



Exhibit 10: Measurements
Demonstrating Conformance to
97.307 and 97.317

**External Radio Frequency
Power Amplifier OM4000HF**

Model OM4000HF

Array Solutions
2611 North Beltline Rd
Suite 109
Sunnyvale, Texas 75182
USA
Tel: 214 954 7140
fax: 214 954 7142
E-mail: info@arraysolutions.com

Measurements Demonstrating Conformance to 97.307 and 97.317

97.317(a)(1)(2)&(3) & 97.317(b). Spurious Emissions per 97.307(d) and Gain versus Frequency.

Results reflect amplifier as shipped with 26 to 28MHz Bands disabled.

Amplifier under test operated at frequency f1 with CW (A1A) excitation. Spectrum analyzer with a 20dB input attenuator was used to observe all frequencies, from f1 through at least 10f1 for harmonic and spurious emissions.

Power Gain per 97.317				Spurious emissions per 97.307d			
Frequency f1, MHz	Input Power, W	Output Power, W	Amplifier Gain, dB	2f1, dBc	3f1, dBc	4f1, dBc	5-10f1, dBc worst case
1,850	53	1500	14,52	51,2	77,3	80,5	83,7
3,650	55	1500	14,36	52,4	68,7	74,4	82,5
7,050	56	1500	14,28	54,5	78,5	82,6	84,1
10,100	56	1500	14,28	55,9	72,8	79,4	82,7
14,150	55	1500	13,19	57,1	74,2	81,5	85,1
18,100	51	1500	14,69	58,3	69,7	81,2	83,7
21,150	48	1500	14,95	60,3	75,2	81,2	83,2
Amplifier was not capable of operation on any frequency between 24 and 35MHz as measured at the points below per 97-317 –(b) (1) (2).							
24,000	50	48,7	-0,11				
26,000	50	48,6	-0,12				
27,120	50	48,6	-0,12				
28,000	50	48,5	-0,13				
35,000	50	48,4	-0,14				
After modification to activate 24 – 28MHz bands							
24,900*	61	1500	13,91	54,9	64,8	77,2	81,5
28,500*	55	1500	14,36	55,8	67,9	78,6	84,3

*Not usable as shipped, data applicable only after enabling of 24 and 28MHz bands. Model OM4000 HF uses mechanical lock-out to prevent the user from operating in the 26 - 28 MHz bands as prohibited by 97.317(b) (2).

97.307(a)(b). Intermodulation & Linearity

Exciter operating in SSB mode with two equal-tone audio applied to the microphone input. Amplifier under test driven to 1500W PEP output at the center of the band with 55W PEP input power.

Inter- modulation in dB relative to 1500W per 97.307					
Order:	D3	D5	D7	D9	D11 and higher
Freq. MHz	dB	dB	dB	dB	dB
1,850	35,7	47,8	55,2	59,9	57,8
3,650	34,8	39,4	53,8	57,4	60,1
7,050	33,4	43,8	47,9	63,7	62,6
10,100	33,2	37,2	53,4	56,3	59,0
14,150	34,8	37,6	53,2	56,9	60,5
18,100	33,0	41,8	53,3	56,4	58,9
21,150	34,3	39,4	51,0	63,8	64,1
24,900 *	31,9	43,1	47,1	61,7	61,0
28,500 *	31,2	43,2	58,4	62,7	66,7

* usable after authorized owner modification

97.317(a)(1). When the amplifier is in the “standby” or “off” positions, but still connected to the exciter, no measurable spectrum change from the normal output of the exciter is detectable with the spectrum analyzer (noise floor approximately – 115dBc) when amplifier is driven with 0 to 100 W mean RF power.

97.317(b). The amplifier possesses none of the prohibited characteristics listed in this section.

97.317(a)(2). The amplifier gain does not exceed 15 dB for any level of input signal.

Additional data: Information and data supplied by tube manufacturer concerning FU-728F tetrode is available by request from the manufacturer.