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50W DIGITAL TV UHF RF POWER AMPLIFIER

05/08/2008 V1.0

AC7000-A047UX1NA

Features

- Design For Digital TV
- LDMOS Power Amplifier
- Broadband (470 - 860MHz)
- Output DVB-T/H Power 50 Watts
- Ultra-linear Design
- RS232/RS485/USB Interface
- OMT Software
- Squelch Function
- Plug and Play

RF Performance

Operating Frequency Range	470-860MHz
Input/Output Impedance	50Ω
Input Signal Range	-10 to 0dBm
P1dB	typical ＞800W
P_{out} DVB-T	46dBm to 47dBm step 0.1dB
Shoulder(Without Precorrection)	＞32dB@50W
Output Power Stability	±0.2dB from 470MHz to 860MHz
Squelch Switch ON/OFF Threshold	-10dBm＜ON＜0dBm
Input Return Loss	＞18dB
Output Return Loss	＞22dB
Monitoring Signal Intensity	Pout(dBm)-45dB/±0.5dB

Electrical Requirements

Power Supply	100-240V AC 50/60Hz
Power Consumption	550W @ 50W RF Output

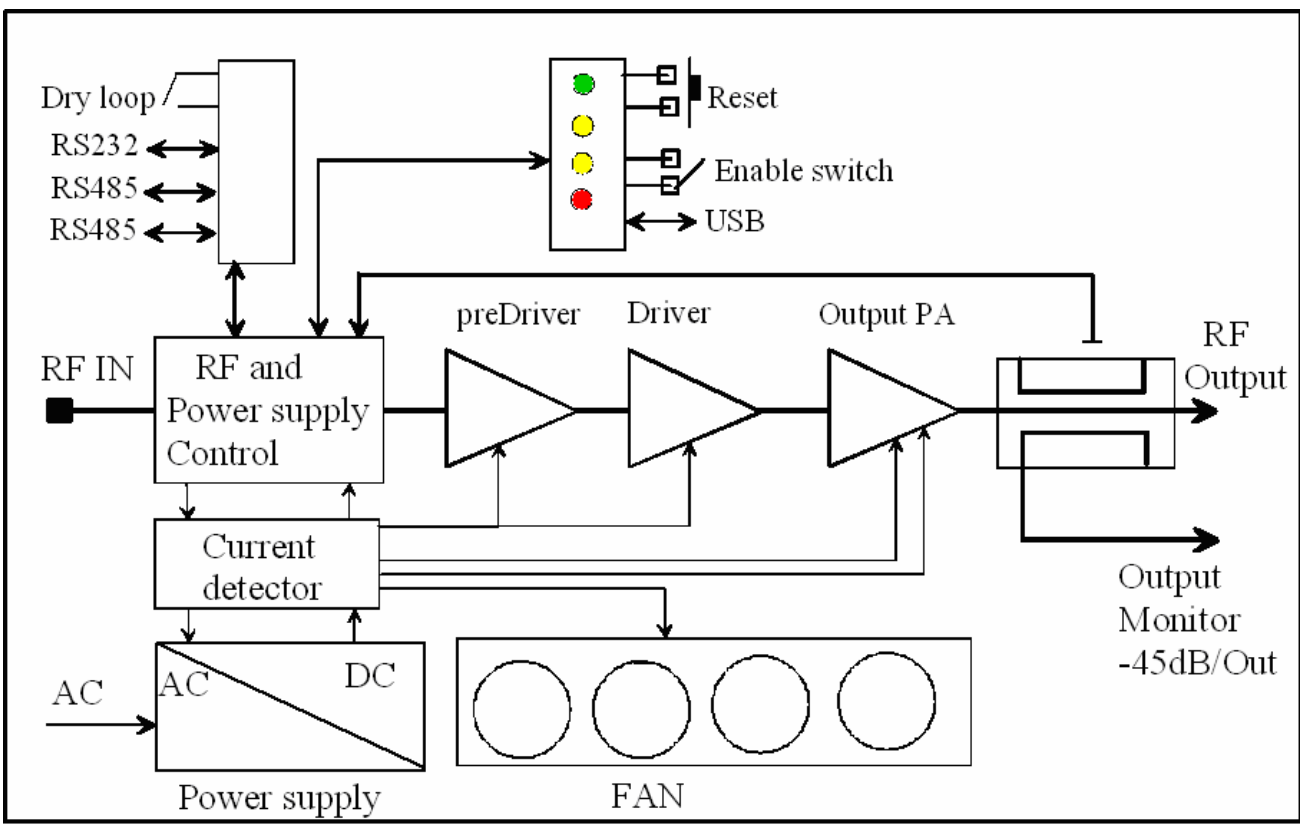
Environmental

Operating Temperature	0 to +45℃
Storage Temperature	-25 to 70℃
Humidity	Up to 90% (Non condensing)
Cooling	Fan Cooling

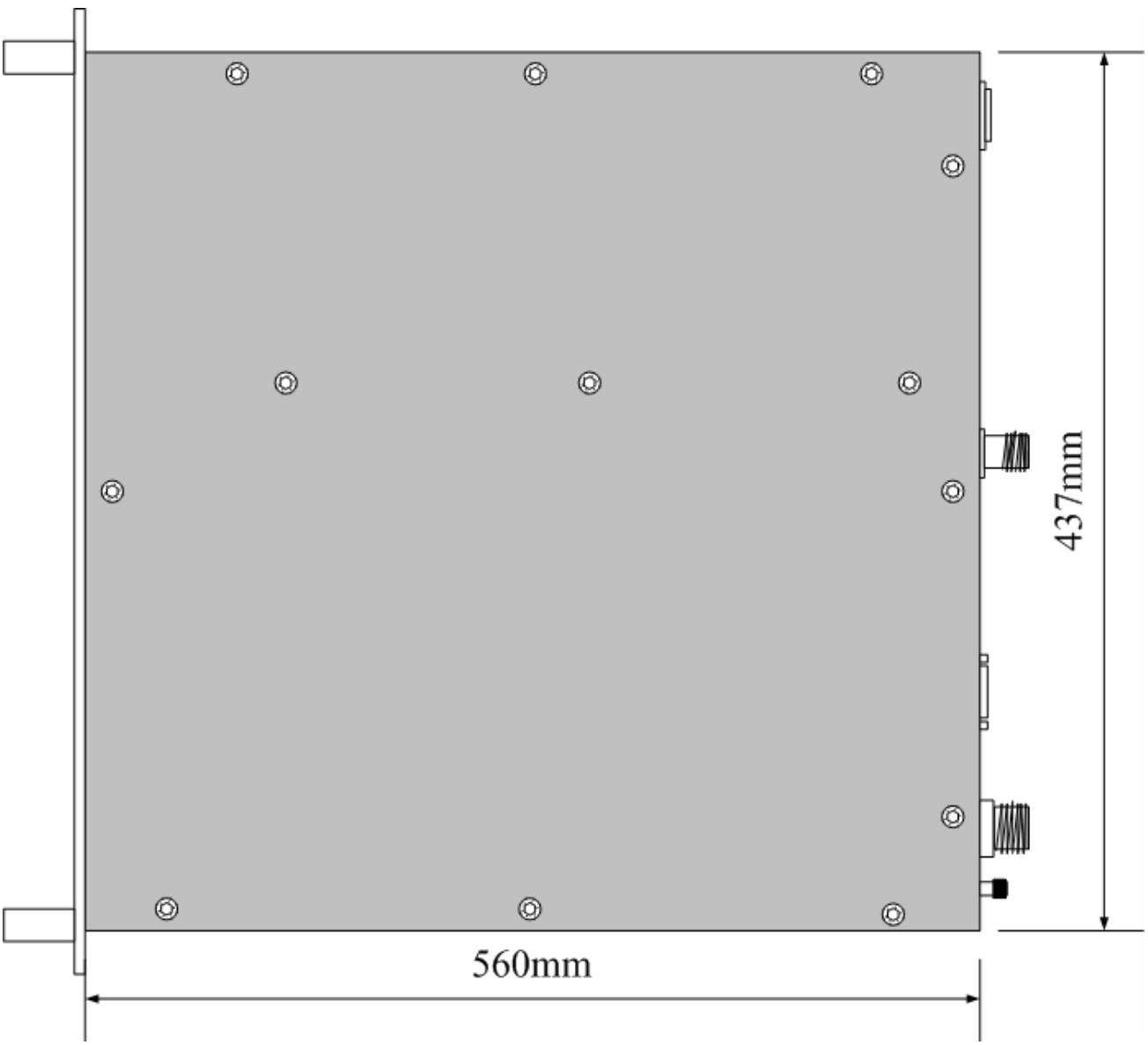
Mechanical data and Interfaces

Dimensions	19" 3HU std 560mm depth
Weight	22.5Kg
Main Power	Rear panel
RF Input	N connector rear panel
RF Output	7/16 connector rear panel
RF Monitor	SMA connector rear panel
RS232	DB9 connector rear panel
RS485	RJ45 (2 parallel) rear panel
USB	Front panel
Local Enable/Disable	Switch front panel Two-pole connector rear panel

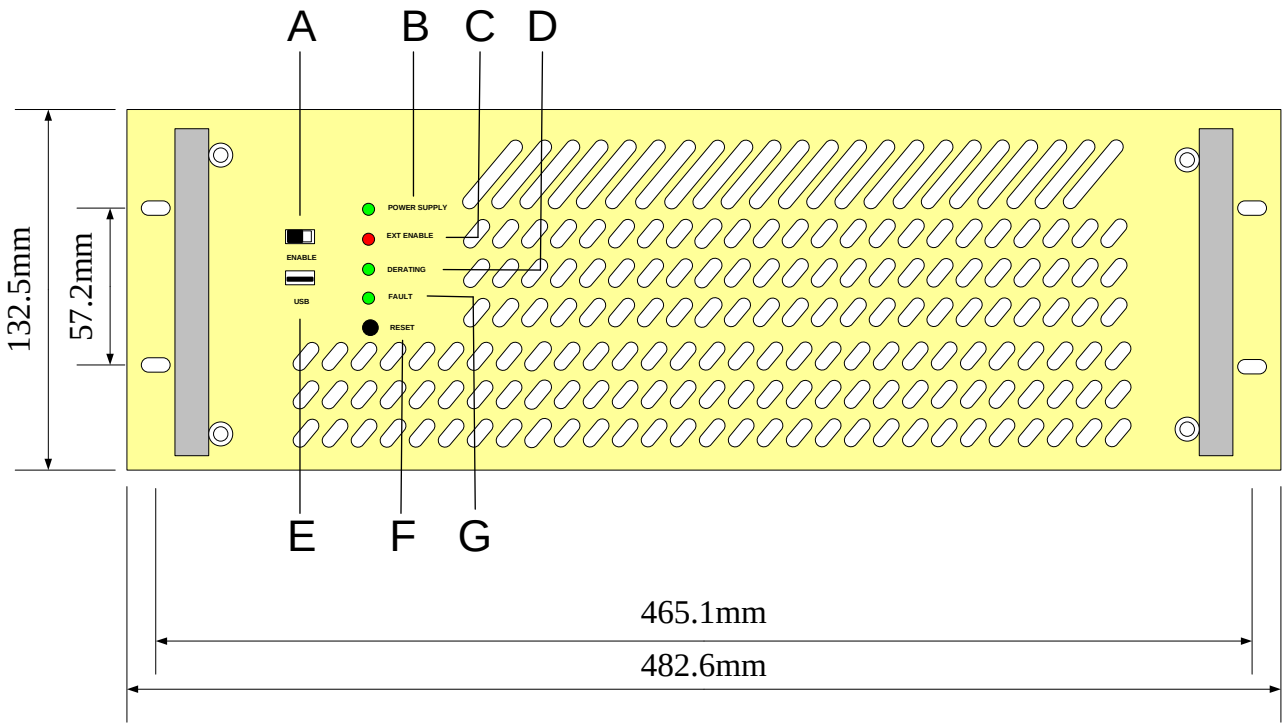
Block diagram



Top View

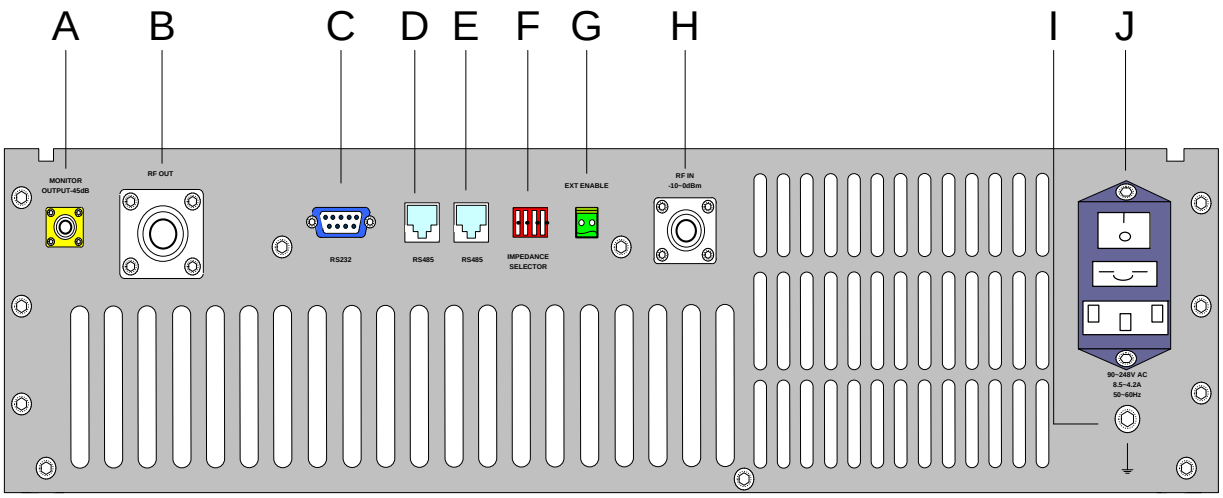


Front Panel

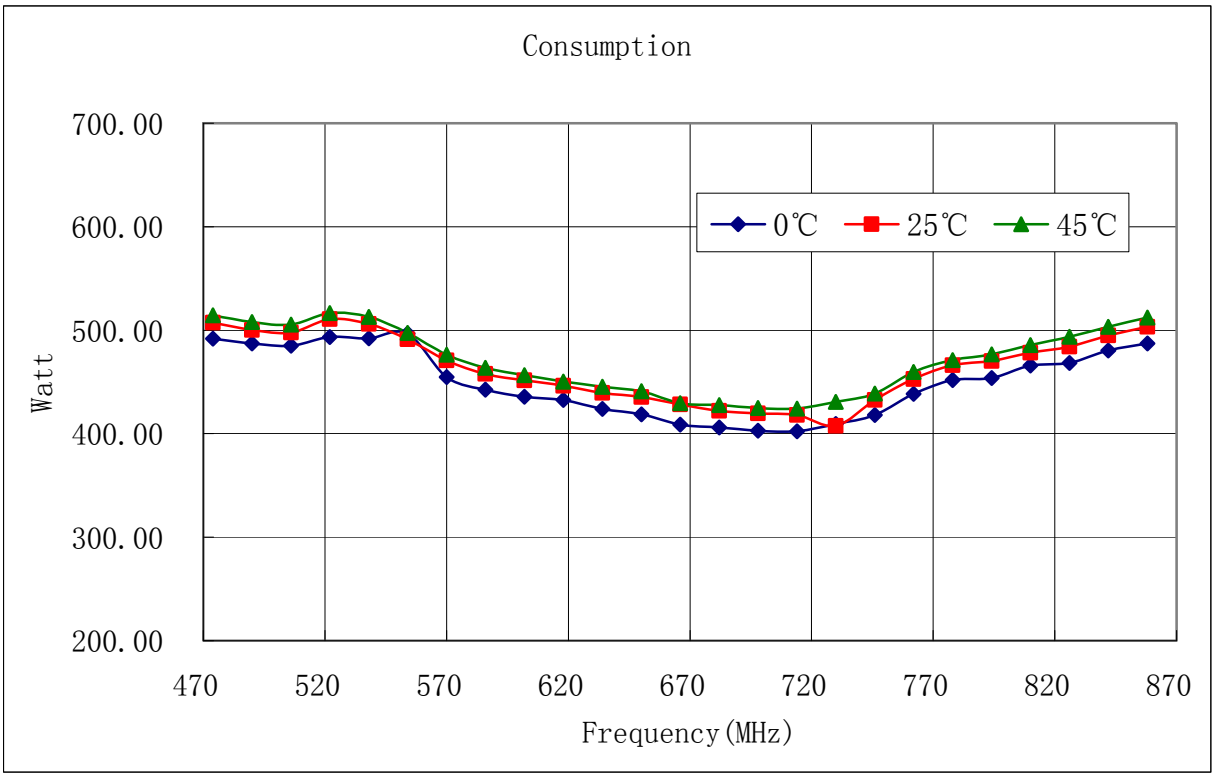


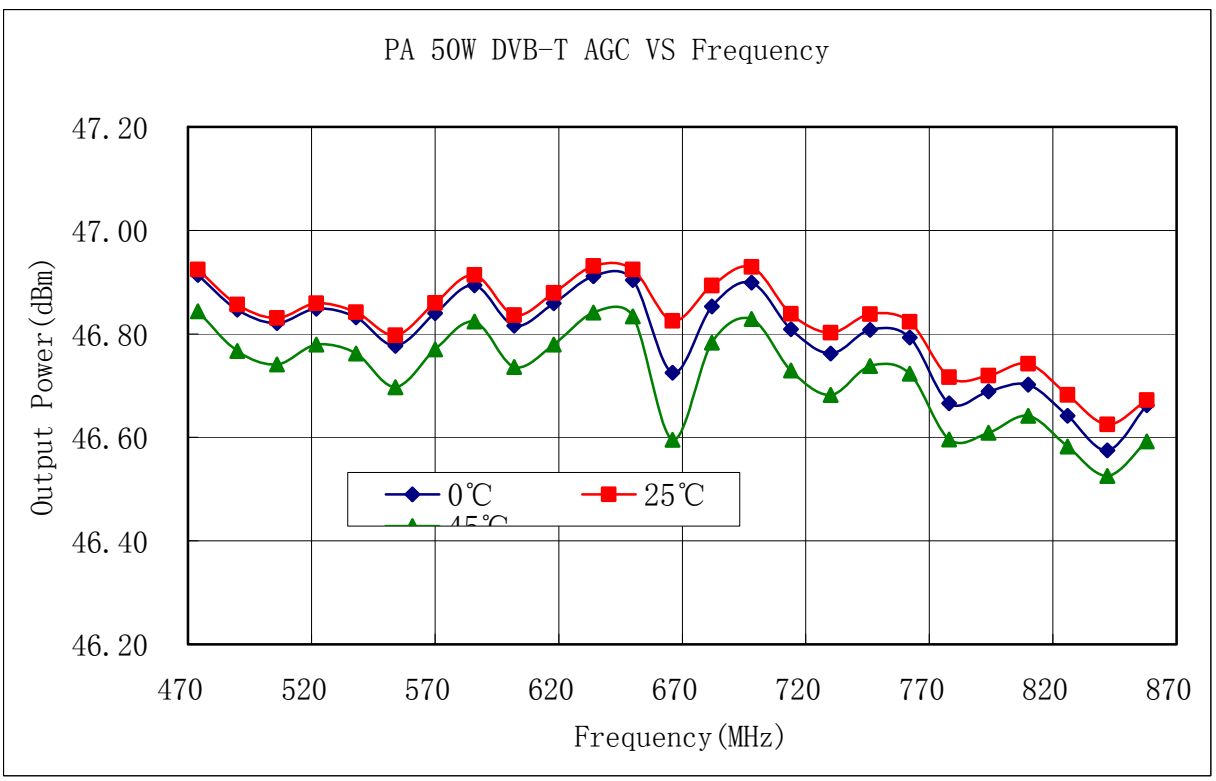
	Interface	Description
A	**Enable Switch**	Switch at the left side, it means Disable; Switch at the right side, it means Enable. The default status is Disable.
B	**LED Power Supply**	If LED is green, it means power supply is OK; If LED is off, there is power supply failure.
C	**LED Ext Enable**	If LED is on, it means Enable; If off, it means disable.
D	**LED derating**	Output power is too low, though PA still works
E	**USB**	Serial interface USB
F	**Reset**	To reset PA
G	**LED Fault**	Serious problems with PA

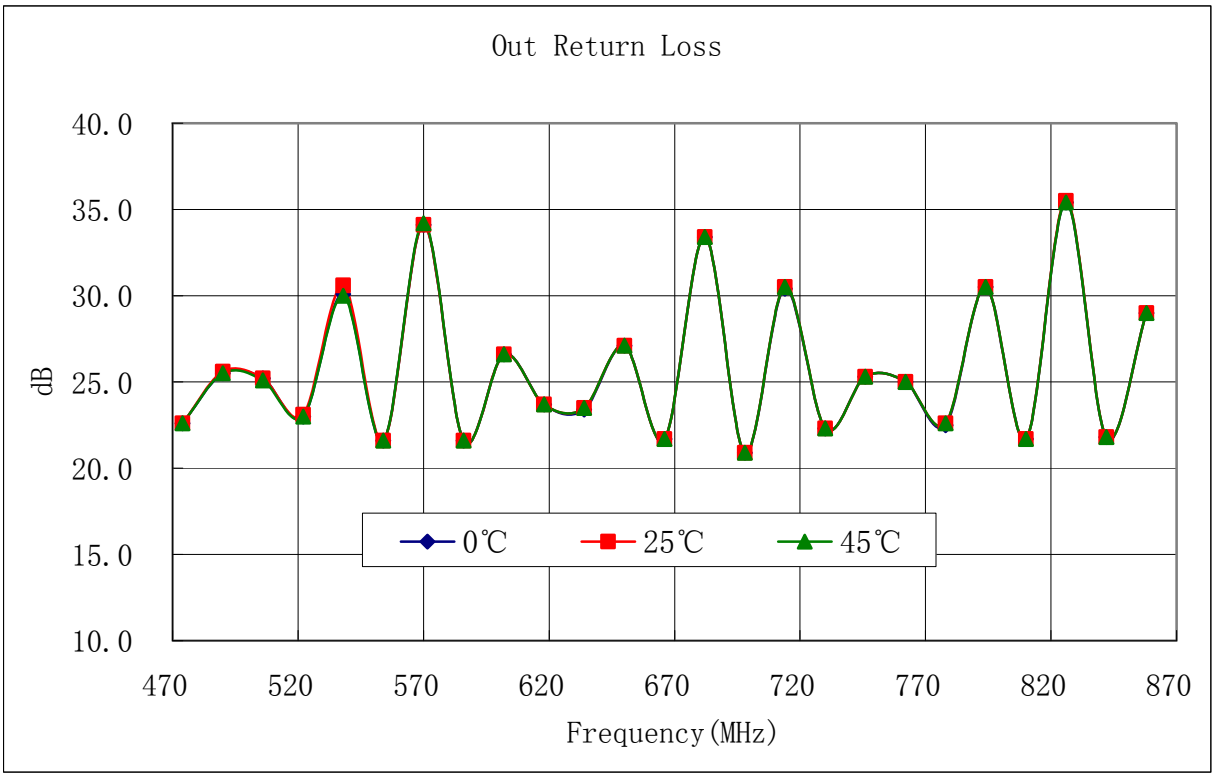
Rear Panel

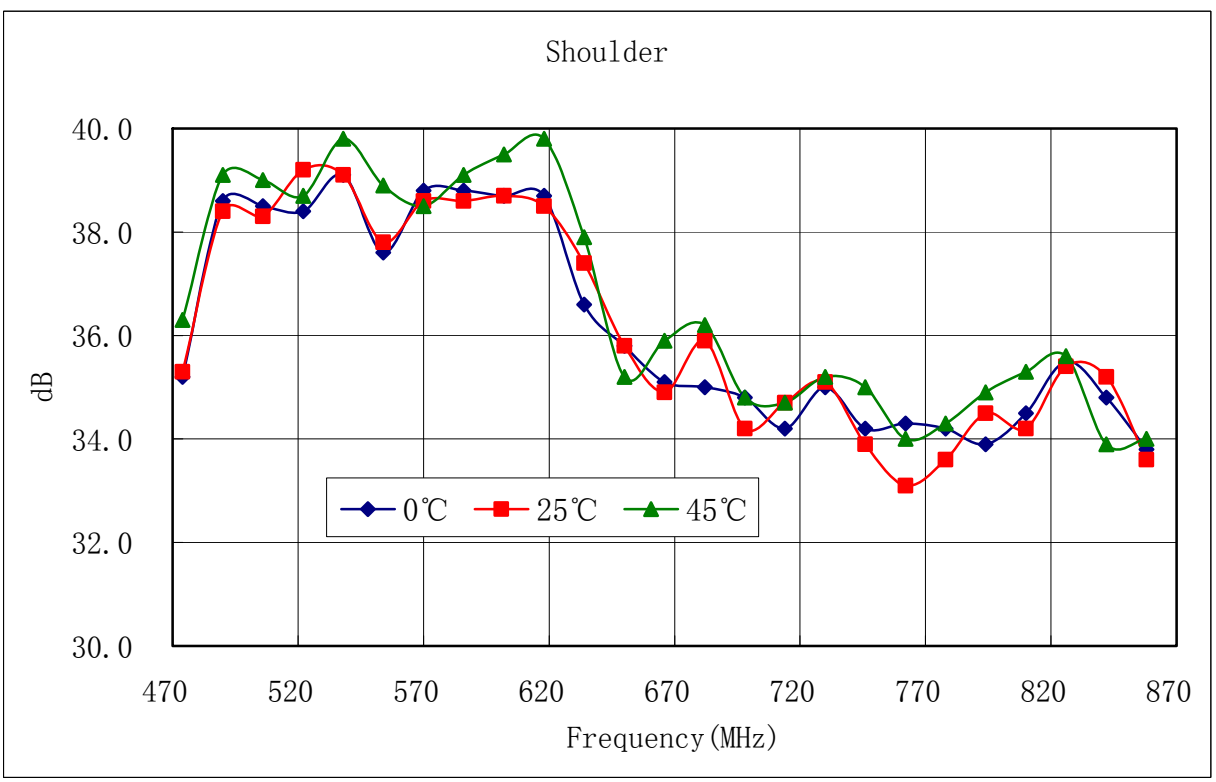


	Interface	Description		
A	**RF Monitor**	The calculation is as follows: P_{out} - 45dB = RF Monitor P_{out}		
B	**RF Out**	RF Output		
C	**RS232**	Serial interface RS232		
D	**RS485**	Serial interface RS485		
E	**RS485**	Serial interface RS485		
F	**Impedance selector**	This interface is used to select the proper impedance. There are altogether 4 switches each marked with a number. If the switch is put up, it means ON; if down, it means OFF. PA offers 3 options in impedance selection:		
		1	OFF OFF OFF OFF	Default
		2	ON OFF ON OFF	470 R
		3	OFF ON OFF ON	120 R
G	**EXT Enable**	If Enable Switch (in the front panel) is off: EXT Enable does not work; If Enable Switch is on: PA works with EXT Enable connected; PA automatically power off if EXT Enable is disconnected.		
H	**RF In**	RF input		
I	**Ground**	Ground connection		
J	**AC Input**	AC		


Consumption
700.00
600.00
500.00
400.00
300.00
200.00
Watt
0℃
25℃
45℃
470
520
570
620
670
720
770
820
870
Frequency(MHz)


PA 50W DVB-T AGC VS Frequency
47.20
47.00
46.80
46.60
46.40
46.20
Output Power(dBm)
0℃
25℃
470
520
570
620
670
720
770
820
870
Frequency(MHz)


Out Return Loss
40.0
35.0
30.0
25.0
20.0
15.0
10.0
dB
0℃
25℃
45℃
470
520
570
620
670
720
770
820
870
Frequency(MHz)


Shoulder
40.0
38.0
36.0
34.0
32.0
30.0
dB
0℃
25℃
45℃
470
520
570
620
670
720
770
820
870
Frequency(MHz)