

NEWMAN -KEES RF MEASUREMENTS
AND ENGINEERING LLC

8611 SLATE ROAD
EVANSVILLE, INDIANA 47720
1-812-963-3294

NRSC 2 EMISSIONS PROOF
AND
HARMONIC PROOF
FOR

STATION WNBS-AM

LOCATION Murray, KY

FREQUENCY 1340 KHZ

DATE & TIME 8-6-2020 12:18 PM

MEASURING SITE 36-38-1.6 88-18-44.9

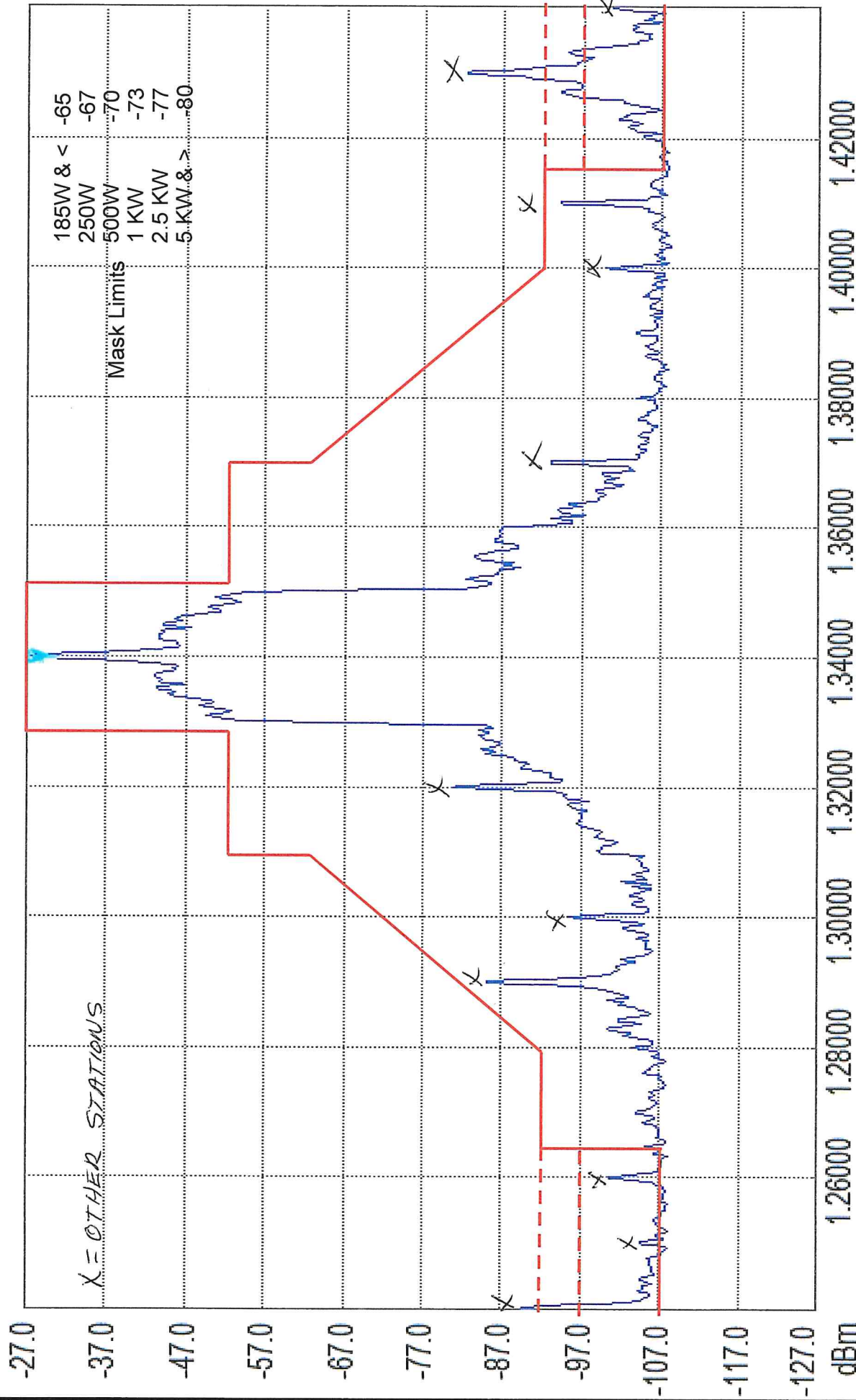
MEASURED BY: FRANK HERTEL
P1-18-48087/PG -18-9094

SUMMARY Within Specs - F. Hertel

Spectrum Analyzer Data

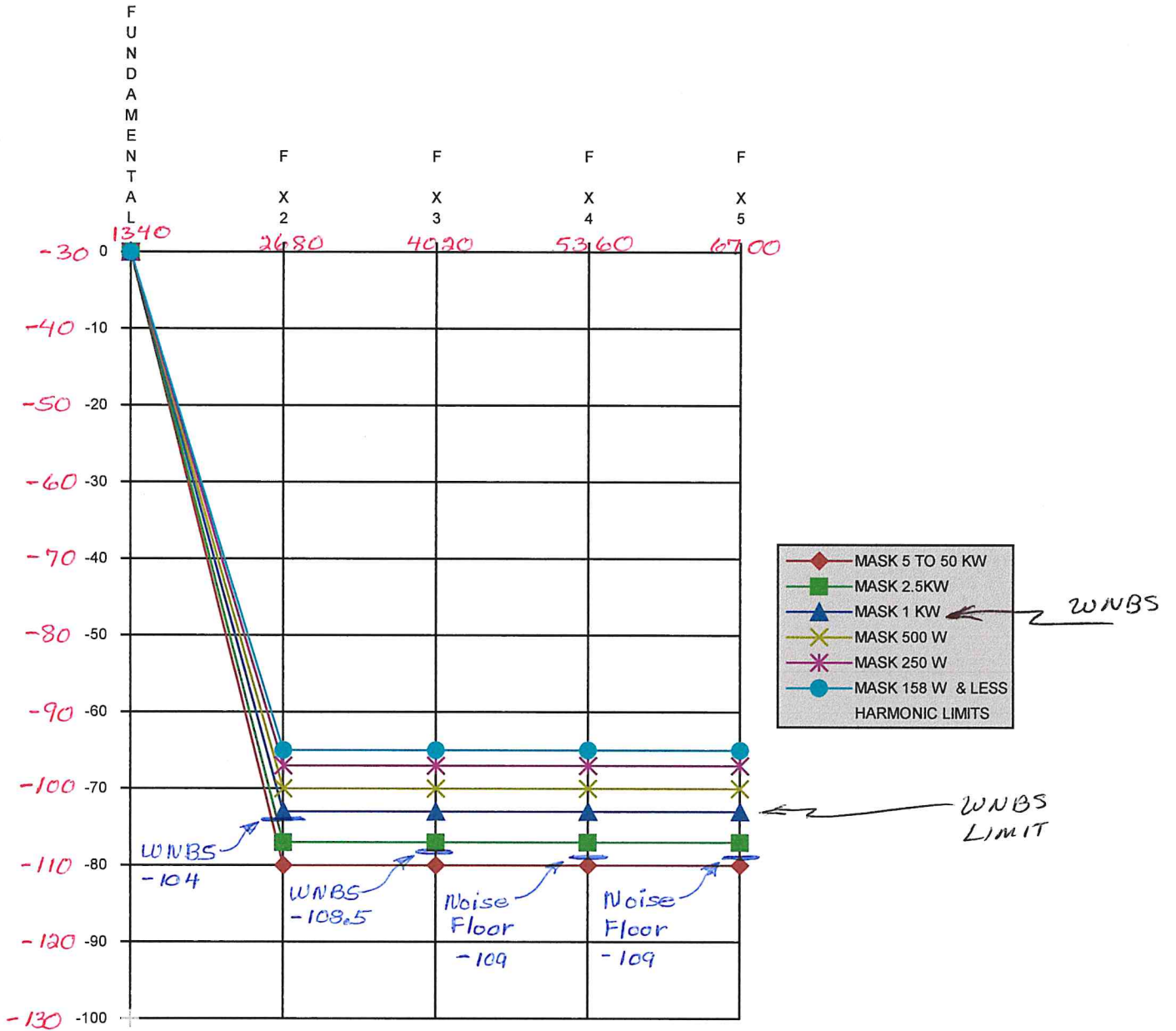
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Spectrum Analyzer



HARMONIC MASK

WNBS
Ref:



NEWMAN-KEES RF MEASUREMENTS ENGINEERING & INSTALLS LLC

RADIO STATION DATE LOCATION

WNBS-AM 8-6-2020 Murray, KY

MEASURED BY

Within Specs - Fe Herd

GUIDELINES AND METHOD USED

1. ALL MEASUREMENTS WERE MADE AT A DISTANCE SO AS TO PROVIDE THE RECEIVING/MEASURING DEVICE WITH A RESERVE SIGNAL READING CAPABILITY OF AT LEAST 100 DB BELOW THE UNMODULATED FUNDAMENTAL FREQUENCY OF CONCERN. DEPENDING UPON THE POWER LEVEL OF THE FACILITY TO BE MEASURED, THIS DISTANCE WILL VARY ACCORDINGLY.
2. ALL MEASUREMENTS ARE REFERENCED TO THE FUNDAMENTAL FREQUENCY--UNMODULATED CARRIER.
3. THE MEASURING LOCATION WAS PICKED SO AS TO MINIMIZE RE-RADIATION OF SIGNALS FROM POWER LINES ETC; WHICH COULD INDUCE ERRORS IN HARMONIC READINGS.
4. THE GAIN OF THE MEASURING ANTENNA IS FACTORED INTO THE FINAL HARMONIC READINGS. THE ANTENNA IS OF A FIXED SUB WAVE LENGTH THAT EXHIBITS 9 DB OF SIGNAL GAIN @F X2 --- 13.5 DB @F X3 --- 15.75 DB @F X4 --- 18 DB @ F X5 (HARMONICS)---REFERENCED TO THE FUNDAMENTAL FREQUENCY SIGNAL LEVEL MEASURED.
5. FCC GUIDELINES--SECTION 73.44 WERE USED TO ESTABLISH THE ASSOCIATED MASKS FOR NRSC 2B (NON-IBOC) AND HARMONIC MEASUREMENTS.
6. THE NRSC BANDWIDTH MEASUREMENTS WERE MADE WITH A LOOP ANTENNA FEEDING AN ANRITSU MS2721A SPECTRUM ANALYZER. HARMONIC MEASUREMENTS WERE MADE USING A VERTICAL WHIP ANTENNA WITH THE FINAL MEASUREMENTS CORRECTED AS PER "4" ABOVE. THE MEASURING SYSTEM IS ACCURATE WITHIN 3 DB OF THE LEVELS STATED IN THIS REPORT.

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