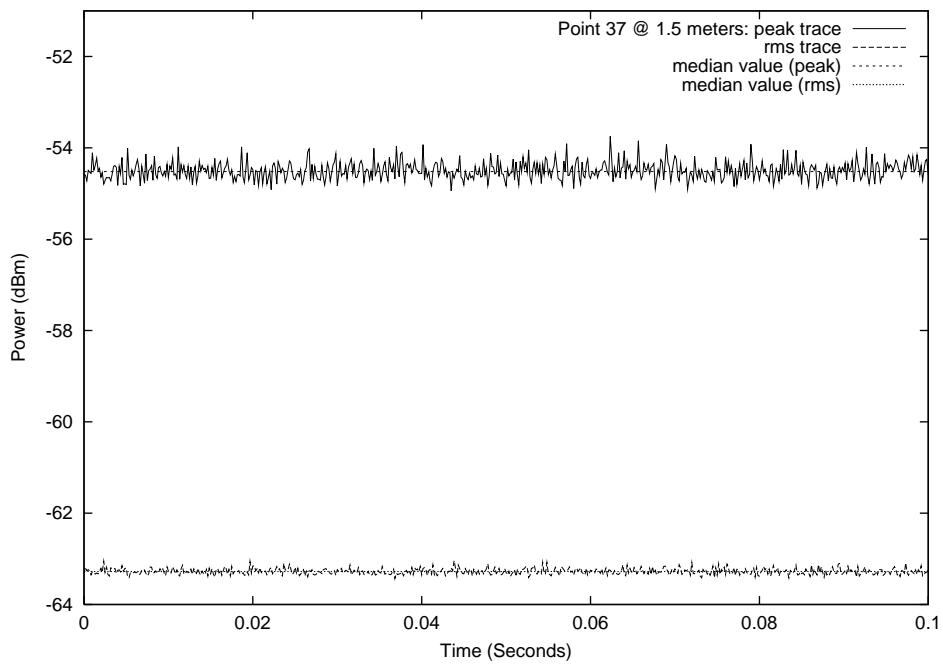


Figure 118: Power at 1.5 meters in location 37.

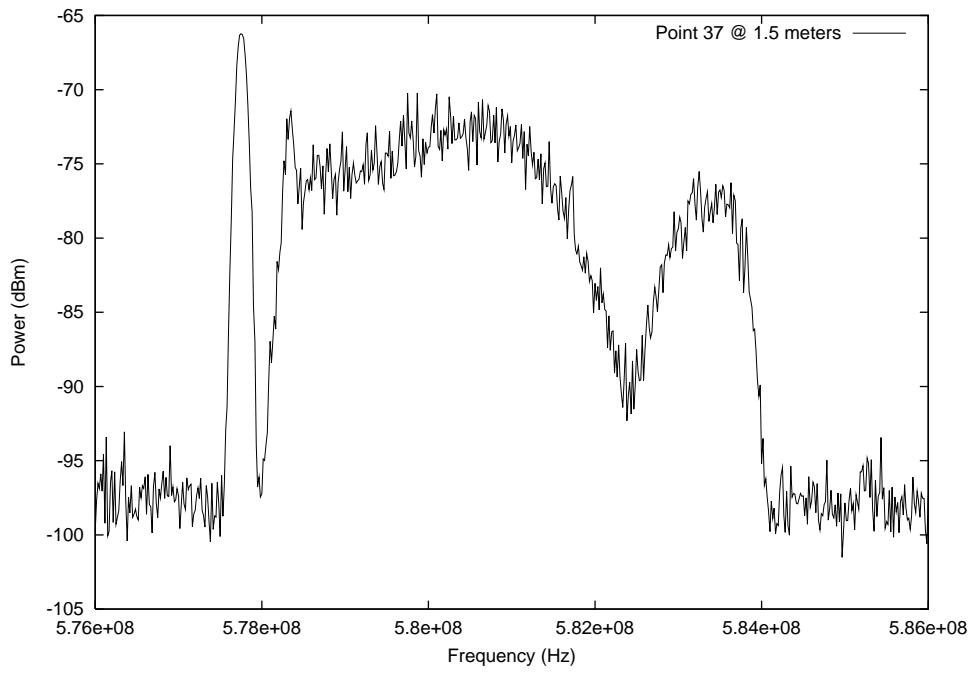


Figure 119: DTV envelope at 1.5 meters in location 37.

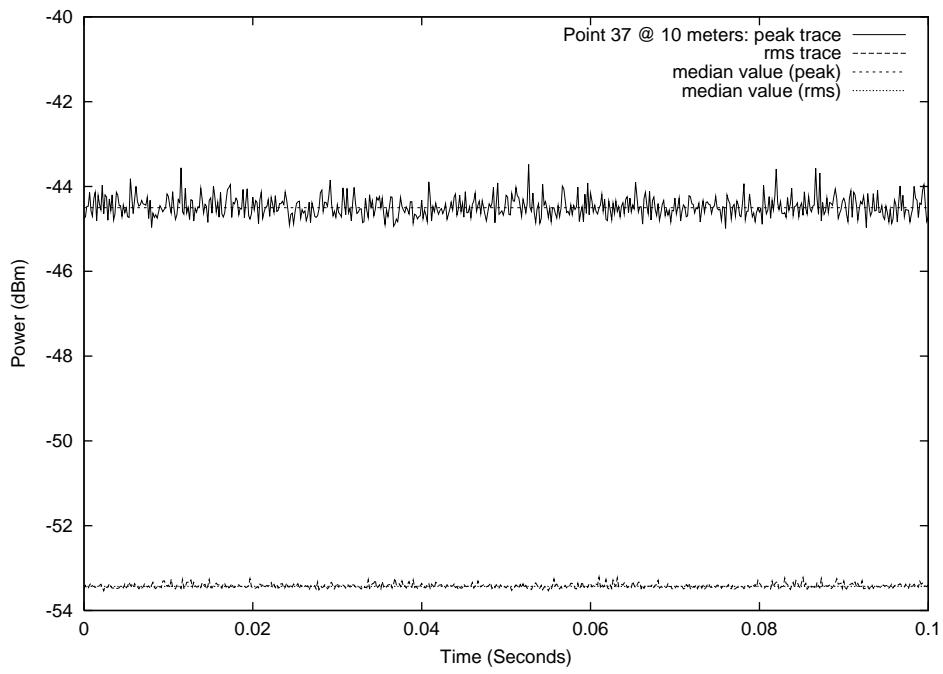


Figure 120: Power at 10 meters in location 37.

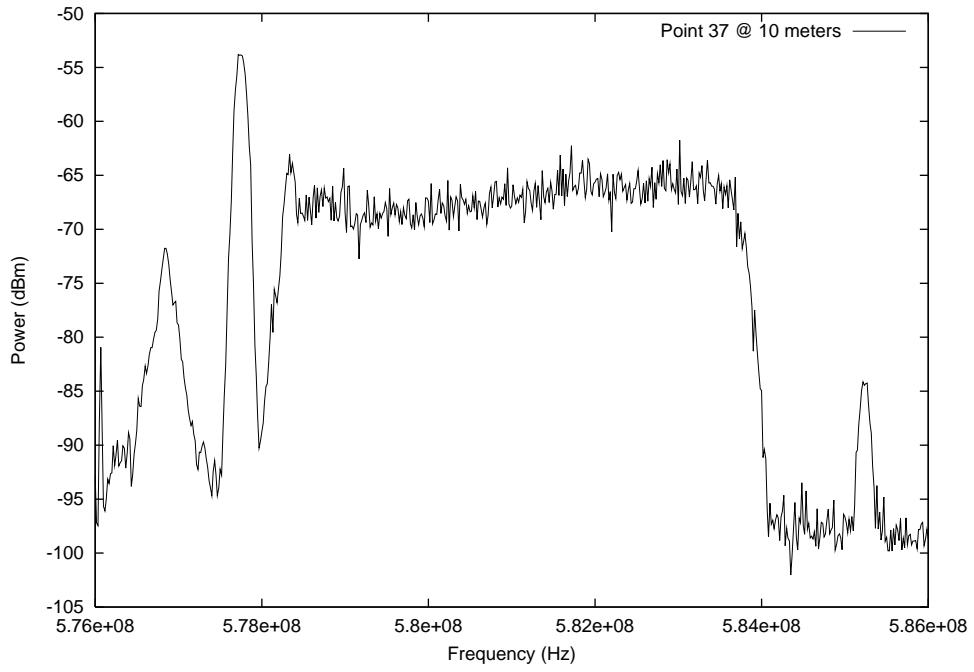


Figure 121: DTV envelope at 10 meters in location 37.

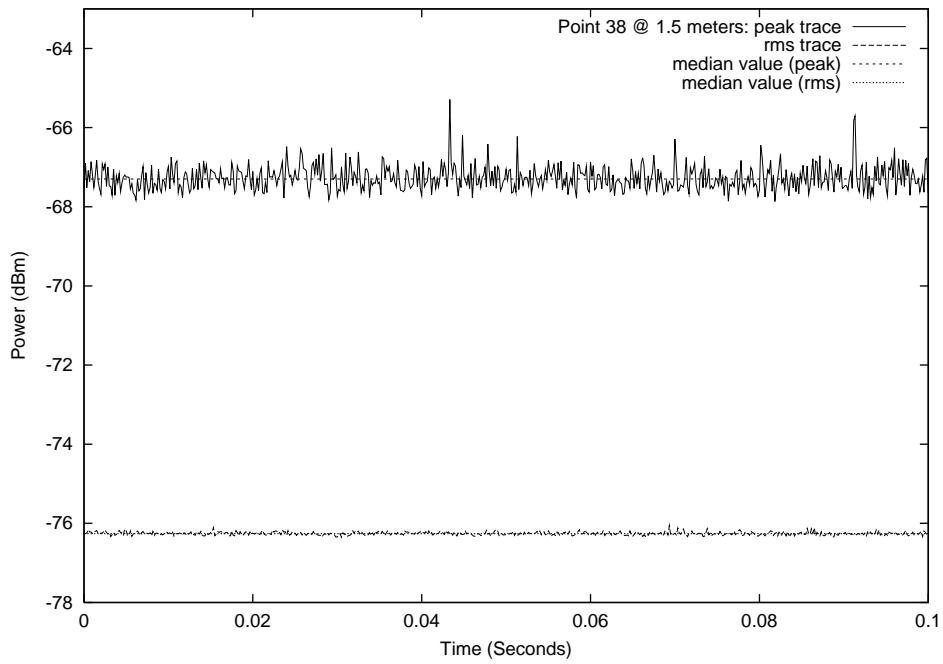


Figure 122: Power at 1.5 meters in location 38.

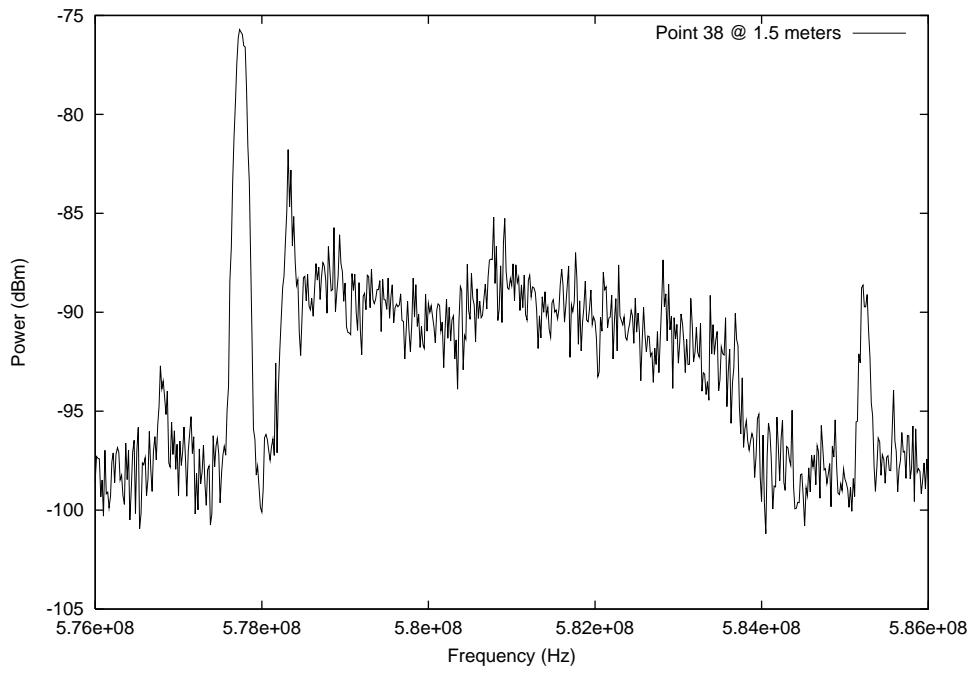


Figure 123: DTV envelope at 1.5 meters in location 38.

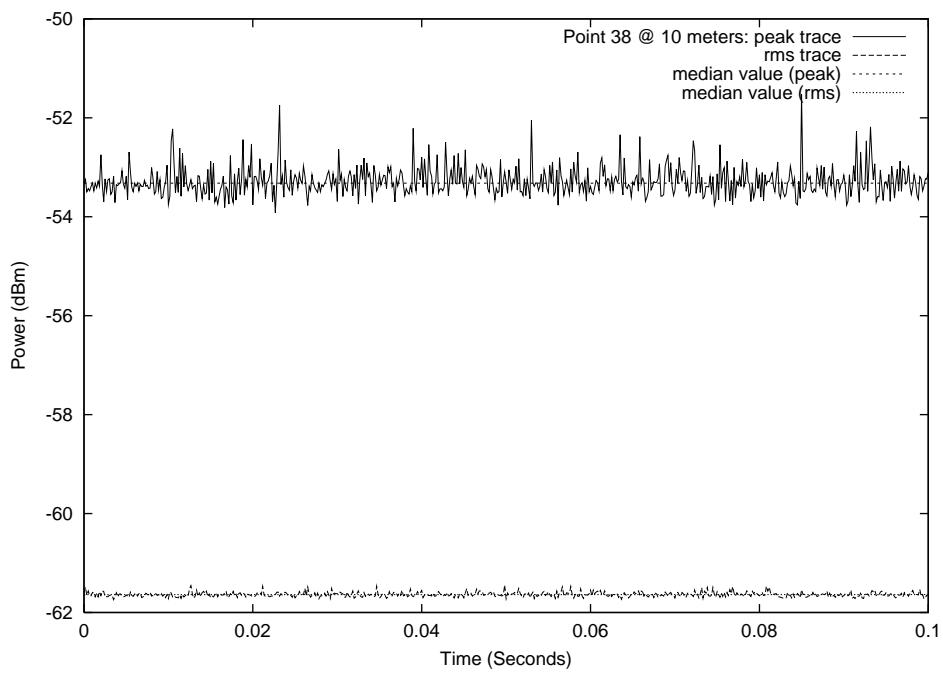


Figure 124: Power at 10 meters in location 38.

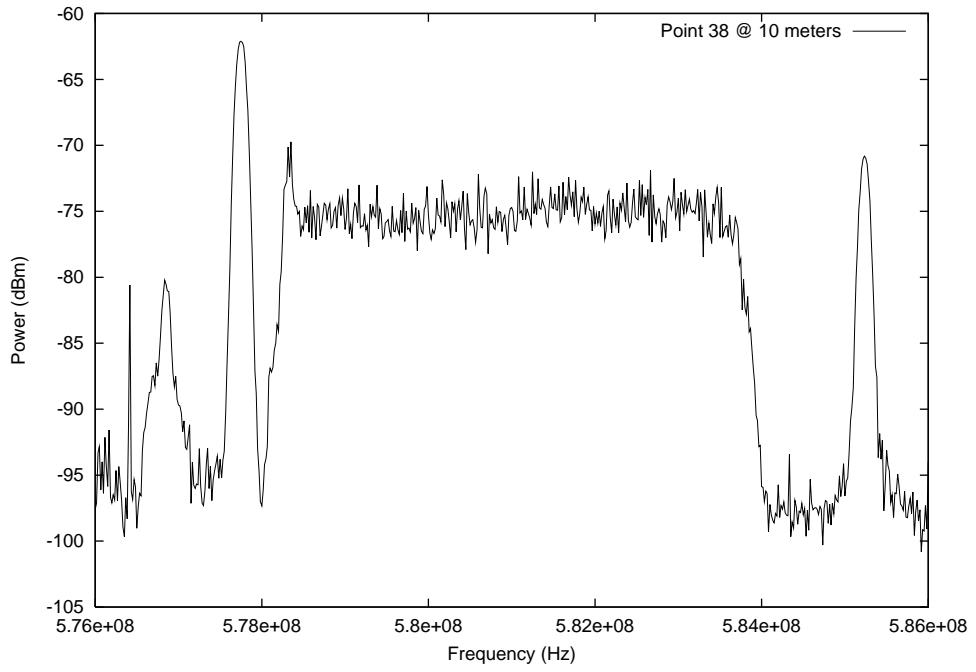


Figure 125: DTV envelope at 10 meters in location 38.

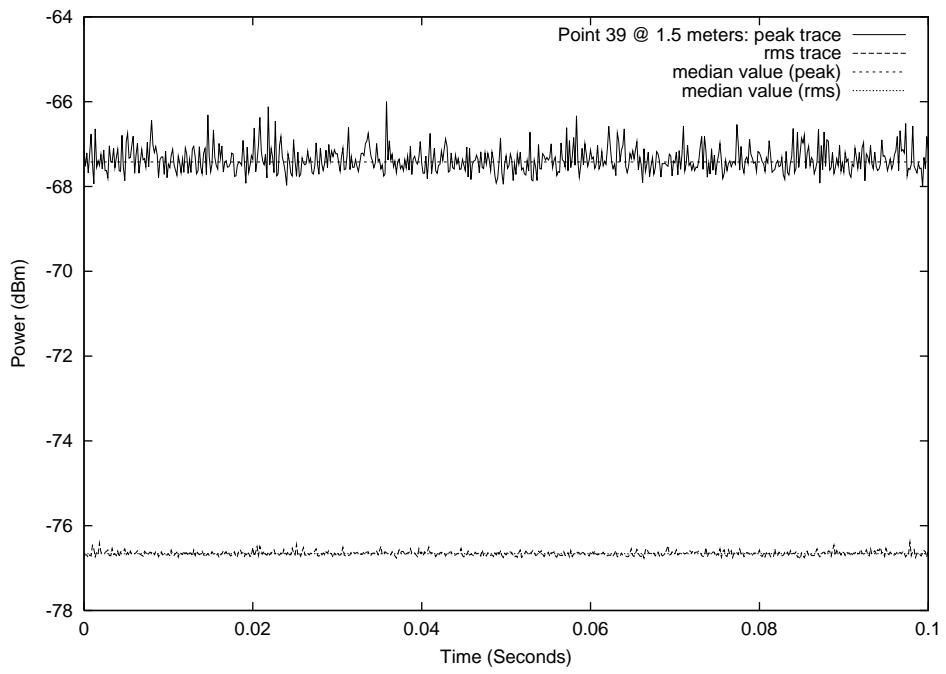


Figure 126: Power at 1.5 meters in location 39.

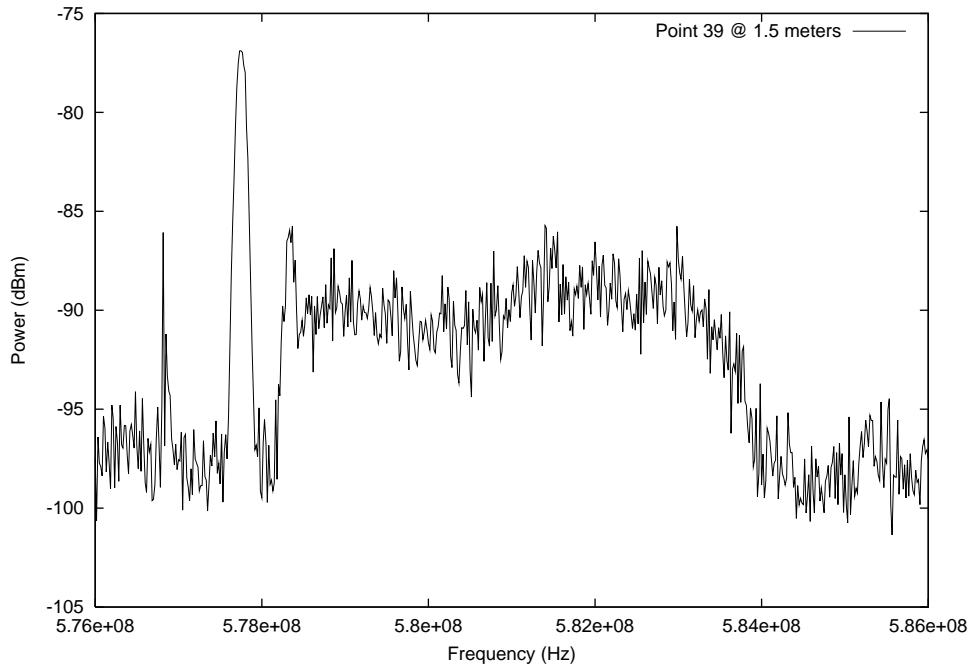


Figure 127: DTV envelope at 1.5 meters in location 39.

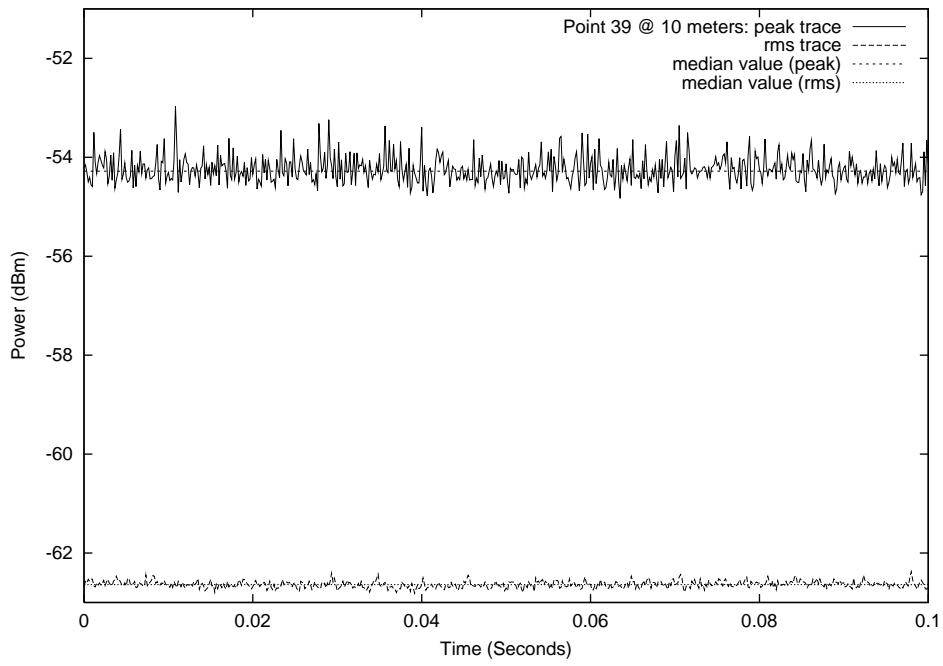


Figure 128: Power at 10 meters in location 39.

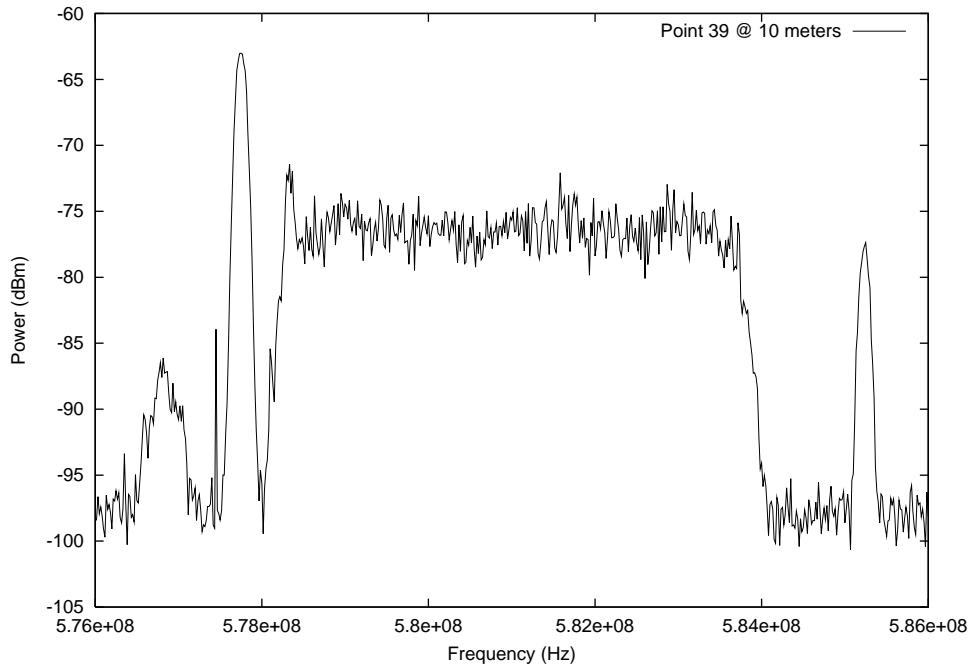


Figure 129: DTV envelope at 10 meters in location 39.

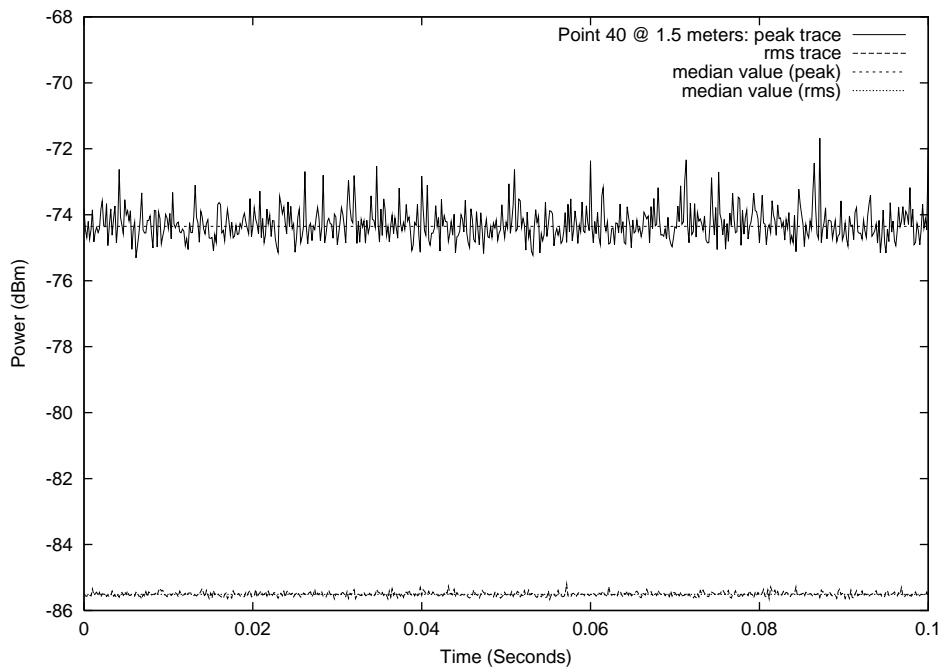


Figure 130: Power at 1.5 meters in location 40.

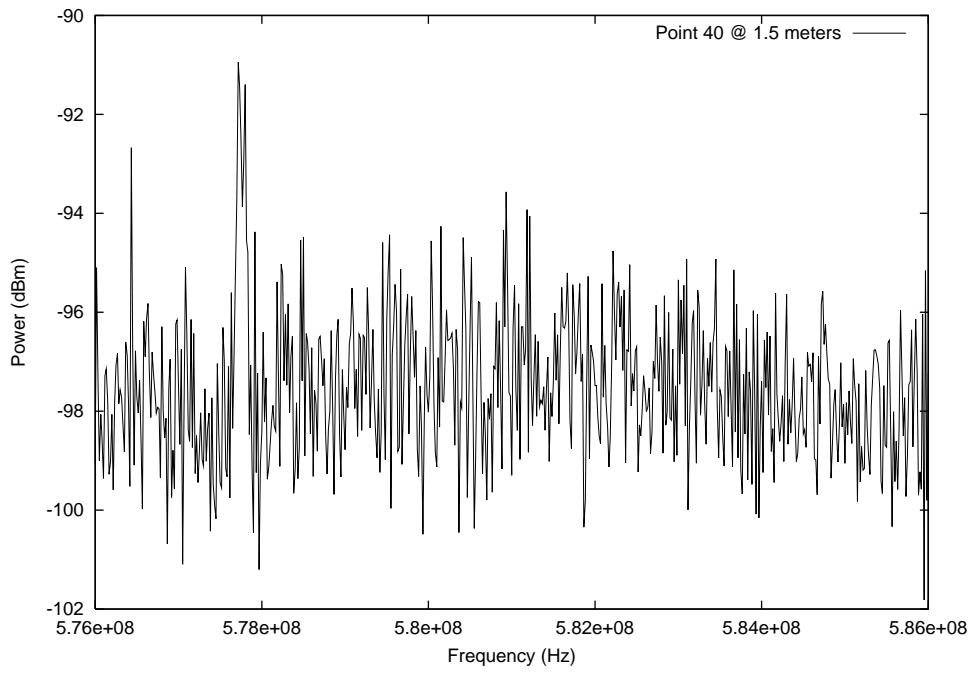


Figure 131: DTV envelope at 1.5 meters in location 40.

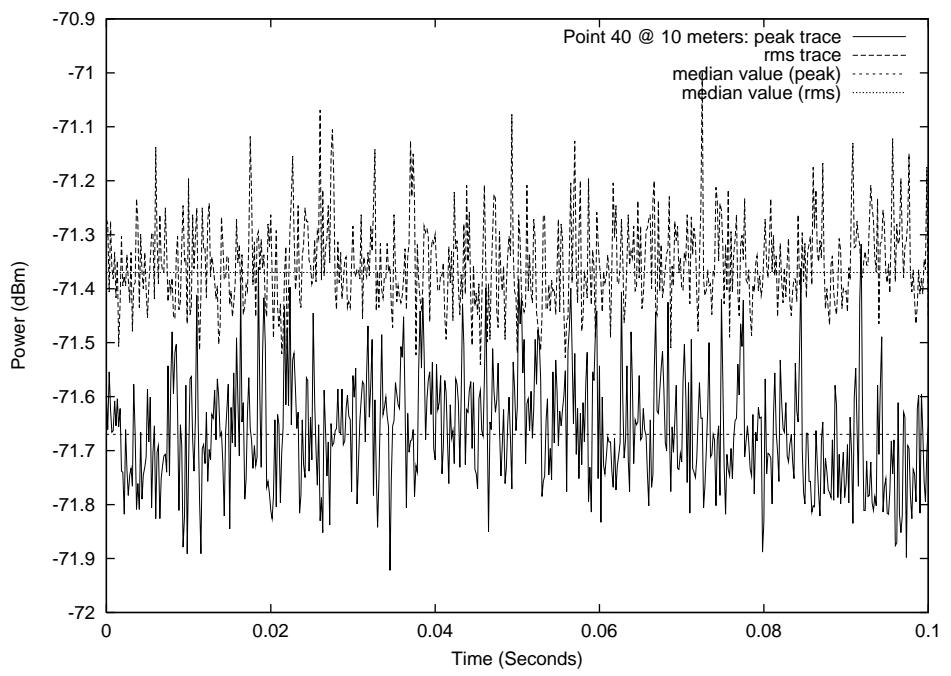


Figure 132: Power at 10 meters in location 40.

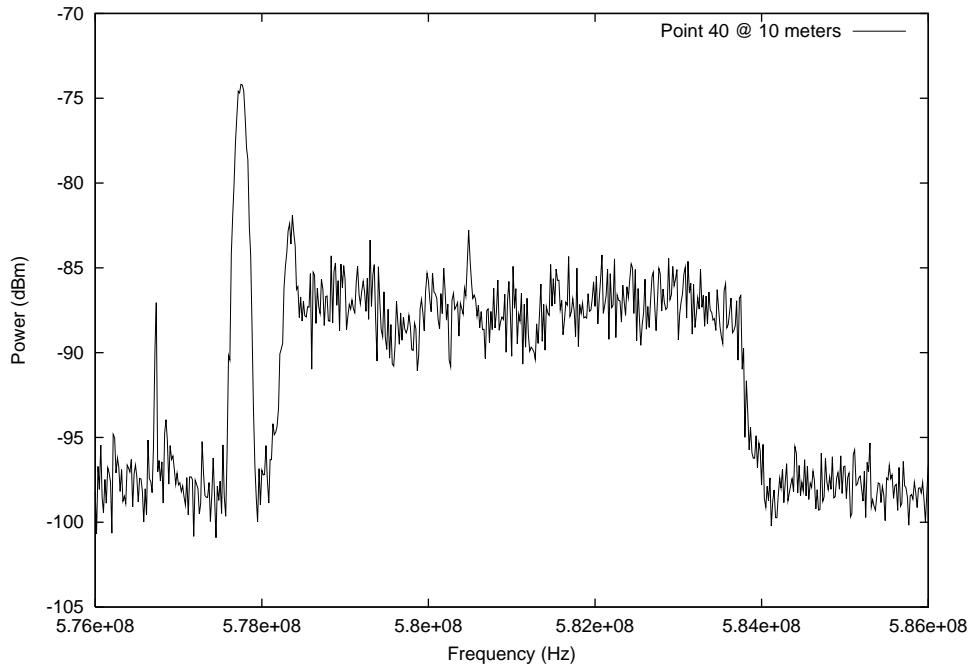


Figure 133: DTV envelope at 10 meters in location 40.

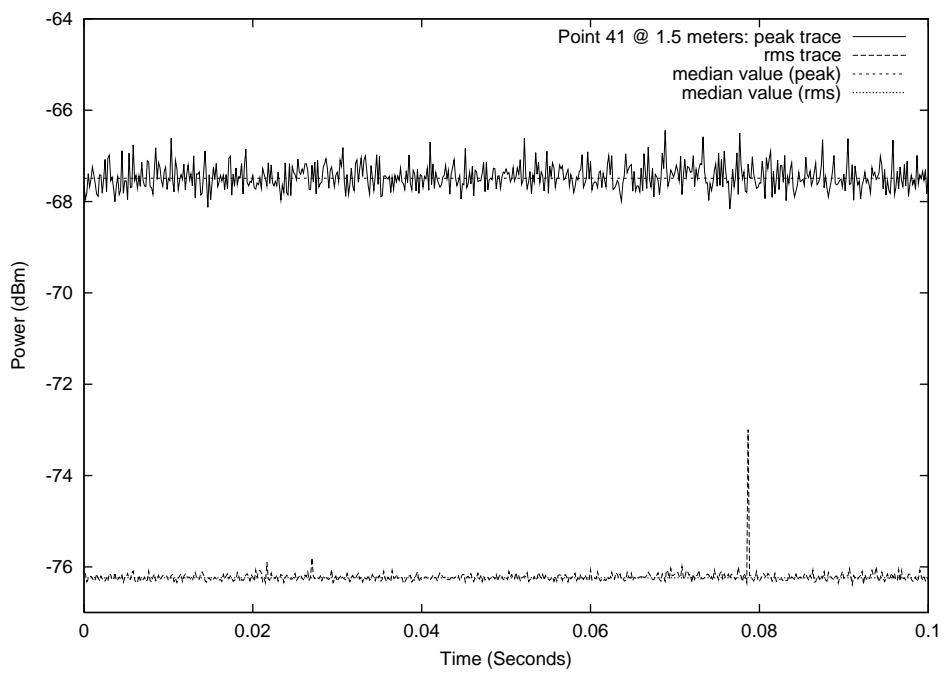


Figure 134: Power at 1.5 meters in location 41.

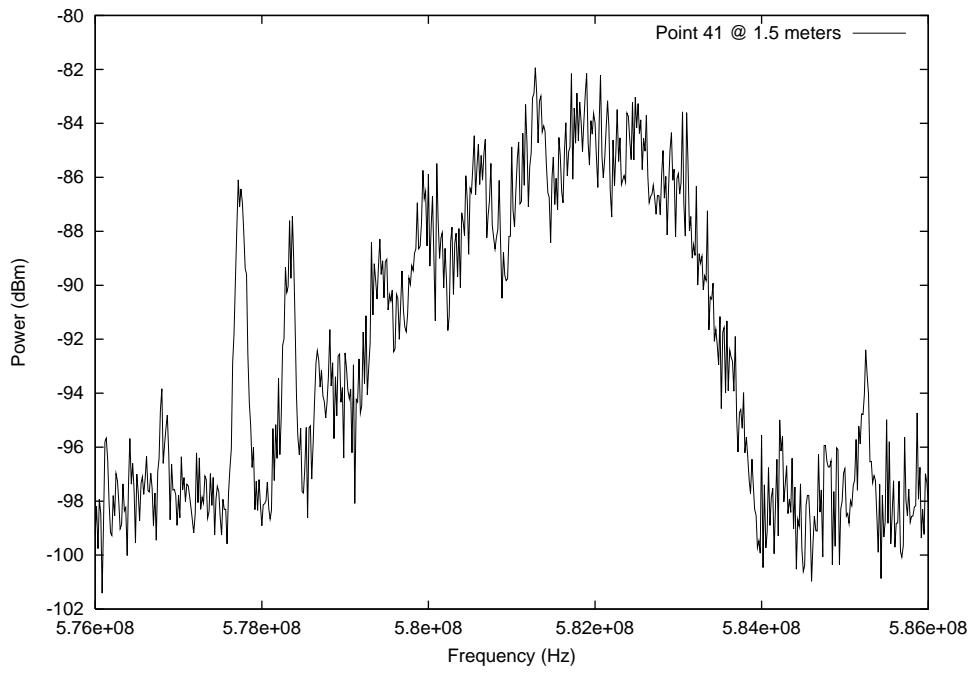


Figure 135: DTV envelope at 1.5 meters in location 41.

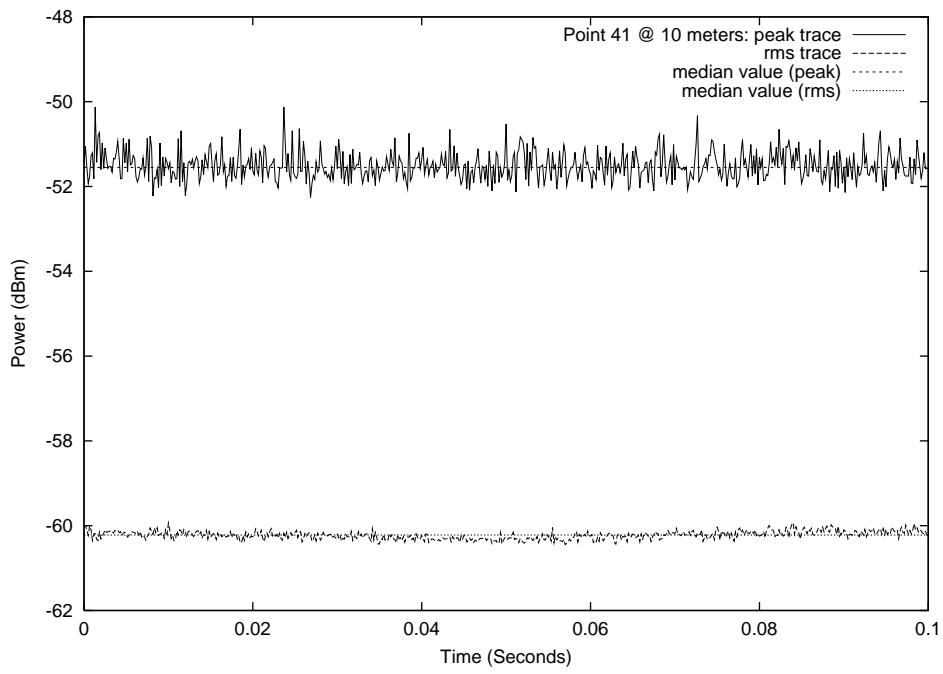


Figure 136: Power at 10 meters in location 41.

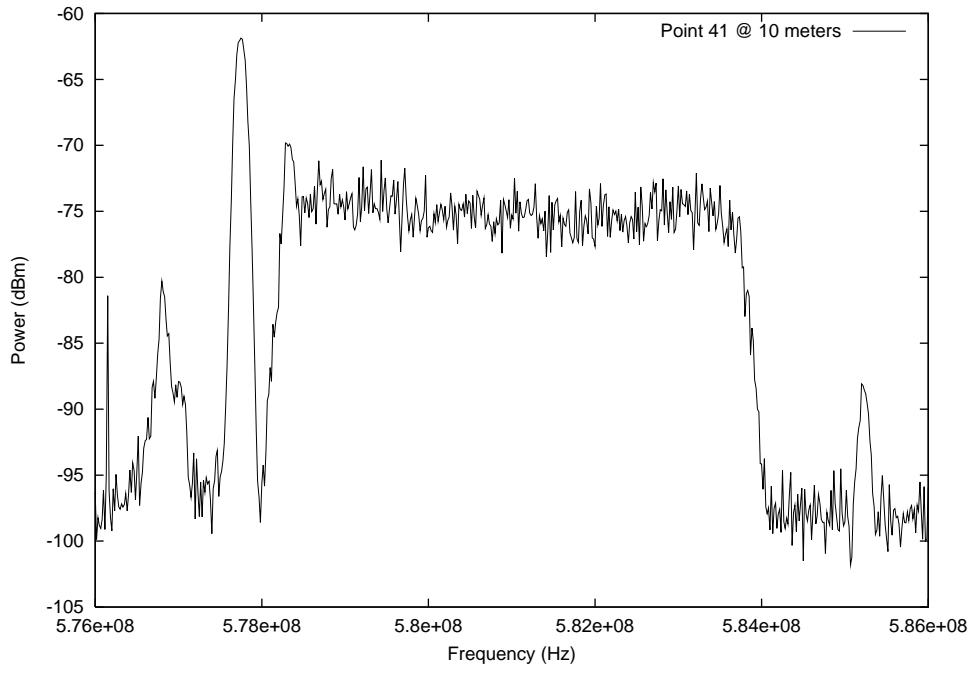


Figure 137: DTV envelope at 10 meters in location 41.

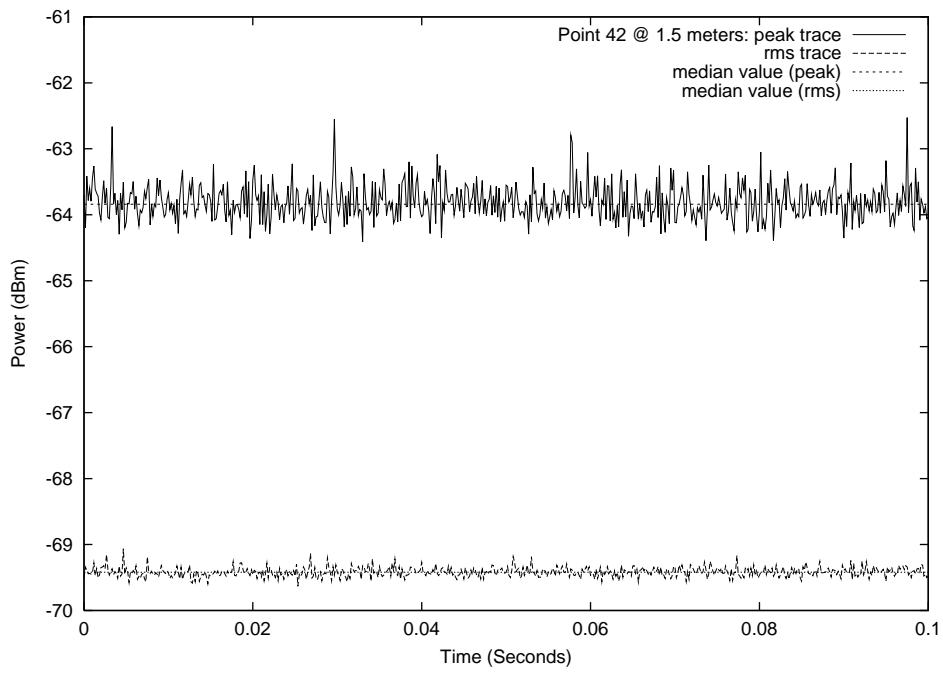


Figure 138: Power at 1.5 meters in location 42.

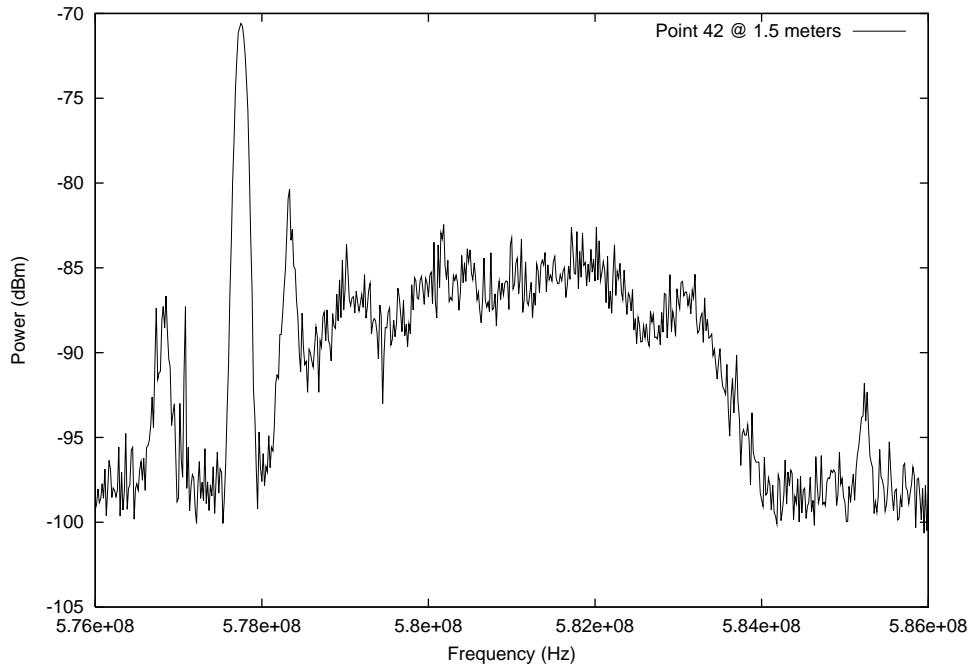


Figure 139: DTV envelope at 1.5 meters in location 42.

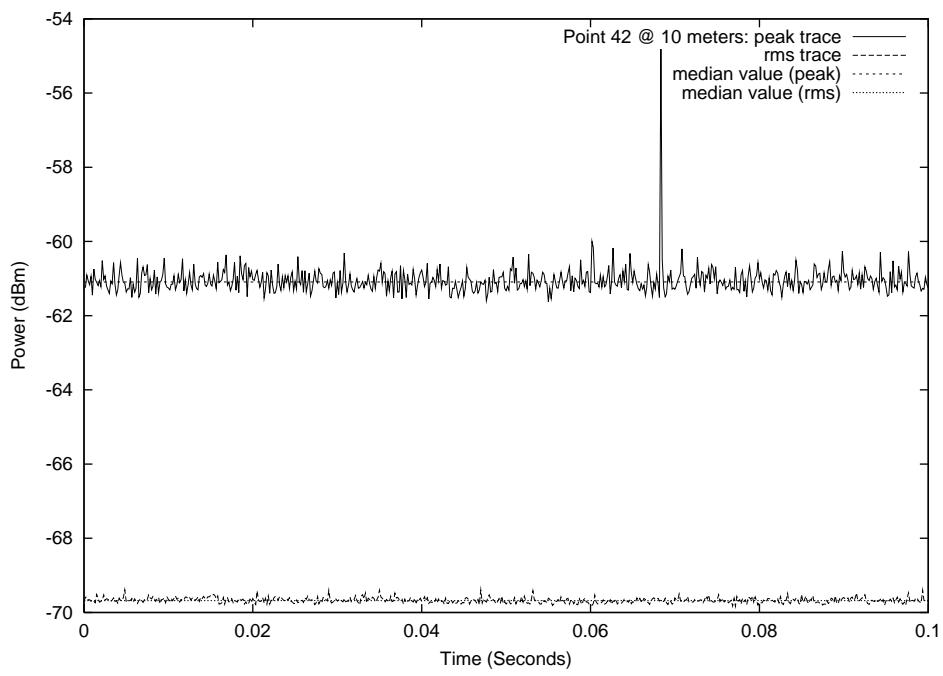


Figure 140: Power at 10 meters in location 42.

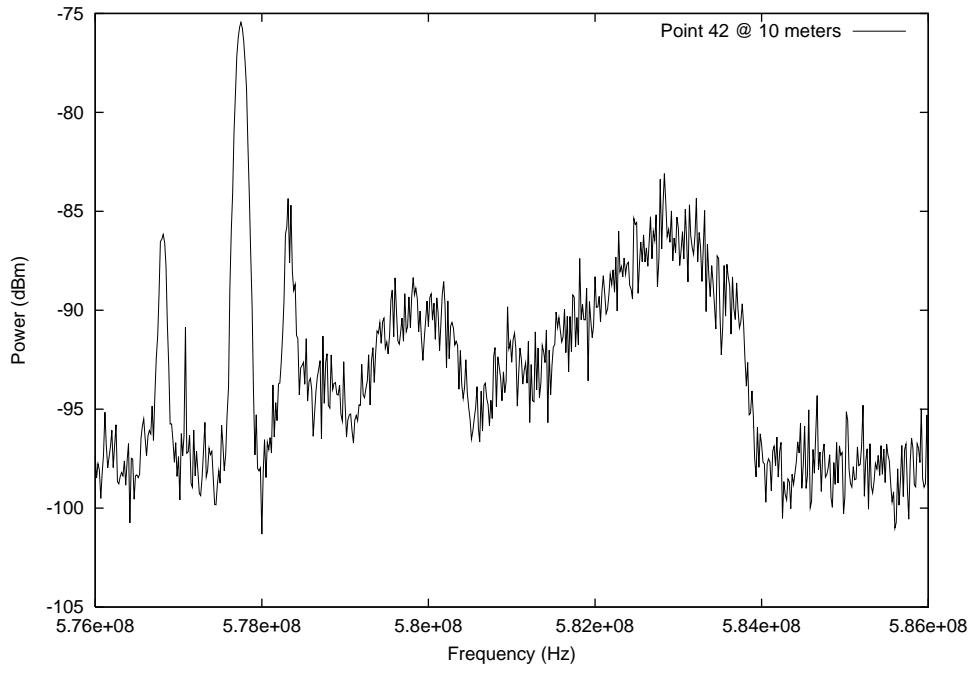


Figure 141: DTV envelope at 10 meters in location 42.