



DATASHEET

Feuille de Spécifications

P/N: AAMCS-AMP-0500M-2700M-50dB-50dBm-0-C
Designation : Amplificateur 500-2700MHz 100W 48Vdc

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Electrical features <i>Caractéristiques électriques</i>		All parameters specified @ +25°C & +48Vdc	
Electrical parameters <i>Paramètres électriques</i>	Measuring conditions <i>Conditions de mesure</i>	AA-MCS specifications <i>Spécifications AA-MCS</i>	Units <i>Unités</i>
Operating frequency range <i>fréquence</i>		0.5-2.7	GHz
Gain <i>Gain</i>	@ -10dBm input	51 min. 54 typ. 60 max.	dB
Gain Flatness <i>Platitude gain</i>	@ -10dBm input	4.3 max.	dB
Gain Variation with supply voltage <i>Variation de gain avec l'alimentation</i>	(47.5V to 48.5V)	0.2 max.	dB
Saturated power (Psat) <i>Puissance de saturation</i>	CW @ Psat	48 min. 51 typ. @ Pin = -2dBm, see Note 1	dBm
Input drive level without damage. <i>Pin max</i>		+7 max. See Note 2	dBm
Efficiency at Psat <i>Efficacité à Psat</i>		28 min. 35 typ.	%
Input return loss <i>Adaptation d'entrée</i>		-10 max.	dB
In band harmonics at 50W output power : <i>Harmoniques à 50W out</i>	1 – 2GHz at output 2 – 2.7GHz at output	-15 typ. -12 max. -15 typ. -9 max.	dBc
Out of band harmonics <i>Harmonics hors band</i>	To 10Ghz	-20 typ. -15 max.	dBc
Level of Second Order Intermodulation signals produced by two independent +42dBm signals with defined requeencies: <i>Intermodulation H2</i>	1 GHz & 1.3GHz carriers generating IM2 at 300MHz 2.117GHz & 2.55GHz carriers generating IM2 at 433MHz	-13 max. -9.5 max.	dBc

Ed.	Par / By	Le	Observation
0	R.P	08/12/2016	Création (ET16024)
1	R.P	28/04/2017	Maj alim et design
2	R.P	29/01/2019	Update for precision



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Non harmonic related spurious <i>Spurious</i>	dc – 10GHz	-60 max.	dBc
Output noise when Shutdown (no RF input) <i>Densité bruit en Shutdown</i>	@ 10-200Mhz @ 0.2-10Ghz	-135 max. -150 max.	dBm/Hz
Noise Figure <i>Facteur de bruit</i>		15 max.	dB
RF Enable rise time - from trailing edge of enable signal to 90% of RF level. <i>Temps de montée Off-On 10-90%</i>		10 max.	µs
RF Enable fall time from leading edge of signal to -50dB below level before this. <i>Temps de descente On-Off à -50dBc</i>		15 max.	µs
RF Rise time <i>Temps de montée</i>	to 90% of CW RF	100 max.	ns
Change in power level, measured at the output from the Amplifier, in the second of two in-band, non-simultaneous <i>Variation niveau de puissance en pulse</i>	13W pulsed carries Between 10ms to 100ns	1.0	dB
Tolerance to load mismatch <ul style="list-style-type: none"> - Load VSWR mismatch - VSWR threshold for power reduction <i>Seuil de désadaptation</i> - Power reduction due to mismatch <i>reduction puissance due à la désadaptation</i> 		6:1 6dB max. See note 3	

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Supply voltage <i>Tension d'alimentation</i>		46 min. 48 typ. 50 max.	V
Current consumption <i>Consommation courant</i>	@ Pout = 48dBm	5 max.	A
Shutdown Current <i>Courant en Shutdown</i>		1.0 max.	A
Thermal overload	+90°C	Shutdown temp.	

Environmental Temperature <i>Température environnementale</i>	
Base plate temperature	-20 min. / +80 max. °c
Cold start temperature	-40 °c min.
Storage temperature	-40 min. / +85 max. °c
Humidity, non-condensing	95%

Note 1 :

The nominal use of the amplifier is for a value of Pin = -2dBm to 0dBm
 For this Pin level the output power is 48dBm min 51dBm typ.

Recommended SWITCH ON Procedure

- Verify the Amplifier Output Connection (50Ohms power load or Antenna)
- Verify RF Generator is OFF (RF OFF) or that Pout Generator is < -10dBm
- Adjust Frequency generator
- Apply a shunt down (not obligatory)
- Switch ON DC_Supply (+48Vdc)
- Switch RF ON (generator)
- Increase input power up to a maximum of -2 dBm typ, 0dBm max

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Note 2 :

Once polarized, the input power can be further increased up to + 7dBm.
Direct operation at Pin = + 7dbm (0-7dBm) may damage the amplifier.

Note 3 :

The tolerance to load mismatch is made by ALC on the return power.
ALC threshold is 42dBm typ +/-2 db, with 6dB max. power reduction @ 45dBm (VSWR 6 :1)
When the ALC system is enable, it allows to a indefinitely tolerance to load mismatch (open or short at all phase & angle (infinite). However, the ALC system does not allow an instantaneous charge failure.

INTERFACE DETAILS / Interface

RF Input	50Ω SMA Connector
RF Output	50Ω SMA Connector
DC Power and Monitoring	DB 9pts male typ.
	<u>Pinning Connector DB-9pts:</u> 1 – Mismatch indicator output If power is reduced when a mismatch is detected. TTL levels to be high>2v. (no mismatch, TTL to be low <0.8v) 2 – Current monitor output Analogue voltage, within 0-5v range 3 – Temp sense output Analogue voltage, maximum 0-5v output range (for -40°C to +90°C temperature range) with a slope of 10mv/°c 4 – Spare : CAG_Vc 5 – Shutdown input TTL "low" (<0.8v) : enable amplifier TTL "high" (2.0 to 5v) : disable amplifier Open circuit : enable amplifier 6 – DC supply +48v 7 – DC supply +48v 8 – GND 9 – GND

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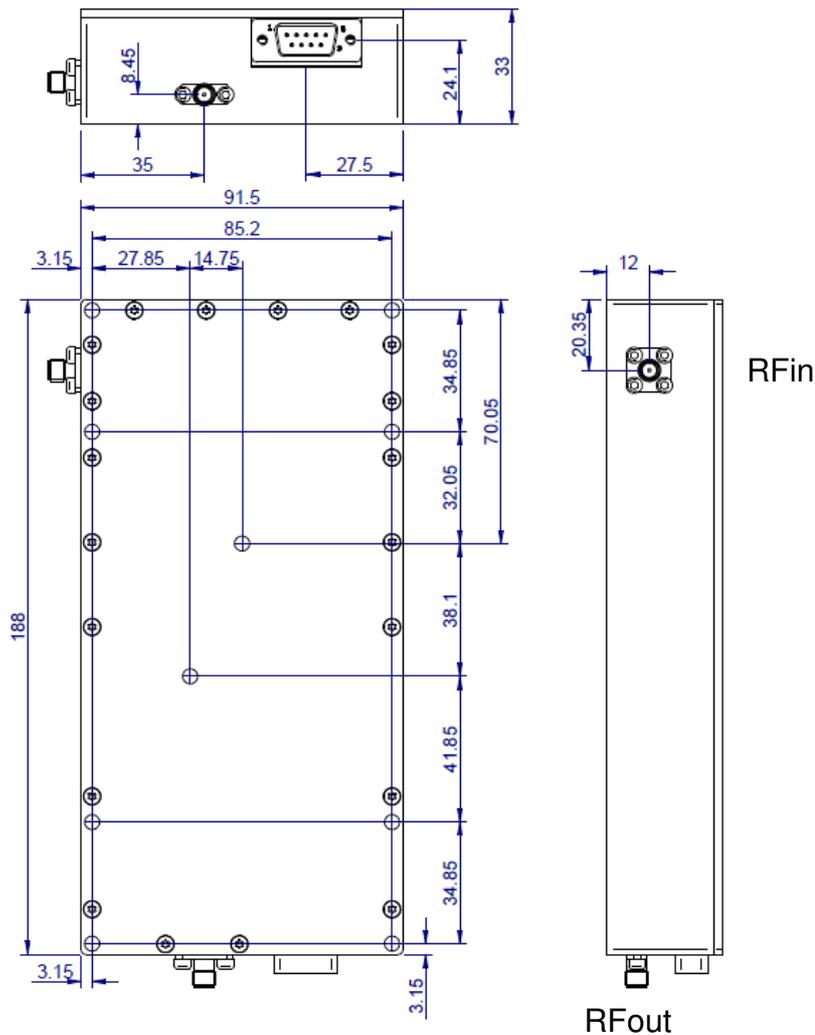


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Caractéristiques mécaniques / Mechanical features

Paramètres <i>Parameters</i>	Conditions de mesure <i>Measuring conditions</i>	Spécifications AA-MCS <i>AA-MCS specifications</i>	Unités <i>Units</i>
Longueur x largeur x Hauteur <i>Length x width x height</i>	L x W x H	188 x 91.5 x 33 (without connectors)	mm
Dissipation <i>Cooling</i>		Conduction cooled	-
Weight <i>Masse</i>		1.0 max.	kg



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