



387XX SERIES SOLID STATE POWER AMPLIFIER

(75GHz~110GHz/60GHz~90GHz/50GHz~75GHz/40GHz~60GHz
26.5GHz~40GHz/18GHz~40GHz/18GHz~26.5GHz/6GHz~18GHz/2GHz
~18GHz/0.5GHz~6GHz/1GHz~2.5GHz/80MHz~1GHz/9kHz~250MHz)



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Product Overview

387XX series solid-state power amplifier can realize power amplification of input signals in the frequency range of 9kHz to 110GHz. It has functions such as adjustable gain, stable power, output power display and remote control, and has characteristics such as wide band, high gain and high power.

387XX series solid-state power amplifier consists of multiple amplifiers working in different frequency bands. For their models and corresponding operating frequencies, refer to the technical specifications. Among them, 2GHz ~ 18GHz solid-state power amplifiers and 18GHz-40GHz solid-state power amplifiers are the newly launched ultra-wideband high-performance complete machines with output power of 100W. This series of amplifiers adopt the technology of wideband high-power signal amplification and synthesis, which can be used in the development, manufacture and maintenance of radar, communications, electronic countermeasure and other weapons and equipment. As a general high-performance test instrument, it can be widely used in electromagnetic compatibility testing, nonlinear testing of high-power components and many other fields. It is an indispensable important instrument in the broadband high-power test system.

Main Characteristics

- Wide frequency range
- High gain power amplification
- High precision power display
- Adjustable gain
- Optional open loop / Internal amplitude stabilization
- Multiple alarm protection functions

Typical Applications

- EMC test
- High power component characteristic test
- Radar, 5G communications and electronic countermeasures
- Specific electromagnetic environment simulation test
- Highly sensitive equipment transmission and reception test
- Aerospace and defense

Function Introduction

The front panel design of 387XX series solid state power amplifier is simple and clear. It has the characteristics of friendly user interface and easy operation. It can realize power amplification of input signal in the frequency range of 9kHz ~ 110GHz. The 387XX series solid-state power amplifier includes two product series, 3871XX and 38701XX (some functions are different).

Output Power Display

The front panel of the 387XX series solid state power amplifier is equipped with LCD, which can display the output power of the amplifier in real time, and the output power can be displayed in dBm or W respectively.

RF Input

The RF input connector is used to import the RF input signal of the solid state power amplifier. The maximum input power should not exceed 0dBm generally.

RF Output

The RF output connector is used to export the RF output signal of the solid state power amplifier. Do not turn on the front panel working switch before connecting the RF output connector with a high-power load.

Gain Adjustment

The front panel of the 387XX series solid state power amplifier is equipped with a gain (power) tuning knob, which can adjust the gain or output power of the amplifier as required. Through the front panel setting wizard, the direction of rotation of the gain tuning knob can be flexibly selected (clockwise / counterclockwise).

Setting Wizard

The front panel of the 387XX series solid state power amplifier is equipped with a setting wizard button. The display frequency can be set to the current working frequency by operating the navigation keys to achieve the frequency response compensation function of the power display and make the display power more accurate.

Alarm Indication

The front panel of the 387XX series solid state power amplifier is equipped with mismatch alarm,

over-temperature alarm and air-cooling alarm indication, which can realize the alarm protection function for output port mismatch, excessive internal temperature of the amplifier and abnormal fan operation.

Working Switch

The working switch button is used to control the standby and working states of the solid state power amplifier. After the power switch on the rear panel is turned on, the working switch on the front panel is in the standby state by default, and is switched to the working state after pressing the button.

Internal Stable Amplitude / Open Loop Switching

The front panel of the 387XX series solid state power amplifier is equipped with a setting wizard button, which can be set by the navigation key to switch the amplifier from the open-loop state to the internal stable amplitude state.

Programmable Interface

The program control interface (option) of 387xx series is located on the rear panel of the instrument, which can be remotely controlled through GPIB or LAN interface.

Power Switch

The power switch is located on the rear panel of the instrument. The instrument is in standby working state after being turned on. The power supply required by the amplifier is 220V, 50Hz AC.

Technical Specifications

No.	Model	Frequency range (GHz)	Gain (dB Min.)	Power flatness (dB Max.)	P1dB (dBm Typ.)	Psat (dBm Typ.)	Harmonic suppression (dBc Typ.)	RF input connector type	RF output connector type
1	3871AD	9kHz~250MHz	54	±3	50	51	10	N (f)	N (f)
2	3871AE	9kHz~250MHz	56	±3	52	53	10	N (f)	N (f)
3	3871AH	80MHz~1GHz	54	±3	50	51	10	N (f)	N (f)
4	3871AK	80MHz~1GHz	56	±3	52	53	10	N (f)	N (f)
5	3871AA	1~2.5	53	±3	47	50	10	N (f)	N (f)
6	3871AP	1~2.5	55	±3	49	52	10	N (f)	N (f)
7	3871AB	1~6	48	±3	37	45	10	N (f)	N (f)
8	3871AQ	2~6	53	±3	42	50	10	N (f)	N (f)
9	3871AR	2~6	56	±3	45	53	10	N (f)	N (f)
10	3871AS	0.5~6	50	±3	40	47	10	N (f)	N (f)

11	3871AT	0.5~6	53	±3	43	50	10	N (f)	N (f)
12	3871AU	0.5~6	56	±3	45	53	10	N (f)	N (f)
13	3871DA	6~18	46	±3	41	43	10	N (f)	N (f)
14	3871DB	6~18	50	±3	40	47	10	N (f)	N (f)
15	3871DC	6~18	53	±3	42	50	10	N (f)	N (f)
16	3871DD	6~18	56	±3	43	53	10	N (f)	N (f)
17	3871DH	2~18	46	±3	36	43	10	N (f)	N (f)
18	3871DK	2~18	50	±3	40	47	10	N (f)	N (f)
19	3871DE	2~18	53	±3	43	50	10	N (f)	N (f)
20	3871EA	18~26.5	43	±3	38	40	10	3.5mm(m)	3.5mm(m)
21	3871EB	18~26.5	46	±3	40	43	10	3.5mm(m)	3.5mm(m)
22	3871EC	18~26.5	53	±3	42	50	10	3.5mm(m)	WR42
23	3871FA	26~32	43	±3	36	40	-	2.4mm(m)	2.4mm(m)
24	3871FB	32~40	43	±3	36	40	-	2.4mm(m)	2.4mm(m)
25	3871FC	24~30	46	±3	34	43	-	2.4mm(m)	2.4mm(m)
26	3871FN	33~37	45	±3	40	45	-	2.4mm(m)	WR28
27	3871FD	37~43	46	±3	34	43	-	2.4mm(m)	2.4mm(m)
28	3871FE	26~40	43	±3	33	40	-	2.4mm(m)	2.4mm(m)
29	3871FF	26~40	49	±3	36	46	-	2.4mm(m)	WR28
30	3871FG	26~40	53	±3	40	50	-	2.4mm(m)	WR28
31	3871FP	18~40	46	±3	36	43	-	2.4mm(m)	24JS18000
32	3871FQ	18~40	50	±3	40	47	-	2.4mm(m)	24JS18000
33	3871FR	18~40	53	±3	43	50	-	2.4mm(m)	24JS18000
34	3871FS	2~40	40	±3	27	37	-	2.4mm(m)	2.4mm(m)
35	3871HA	40~47	40	±3	35	37	-	2.4mm(m)	2.4mm(m)
36	3871LA	40~60	36	±3	27	33	-	1.85mm(m)	1.85mm(m)

SIZE:

- W×H×D=426mm×176mm×450mm (The corresponding serial number is 23-28, 34-36)
- W×H×D=426mm×176mm×500mm (The corresponding serial number is 5, 7-8, 10-11, 13-15, 17, 20, 29)
- W×H×D=426mm×222mm×550mm (The corresponding serial number is 1-4, 6, 9, 12, 16, 18-19, 21-22, 30-33)

Notes:

1. Do not turn on the power of the output connector before connecting the high-power load!!!
2. The input power of the input connector must not exceed the value indicated on the panel during operation.
3. In the condition of the load connected, turn on the amplifier working switch first, then connect the input

signal. After using, turn off the input RF signal first, and then turn off the amplifier working switch.

4. Please wait for the instrument to start up before using.

5. When the output port of the instrument has a high output power, it needs to ensure a good matching state. In the high-power output state, even the short-term mismatch of the output port may cause irrecoverable damage to the instrument.

6. In case of mismatch alarm, please cut off the RF input signal in time, and check whether the output port connector is connected to the high-power load, or whether the connected load is well connected, or the impedance is matched.

7. This instrument is a kind of electrostatic sensitive instrument. Please pay attention to electrostatic protection during storage, transportation and use.

Ordering information

- Main set: 38701X / 3871XX series solid state power amplifier

- Standard package:

No.	Designation	Remark
1	power cable	standard 3-core power cable
2	user manual	-
3	certificate of conformity	-

- options:

serial No.	Designation	Functions
3871AB -020	20W solid state power amplifier	Frequency Range: 0.5GHz~6GHz Output Power: 20W RF output connector: N(f)
3871AB -040	40W solid state power amplifier	Frequency Range: 0.5GHz~6GHz Output Power: 40W RF output connector: N(f)
3871AS -060	60W solid state power amplifier	Frequency Range: 0.5GHz~6GHz Output Power: 60W RF output connector: N(f)
3871AS -080	80W solid state power amplifier	Frequency Range: 0.5GHz~6GHz Output Power: 80W RF output connector: N(f)
3871AT -150	150W solid state power amplifier	Frequency Range: 0.5GHz~6GHz Output Power: 150W RF output connector: N(f)
3871AT -200	200W solid state power amplifier	Frequency Range: 0.8GHz~4.2GHz Output Power: 200W RF output connector: N(f)
3871AT -250	250W solid state power amplifier	Frequency Range: 0.8GHz~3.0GHz Output Power: 250W RF output connector: N(f)
3871AT -300	300W solid state power amplifier	Frequency Range: 2.1GHz~2.7GHz Output Power: 300W

		RF output connector: N(f)
3871AU -250	250W solid state power amplifier	Frequency Range: 0.5GHz~6.0GHz Output Power: 250W RF output connector: N(f)
3871AU -300	300W solid state power amplifier	Frequency Range: 0.5GHz~3.0GHz Output Power: 300W RF output connector: N(f)
3871AU -350	350W solid state power amplifier	Frequency Range: 0.5GHz~3.0GHz Output Power: 350W RF output connector: N(f)
3871AU -400	400W solid state power amplifier	Frequency Range: 0.5GHz~3.0GHz Output Power: 400W RF output connector: N(f)
3871AU -450	450W solid state power amplifier	Frequency Range: 0.5GHz~3.0GHz Output Power: 450W RF output connector: N(f)
3871AU -3001	300W solid state power amplifier	Frequency Range: 0.8GHz~4.2GHz Output Power: 300W RF output connector: N(f)
3871AU -4001	400W solid state power amplifier	Frequency Range: 0.8GHz~4.2GHz Output Power: 400W RF output connector: N(f)
3871AU -500	500W solid state power amplifier	Frequency Range: 2.1GHz~2.7GHz Output Power: 500W RF output connector: N(f)
3871DA-040	40W solid state power amplifier	Frequency Range: 6GHz~18GHz Output Power: 40W RF output connector: N(f)
3871DB-060	60W solid state power amplifier	Frequency Range: 6GHz~18GHz Output Power: 60W RF output connector: N(f)
3871DB-080	80W solid state power amplifier	Frequency Range: 6GHz~18GHz Output Power: 80W RF output connector: N(f)
3871DC-150	150W solid state power amplifier	Frequency Range: 6GHz~18GHz Output Power: 150W RF output connector: N(f)
3871EB-040	40W solid state power amplifier	Frequency Range: 18GHz~26.5GHz Output Power: 40W RF output connector: WR42
3871EB-060	60W solid state power amplifier	Frequency Range: 18GHz~26.5GHz Output Power: 60W RF output connector: WR42
3871EB-080	80W solid state power amplifier	Frequency Range: 18GHz~26.5GHz Output Power: 80W RF output connector: WR42
3871EC-120	120W solid state power amplifier	Frequency Range: 18GHz~26.5GHz Output Power: 120W RF output connector: WR42
3871EC-150	150W solid state power amplifier	Frequency Range: 18GHz~26.5GHz Output Power: 150W

		RF output connector: WR42
3871EC-200	200W solid state power amplifier	Frequency Range: 18GHz~26.5GHz Output Power: 200W RF output connector: WR42
3871FE-020	20W solid state power amplifier	Frequency Range: 26GHz~40GHz Output Power: 20W RF output connector: WR28
3871FF-060	60W solid state power amplifier	Frequency Range: 26GHz~40GHz Output Power: 60W RF output connector: WR28
3871FF-080	80W solid state power amplifier	Frequency Range: 26GHz~40GHz Output Power: 80W RF output connector: WR28
3871FG-150	150W solid state power amplifier	Frequency Range: 26GHz~40GHz Output Power: 150W RF output connector: WR28
3871FP-005	5W solid state power amplifier	Frequency Range: 18GHz~40GHz Output Power: 5W RF output connector: 24JS18000
3871FP-010	10W solid state power amplifier	Frequency Range: 18GHz~40GHz Output Power: 10W RF output connector: 24JS18000
3871FQ-060	60W solid state power amplifier	Frequency Range: 18GHz~40GHz Output Power: 60W RF output connector: 24JS18000
3871FQ-080	80W solid state power amplifier	Frequency Range: 18GHz~40GHz Output Power: 80W RF output connector: 24JS18000
3871LA-005	5W solid state power amplifier	Frequency Range: 40GHz~60GHz Output Power: 5W RF output connector: 1.85mm(m)

* Option selection example: 3871AB-020 refers to the option that can only be applied to 3871AB. The complete model without option is the basic model. After the option is purchased, the working frequency band, output power, and RF output interface of the complete instrument are subject to the technical specifications listed on the option. After the option is purchased, according to the different options, the configuration of the complete instrument is reduced or increased based on the basic model, and the price will fluctuate.

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