FM TRANSMISSION SYSTEM INTERMODULATION MEASUREMENTS

WYMS (FM) – 88.9 MHz

08 June 2006

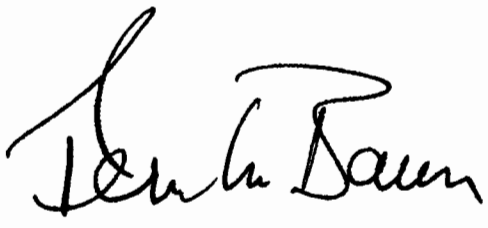
Equipment Performance Measurements for the WYMS transmission system were made on 08 June 2006, between the hours of 7:15-8:30PM CDT to fulfill the requirements of WYMS (FM) CP # BPED-20050627AAW. Following the conclusion of those tests, further investigation was made to determine if the combined signals of WYMS (FM) and WMWK (FM) and WUWM (FM) would produce intermodulation products of concern to other services, particularly to the WITI-TV Channel 6 aural carrier. This report summarizes those findings.

These measurements were made following the completion of Equipment Tests for all three FM stations, which are now operating into a new combined antenna system mounted on the WITI TV-6 tower.

The measurements show the combined transmission systems to be operating in compliance with the FM Transmission System Requirements set forth in FCC 73.317 (b)-(d) and do not produce intermodulation or spurious products in excess of those permitted by the Rules.

All tests were made by Terrence M. Baun, of Criterion Broadcast Services.

The results contained herein are true and accurate to the best of my knowledge and belief.



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Terrence M. Baun

RF Tests were made utilizing a TEKTRONIX 2710 Spectrum Analyzer, serial # B021139. Observations were made directly from the screen of the spectrum analyzer in addition to the attached printed plots generated from the screen.

The RF feed to the spectrum analyzer was through a whip antenna adjusted to ¼ wave resonance at 98.0 MHz., the center of the FM band.

All measurement sweeps were made with typical stereo programming on all of the FM stations and television station, with each FM transmitter operating at its authorized power for its new antenna height and antenna gain per granted Construction Permits, simultaneously utilizing the shared antenna.

Prior to the measurements, a computer-based intermodulation study was run, calculating products to the 6th order for all stations in the area of interest from 88 MHz. to 188 MHz. Each frequency resulting from that analysis was examined and none were found to be less than -80 dB from carrier.

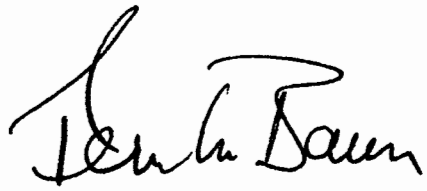
Following that, individual sweeps were made at each of 3 horizontal scales to determine station occupied bandwidth performance. Suspect signals were examined with increased gain and a fundamental notch filter to verify that they meet the -80 dB requirement. Station harmonics to the 3rd harmonic were similarly examined. The following printed sweeps are attached for reference:

Sweep 1 (A-C). The RF Spectrum Analyzer was tuned to display WYMS (FM) at center screen, with a horizontal scale of +/- 250 KHz, +/- 500 KHz, and +/- 1 MHz of carrier. The vertical scale was 10 dB/Division. The trace revealed the no intermodulation/spurious products less than–80 dBm down from the WYMS carrier during modulation, thus meeting the requirements of -80 dBm specified in 73.317 (b-d).

Sweep 2. With all three FM carriers off, the RF Spectrum Analyzer was tuned to display 88.1 MHz. at center screen, with a horizontal scale of +/- 250 KHz. The vertical scale was 10 dB/Division. The trace revealed two existing signals at approximately 88.0 MHz and 88.345 MHz. These signals exist with all three FM carriers on or off, and their origin is unknown. They do not change with modulation of any of the three FM carriers.

Sweep 3. The RF Spectrum Analyzer was tuned to display WYMS (FM) at center screen, with a horizontal scale of +/- 2.5 MHz. The vertical scale was 10 dB/Division. This trace shows the aural carrier of WITI-TV6 as well as all three of the FM stations of interest. Again, no intermodulation products were noted.

As a result of the tests and measurements contained herein, I certify that the WYMS (FM) transmission system, when combined with the signals of WMWK (FM) and WUWM (FM) operating into a shared antenna, is in conformance with the FM transmission system requirements of FCC 73.317 (b)-(d) as required by Construction Permit BPED-20050627AAW.



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June 08, 2006

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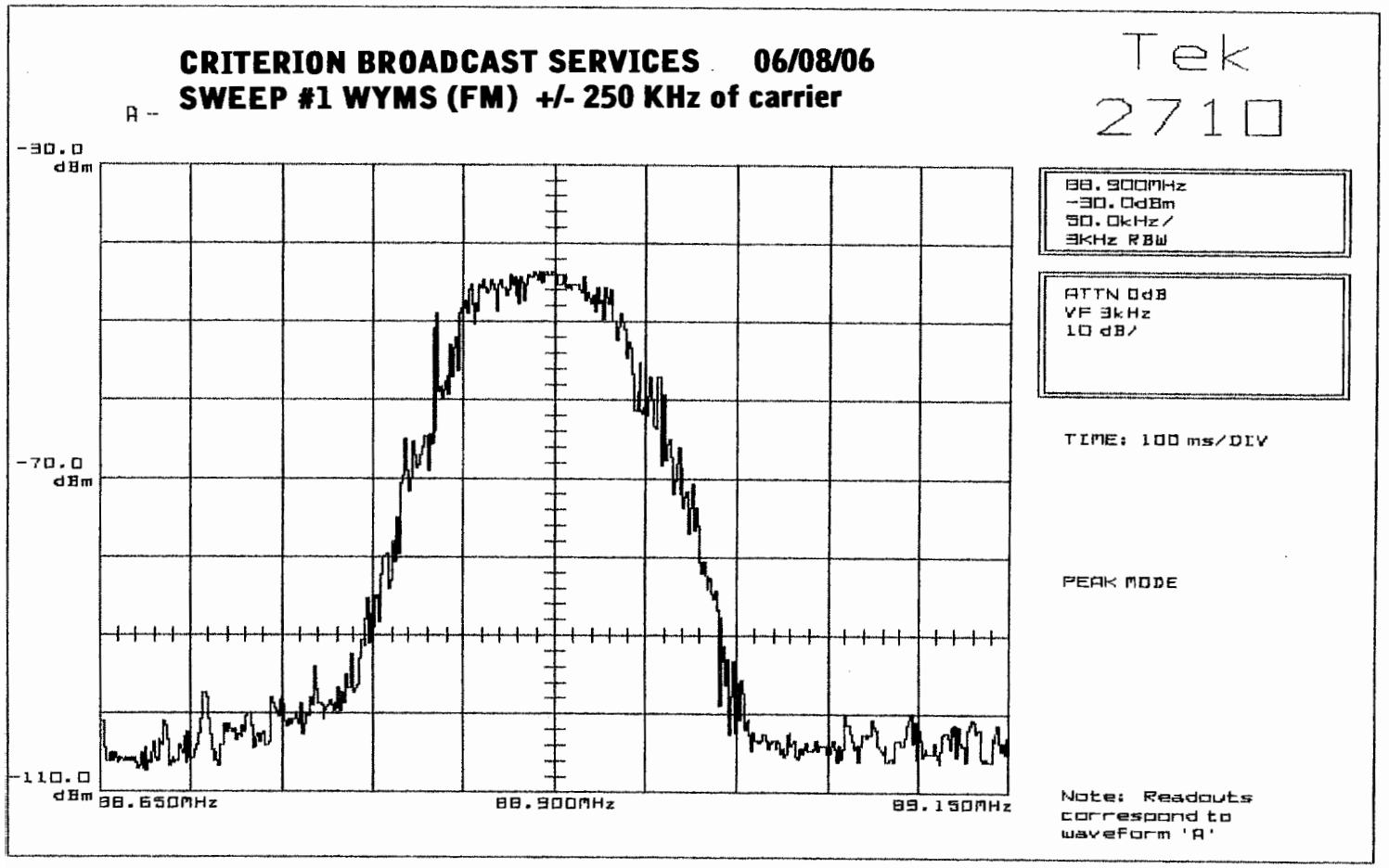
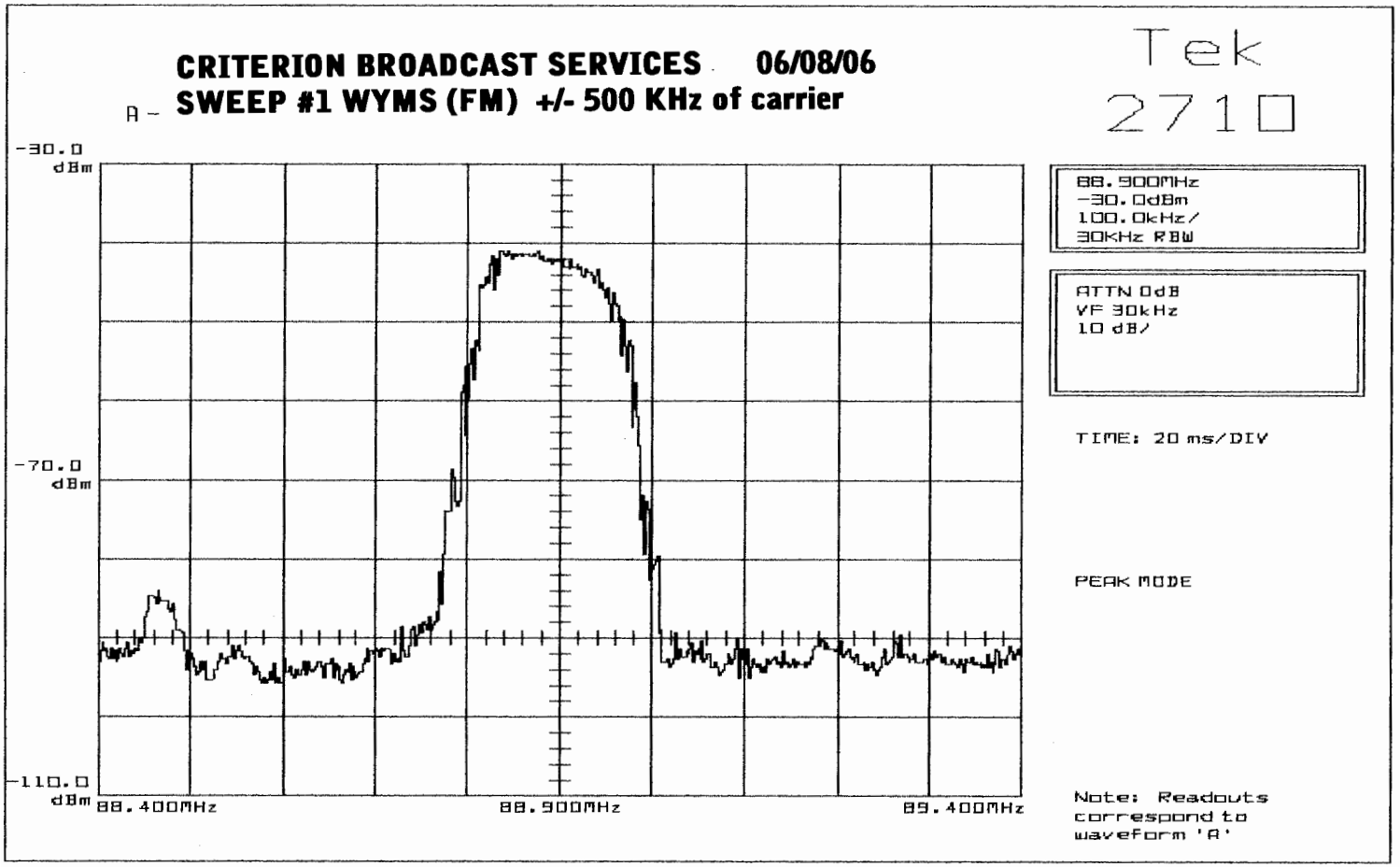
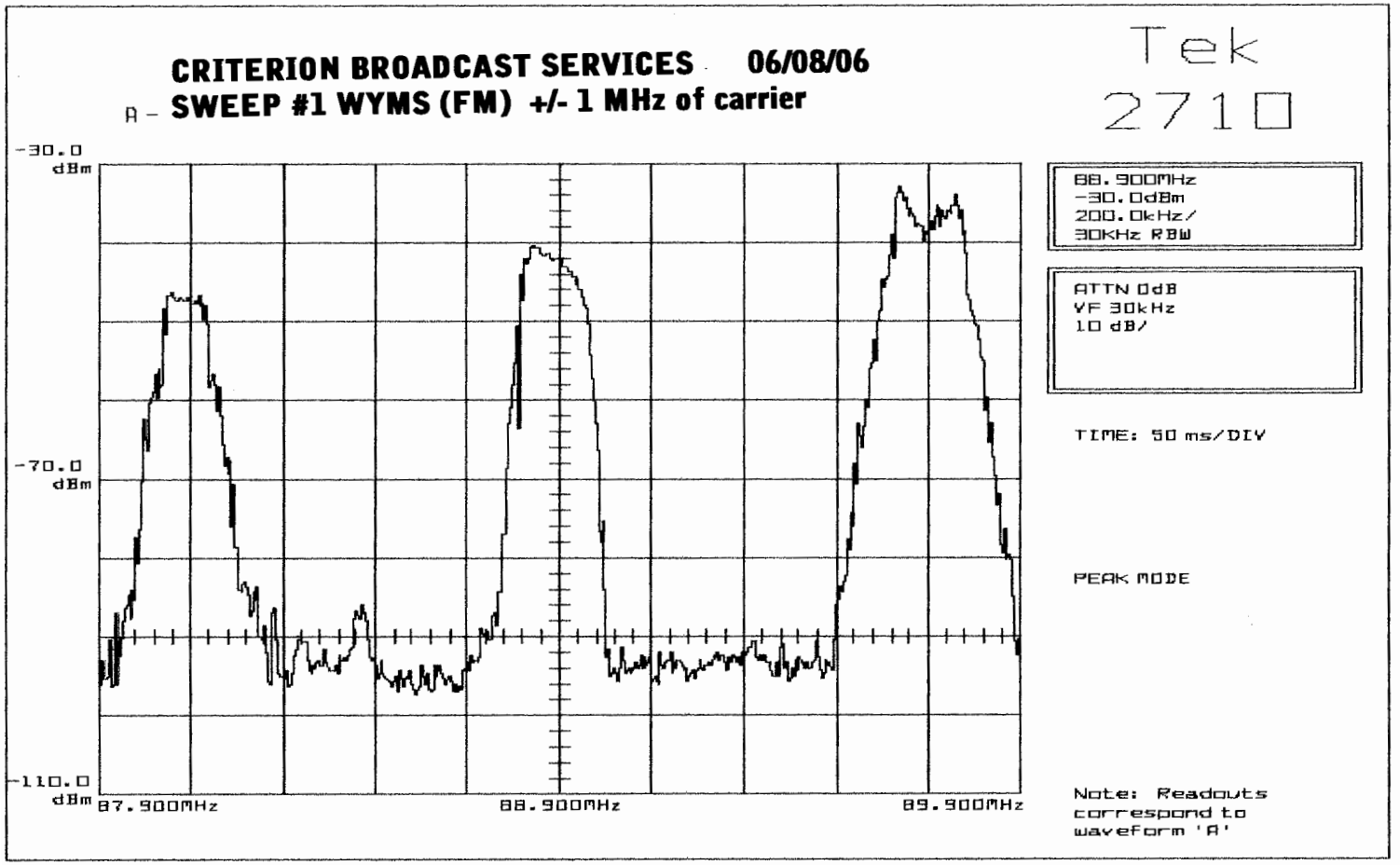
SWEEP #1 WYMS (FM) +/- 250 KHz of carrier



CRITERION BROADCAST SERVICES 06/08/06

SWEEP #1 WYMS (FM) +/- 500 KHz of carrier




CRITERION BROADCAST SERVICES 06/08/06
A - SWEEP #1 WYMS (FM) +/- 1 MHz of carrier
Tek
2710
-30.0 dBm
-70.0 dBm
-110.0 dBm
87.900MHz
88.900MHz
89.900MHz
88.900MHz
-30.0dBm
200.0kHz/
30KHz RBW
ATTN 0dB
VF 30kHz
10 dB/
TIME: 50 ms/DIV
PEAK MODE
Note: Readouts correspond to waveform 'A'

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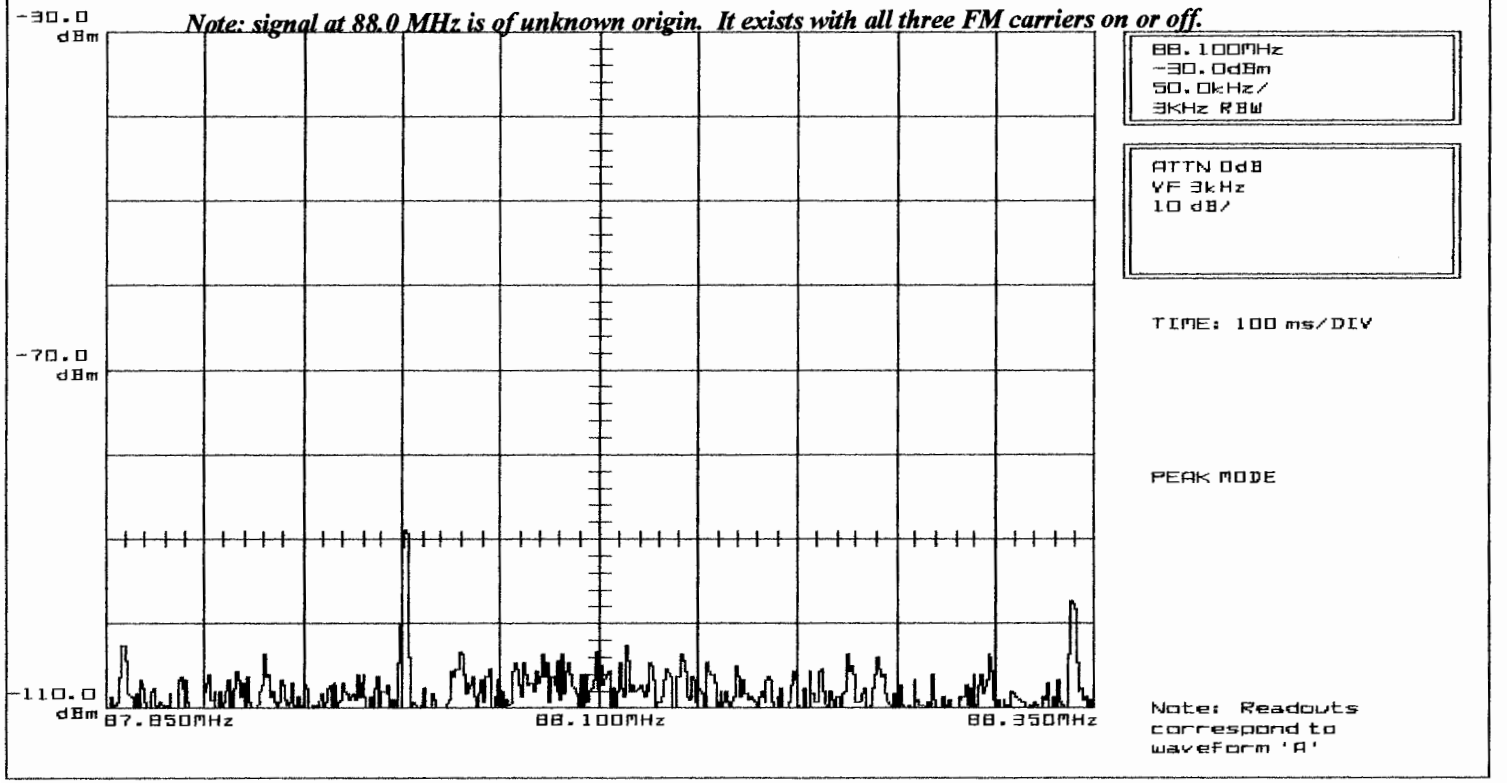
SWEEP #2 Sweep of 87.850 MHZ-88.350 MHz with all three FM carriers off

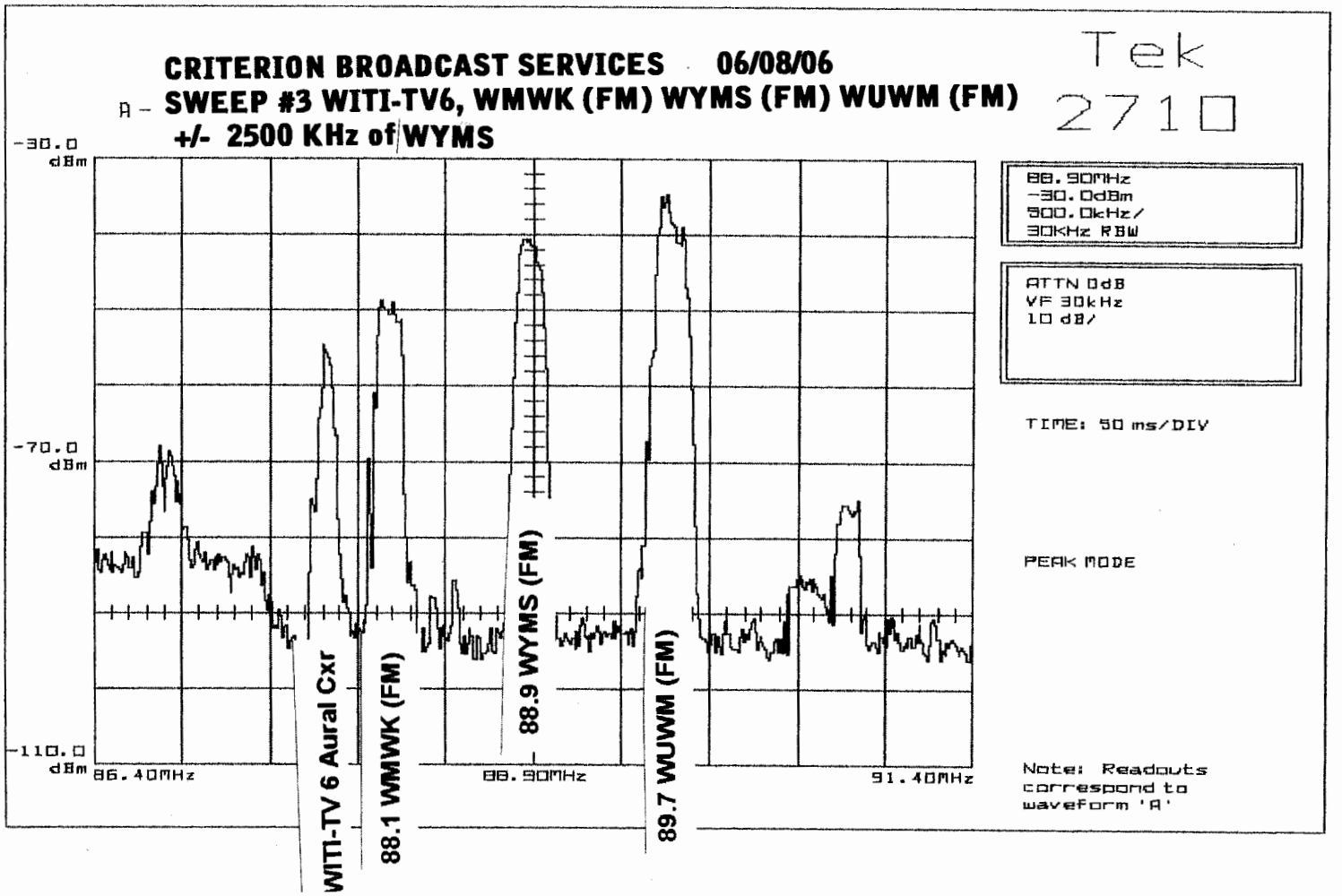
Tek

271

A –

Note: signal at 88.0 MHz is of unknown origin. It exists with all three FM carriers on or off.




CRITERION BROADCAST SERVICES 06/08/06
A - SWEEP #3 WITI-TV6, WMWK (FM) WYMS (FM) WUWM (FM)
+/- 2500 KHz of WYMS
Tek
2710
-30.0 dBm
-70.0 dBm
-110.0 dBm
86.40MHz
88.90MHz
91.40MHz
WITI-TV 6 Aural Cxr
88.1 WMWK (FM)
88.9 WYMS (FM)
89.7 WUWM (FM)
88.90MHz
-30.0dBm
500.0kHz/
30KHz RBW
ATTN 0dB
VF 30kHz
10 dB/
TIME: 50 ms/DIV
PEAK MODE
Note: Readouts correspond to waveform 'A'