LINEARIZED DOHERTY POWER AMPLIFIER	LPA-AH1-05DO-2620M-2690M-28-00
P1430	

FEATURES

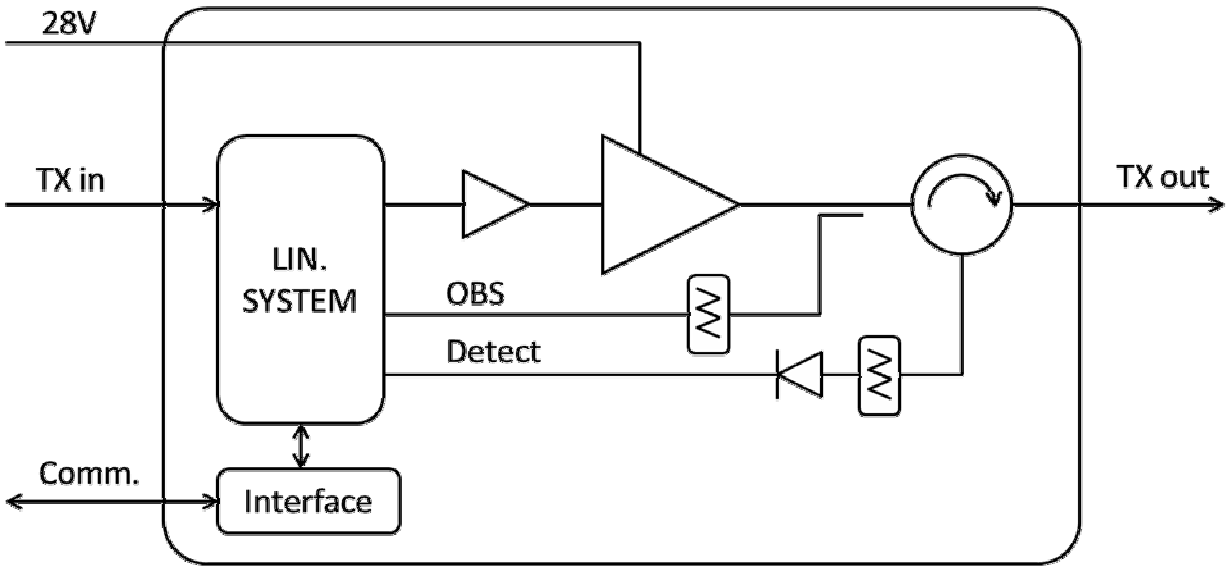
- 2620-2690MHz; 50W PEAK POWER
- 40MHz MAXIMUM INSTANTANEOUS BANDWIDTH
- 28V / 0.38A IDLE
- 28V/0.9A @ 5Wave
- UART MONITORING & CONTROL
- MECHANICAL HOUSING FOR POWER DISSIPATION
- RoHS COMPLIANT

PACKAGE

APPLICATIONS

- RRH AMPLIFIERS
- DAS AMPLIFIERS
- MIMO AMPLIFIERS

BLOCK DIAGRAM



Specifications and information are subject to change without notice

Electrical characteristics: 50 ohms; +28V; -25°C to +85°C (1)

Ref	parameter	conditions	note	min	typ	max	units
1	Bandwidth		2	2620		2690	MHz
2	Instantaneous bandwidth			5		40	MHz
3	Gain small signal	2655MHz			40		dB
4	Gain variation vs frequency	2620-2690MHz	2			1.0	dBpp
5	Gain variation vs temperature	2655MHz, 0°C à +85°C			1		dB
6	Input return loss	50 ohms				-18	dB
7	Output return loss	50 ohms				-18	dB
8	Peak power	Output Signal PAR = 8dB @ 0.01% Probability on CCDF	3		50		Wp
9	Peak Power variation vs frequency	Output Signal PAR = 8dB @ 0.01% Probability on CCDF	3				
10	ACLR 1 for single carrier LTE	5W Average Output Power Signal Bandwidth 5, 10, 20MHz	3		-55	-50	dBc
	ACLR 2 for single carrier LTE					-55	dBc
11	Max power 1 carrier LTE	Spectrum Emission Mask	3				dBm
12	Reverse intermodulation 2 tones CW						
13	Harmonic suppression	1 carrier @ 5Wav	2		TBD		dBc
14	Noise figure				14	16	dB
15	Voltage supply			27	28	29	V
16	Consumption idle	+28V			0.38	0.45	A
17	Consumption at 5W	+28V ; LTE carrier			0.9		A
18	ALC output level	+37dBm CW					V
19	ALC output rise time	90% rise time 0-40dBm step					ms
20	Linearization system convergence time	5W Average Output Power Signal Bandwidth 5, 10, 20MHz	3, 4			20	s

1. unless otherwise specified
2. -10°C to +85°C (temperature sensor indication)
3. LTE E-TM1.1 input Signal PAR = 9dB @ 0.01% Probability on CCDF
4. Time for ACLR1<-45dBc and ACLR2<-50dBc

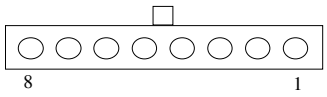
Maximum ratings & Protections

Ref	characteristic	description	remarks
1	Output mismatch	∞:1 at 10W output	Infinite duration, no shutdown
2	Overvoltage	Shut down if supply>32V	Transients<40V
3	Overcurrent	Shut down if current> 1.5A	Output power > +40dBm CW
4	Temperature	Shut down if temp>95°C	Auto recovery (at 85°C)

Monitoring & control

Ref	characteristic	description	remarks
1	µC	PIC18F25K40	
2	Serial bus	µC UART	Synchronous, 8 bits, 9600bds, 5V CMOS
3	Output power limitation	Analog output (Pdetect) on DC connector	TBD V at 5W CW output
4	Temperature	Through serial bus	-40°C to +100°C
5	Output power	Through serial bus	+30dBm to +40dBm +/-1 dBm +20dBm to +40dBm +/-2 dBm

Communication DC Connector Molex NanoFit 105313-1108

Pin description			PINOUT
Pin 8 : pin 14 µC (UART Tx)	Pin 4 : Alarme	Mate with 105307-1208	
Pin 7 : pin 15 µC (UART Rx)	Pin 3 : Gnd		
Pin 6 : Gnd	Pin 2 : NC		
Pin 5 : Valc (Pdetect)	Pin 1 : Mute		

Power Supply DC Connector Molex NanoFit 105313-1102

Pin description			PINOUT
Pin 2 : Supply +28V		Mate with 105307-1202	
Pin 1 : Gnd			

MTBF

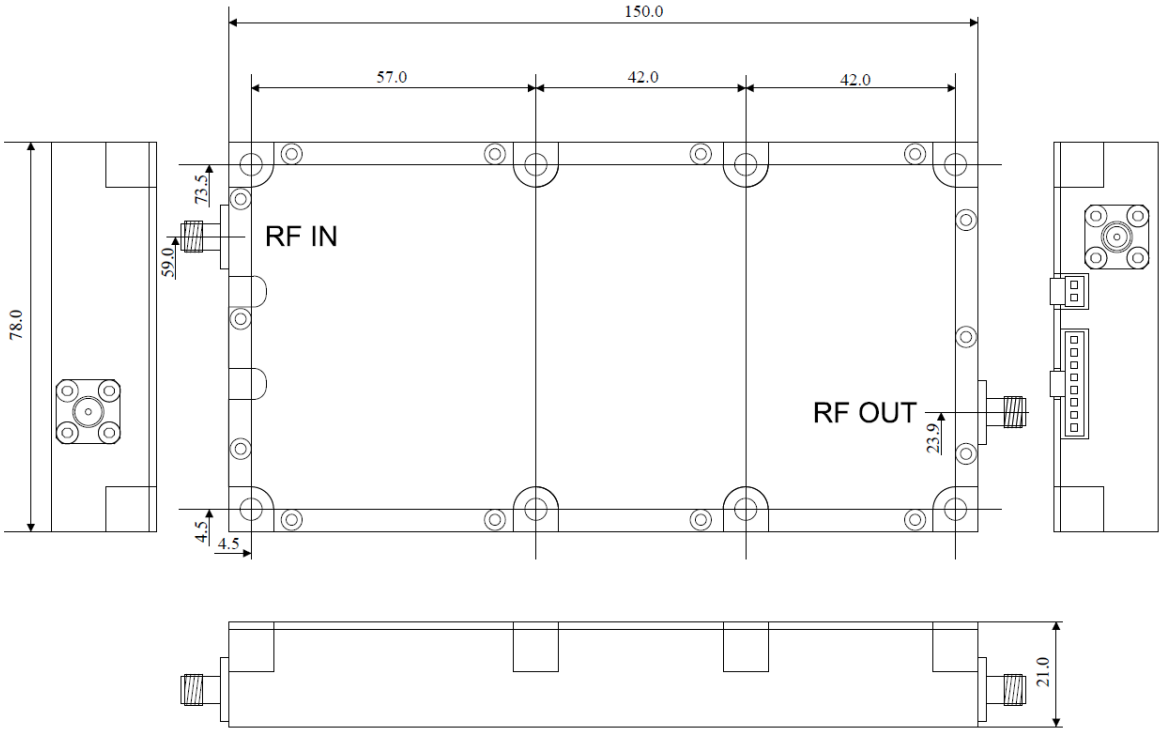
Temperature (sensor)	MTBF	First year failure rate
65°C (10)	>300 000 hours	TBD%

10. Although specified up to 85°C, this calculation assumes an average temperature of 65°C

Mechanical characteristics

Ref	characteristic	description	remarks
1	Housing dimensions	150mm x 78mm x 21mm	
2	Housing cover finish	Electroless nickel	
3	Mounting	8 M4 screws	
4	Input/output RF connectors	SMA	
5	DC supply connector	Molex 105313-1102	Male type
6	DC controls connector	Molex 105313-1108	Male type
7	Weight	460 grams	

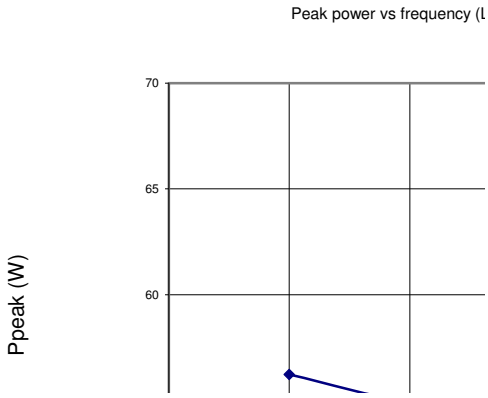
Package outline:



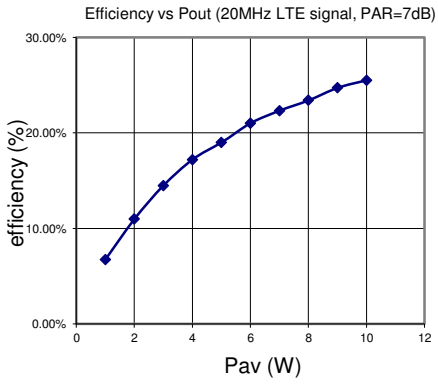
TYPICAL PERFORMANCE

Gain vs frequency

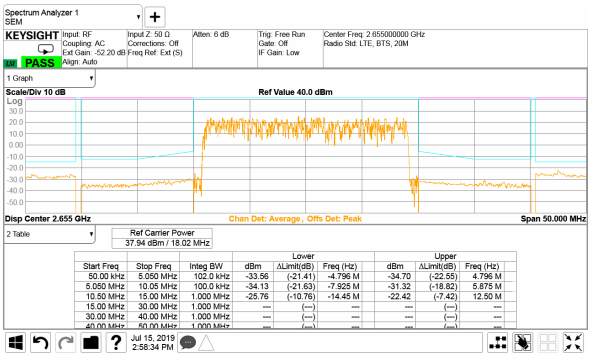
Output return loss vs frequency



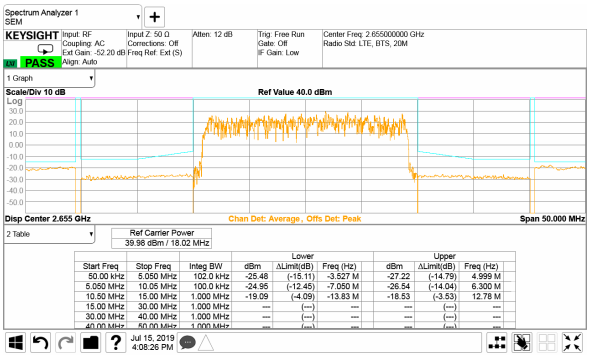
Peak power vs frequency



Efficiency vs power level



1c LTE20MHz, 2655MHz, PAR=9dB, 5W, 28V/0.93A



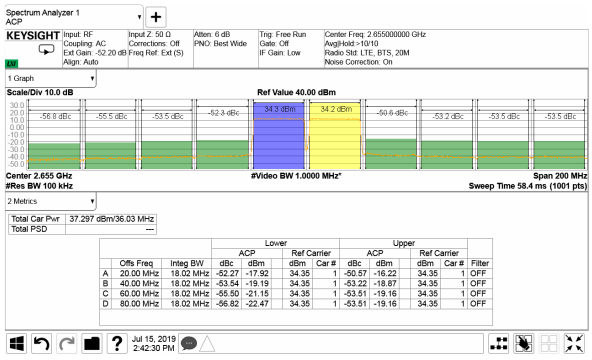
1c LTE20MHz, 2655MHz, PAR=7dB, 10W, 28V/1.4A

Specifications and information are subject to change without notice

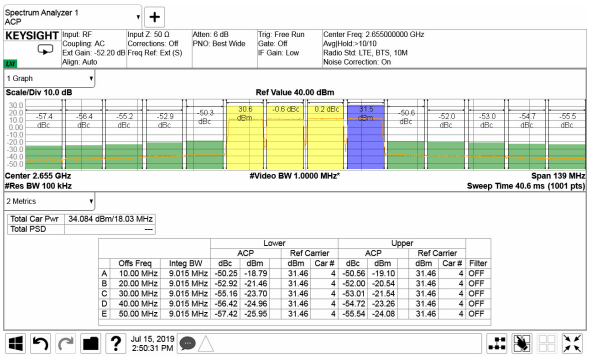
TYPICAL PERFORMANCE (continued)

2c LTE20MHz, 2655MHz, PAR=9dB, 1W, 28V/0.52A

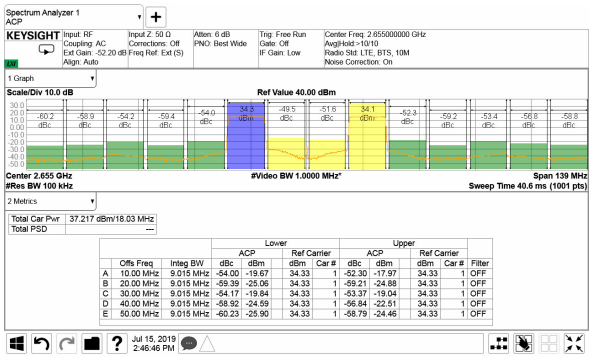
2c LTE20MHz, 2655MHz, 2W, PAR=9dB, 28V/0.62A



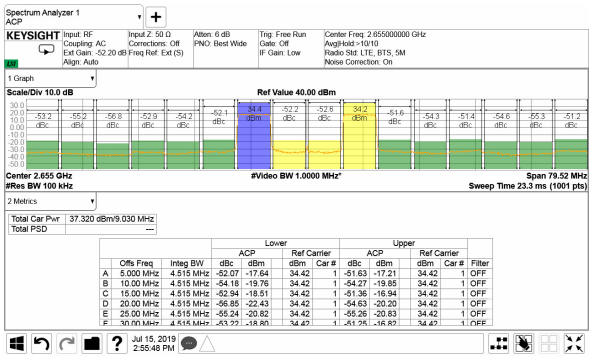
2c LTE20MHz, 2655MHz, PAR=9dB, 5W, 28V/0.92A



4c LTE10MHz, 2655MHz, PAR=9dB, 5W, 28V/0.92A



2c LTE10MHz, spaced 30MHz, PAR=9dB, 5W, 28V/0.92A



2c LTE5MHz, spaced15MHz, PAR=9dB, 5W, 28V/0.92A