

Hancock HD Circulator Losses and HD TPO

Station	Suggested Input Pwr	dBW	Circulator Loss	Line Loss	Total dBW	Corrected TPO
WNUA	99 Watts	19.956	0.5	1.28	21.736	149.14 Watts
WVAZ	69 Watts	18.388	0.3	1.28	19.968	99.26 Watts

Andrew LDF5-50A Attenuation

F (MHz)	dB/100'
88	0.340
100	0.364
108	0.378

(Log of __ Watts) x 10 = dBW
 Antilog of (dBW / 10) = Watts

Individual Station Analog and Digital Total Power Output

Station	Freq	ERP (kW)	Analog TPO (kW)	Digital TPO (kW)
WBEZ	91.5	5.7	7.496	0.1
WNUA	95.5	5.7	7.523	0.099
WLUP	97.9	4	5.741	0.069
WUSN	99.5	5.7	8.413	0.095
WNND	100.3	5.7	8.203	0.098
WKQX	101.1	5.7	7.315	0.099
WVAZ	102.7	4	5.101	0.069
WOJO	105.1	5.7	7.127	0.098

The power levels listed as Digital TOP are not Transmitter power. They are the power required at the input to the combiner. They were calculated by ERI, without circulator or transmission line losses. This is only true for the digital.

The actual HD tx TPOs are in the neighborhood of 127, 132, 138 watts, etc.

Hancock IBOC Circulator Input Power WLUP and WKQX Line Loss

WVAZ circulator loss: 0.3 dB

WNUA circulator loss: 0.5 dB

WNUA TPO 127 watts; gives 99 watts at input of circulator;

ERP = 75 watts

WVAZ TPO 132 watts; gives 69 watts at input of circulator;

ERP = 51 watts

Other stations AT THE INPUT of circulator:

WBEZ 100 Watts

WLUP 69 Watts

WUSN 95 Watts

WNND 98 Watts

WKQX 99 Watts

WOJO 98 Watts

The line loss for WVAZ and WNUA, from the transmitter output to circulator input = 1.28 dB.

For WKQX and WLUP the line loss = 1.456 dB (400').