

Power Amplifier Final Test

ELECTRICAL SPECIFICATIONS @ 208VAC 3-phase (4-wire), 25°C ambient, 50Ω System

Parameter	Specifications						Frequency (MHz)										P/F	
	Symbol	Min	Typ	Max	Unit	Notes	240	260	280	300	320	340	360	380	400	420		450
Operating Frequency Range	BW	240		450	MHz	Plot 1 (pg4)	x	x	x	x	x	x	x	x	x	x	x	P
Output Power CW @ 2000W (into 2:1 VSWR)	P _{SAT}	63			dBm	Record	63	63	63	63	63	63	63	63	63	63	63	P
Output Power @ 1dB Compression CCDF Method, 0.01% Probability.	P _{1dB}	62			dBm	Record	63.2	63.3	64.3	64.1	64.2	64.5	64.4	64.4	64.8	64.8	65.1	P
							54.4	54.5	55.5	55.3	55.4	55.7	55.6	55.6	56	56	56.3	
Power Reporting Accuracy	P _{FWD}			±1.0	dB	Record (see pg3)	x	x	x	x	x	x	x	x	x	x	x	P
Sample Port @ 63 dBm	P _{sample}	-5		14	dBm	Record	12.6	12.6	12.6	12.6	12.5	12.5	12.5	12.7	12.4	12.3	12.5	P
Input Power for rated P _{OUT} = 2000W (CW-MGC MODE minimum VVA atten)	P _{IN}	-10	-5	0	dBm	Record	-7.2	-6.9	-6.7	-7.9	-9.7	-7.7	-5.1	-4.5	-5	-7.8	-5.1	P
Small Signal Gain Flatness (P _{IN} = -30dBm)	ΔG		±2.5	±3.5	dB	Plot 1 (pg4)	x	x	x	x	x	x	x	x	x	x	x	P
Leveled ALC Flatness - 2000W	ΔALC			±0.7	dB	Plot 2 (pg4)	x	x	x	x	x	x	x	x	x	x	x	P
Gain Adjustment Range	VVA	20			dB	Plot 3 (pg4)	x	x	x	x	x	x	x	x	x	x	x	P
Gain @ Shutdown Condition, P _{IN} = 0dBm	G _{SD}			-35	dB	Plot 4												
Input Return Loss	S11			-10	dB	Plot 4 (pg4)	x	x	x	x	x	x	x	x	x	x	x	P
Inter-modulation (3rd Order) 2-Tones @ 57dBm/Tone	IMD _{3rd} Δ=1MHz			-24	dBc	Record	-35	-35	-41	-50	-48	-43	-38	-41	-41	-38	-35	P
Harmonics @ P _{out} = 1600W	2 nd			-20	dBc	Record	-57	-50	-43	-48	-45	-41	-40	-38	-40	-40	-42	P
	3 rd		-20	-18	dBc		-19	-20	-22	-29	-27	-27	-37	-35	-35	-39	-42	P
Spurious Signals	Spur		-70	-60	dBc	Record	<-70	x	x	x	x	<-70	x	x	x	x	<-70	P
AM Modulation 85% depth FC = 345MHz @ 500W average (~2000W peak)	3kHz			-20	dBc	Record	-32										P	
Pulse performance Fc=225MHz, P _{OUT} = 900W(peak) Pulse Period: 100uSec, 50% Duty Cycle	T _{RISE 90%}			150	nSec	DVT Only	x	x	x	x	x	x	x	x	x	x	x	P
	T _{FALL 10%}			150			x	x	x	x	x	x	x	x	x	x	x	x
Operating Voltage (Three phase 50/60Hz)	V _{AC}		208		Volt	Verify	√										P	
Power Consumption @ Standby W/no RF	I _{SD}			800	VA	Record	598										P	
Current Consumption @ Oline w/no RF	I _{SB}			1500	VA	Record	1180										P	
Power Consumption @ P _{OUT} = 2000W	P _D			9KW	VA	Record	7254	x	x	x	x	7589	x	x	x	x	8265	P
NTE Test, Limiter = 63.4dBm	P _{OOD}			63.8	dBm	Record P _{OUT}	63.5	x	x	x	x	63.8	x	x	x	x	63.7	P
Input Overdrive –Shut down	P _{IOD}			12	dBm	Verify	√										P	
Reflected Power (Approx. 3.1:1 VSWR trip point; system mute)	VSWR			>3:1	VSWR	Verify	√										P	
Thermal Overload –Shut down	T _{SD}			60	°C	DVT Only	√	√	√	√	√	√	√	√	√	√	√	P

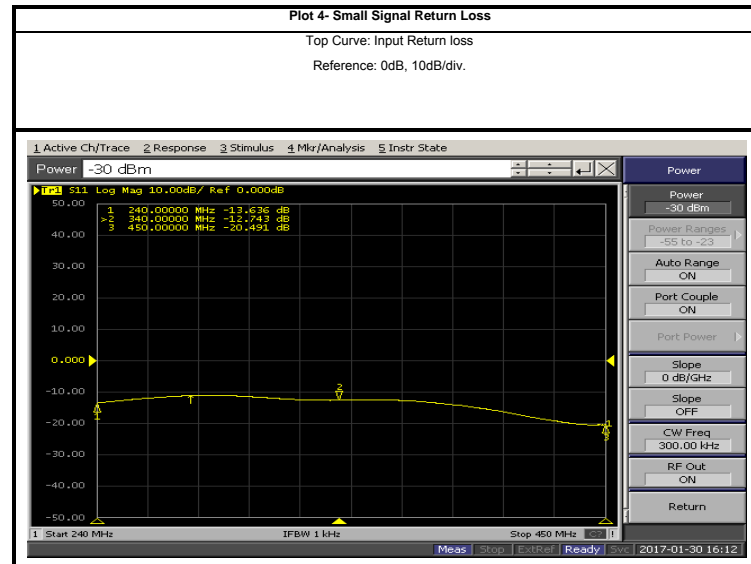
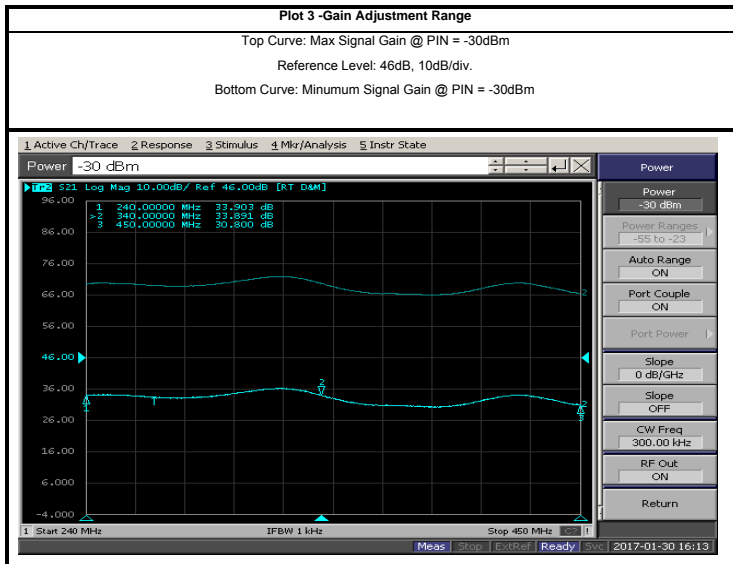
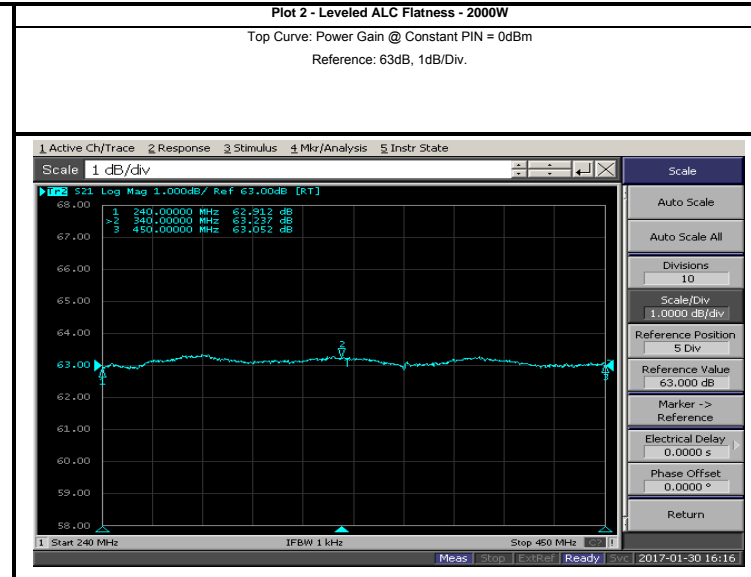
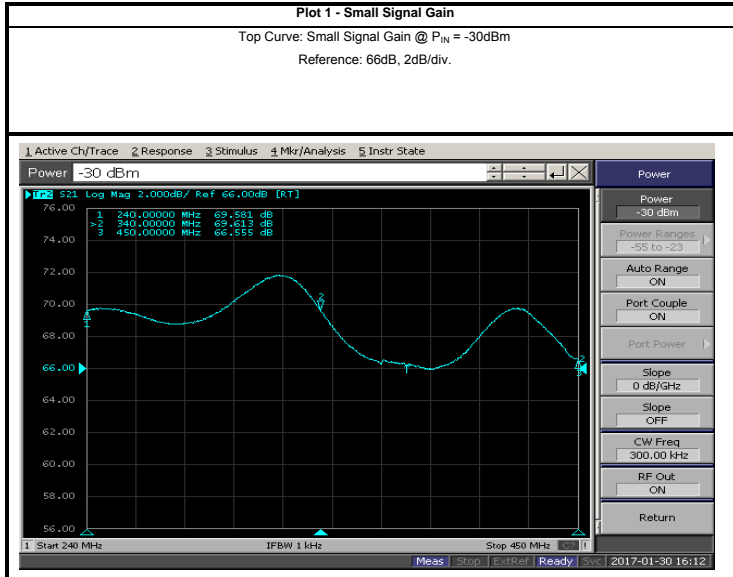
Power Reporting Accuracy

Forward Power, 50 Ohm Load (ALC MODE)							
Frequency (MHz)	Measuremnt Method	PIN =0dBm	PIN =0dBm	PIN =0dBm	PIN =0dBm	Limits	P/F
240	External Test Equipment	62.7	59.7	56.7	53.8	±1 dB	P
	Ethernet Reporting	63	59.8	57	54.2		
345	External Test Equipment	62.9	59.8	56.8	53.8	±1dB	P
	Ethernet Reporting	63	60.1	57.1	54		
450	External Test Equipment	63	59.7	56.6	53.8	±1 dB	P
	Ethernet Reporting	63	60	57	54		

Power Reporting Accuracy

Reverse Power, 3:1 (ALC MODE)						
Frequency (MHz)	Measuremnt Method	Gain set @ 63 dB, PIN =-10dBm	Gain set @ 63 dB, PIN =-8dBm	Gain set @ 63 dB, PIN =-7dBm	Gain set @ 63 dB, PIN =-6dBm	
240	External Test Equipment FWD PWR	46.57	48.2	49	50.4	
	Ethernet Reporting FWD PWR	53.4	54.9	55.9	57.3	
	Ethernet Reporting REV PWR	-	-	-	-	
345	External Test Equipment FWD PWR	46.2	48.4	49.4	50.7	
	Ethernet Reporting FWD PWR	52.9	55.1	56.3	57.5	
	Ethernet Reporting REV PWR	-	-	-	-	
450	External Test Equipment FWD PWR	46.2	48.1	47.7	50.7	
	Ethernet Reporting FWD PWR	53.4	55.2	54.8	57.8	
	Ethernet Reporting REV PWR	-	-	-	-	

Performance Plots



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