S3871 Series Solid State Power Amplifier

Data Sheet

Saluki Technology Inc.

The document applies to following models:

- S3871x series Power Amplifier (9kHz - 60GHz)

Standard Pack:

- 1x Main Machine
- 1x Power Cord
- 1x U Disk (for documents)

Ordering Information:

Main machine

- S3871AD Power Amplifier: 9kHz - 250MHz, 54dB
- S3871AE Power Amplifier: 9kHz - 250MHz, 56dB
- S3871AH Power Amplifier: 80MHz - 1GHz, 54dB
- S3871AK Power Amplifier: 80MHz - 1GHz, 56dB
- S3871AA Power Amplifier: 1GHz - 2.5GHz, 53dB
- S3871AP Power Amplifier: 1GHz - 2.5GHz, 55dB
- S3871AB Power Amplifier: 1GHz - 6GHz, 48dB
- S3871AQ Power Amplifier: 2GHz - 6GHz, 53dB
- S3871AR Power Amplifier: 2GHz - 6GHz, 56dB
- S3871AS Power Amplifier: 500MHz - 6GHz, 50dB
- S3871AT Power Amplifier: 500MHz - 6GHz, 53dB
- S3871AU Power Amplifier: 500MHz - 6GHz, 56dB
- S3871DA Power Amplifier: 6GHz - 18GHz, 46dB
- S3871DB Power Amplifier: 6GHz - 18GHz, 50dB
- S3871DC Power Amplifier: 6GHz - 18GHz, 53dB
- S3871DD Power Amplifier: 6GHz - 18GHz, 56dB
- S3871DE Power Amplifier: 2GHz - 18GHz, 53dB

- S3871DK Power Amplifier: 2GHz - 18GHz, 50dB
- S3871DH Power Amplifier: 2GHz - 18GHz, 46dB
- S3871EA Power Amplifier: 18GHz - 26.5GHz, 43dB
- S3871EB Power Amplifier: 18GHz - 26.5GHz, 46dB
- S3871EC Power Amplifier: 18GHz - 26.5GHz, 53dB
- S3871FA Power Amplifier: 26GHz - 32GHz, 43dB
- S3871FB Power Amplifier: 32GHz - 40GHz, 43dB
- S3871FC Power Amplifier: 24GHz - 30GHz, 46dB
- S3871FN Power Amplifier: 33GHz - 37GHz, 45dB
- S3871FD Power Amplifier: 37GHz - 43GHz, 46dB
- S3871FE Power Amplifier: 26GHz - 40GHz, 43dB
- S3871FF Power Amplifier: 26GHz - 40GHz, 49dB
- S3871FG Power Amplifier: 26GHz - 40GHz, 53dB
- S3871FP Power Amplifier: 18GHz - 40GHz, 46dB
- S3871FQ Power Amplifier: 18GHz - 40GHz, 50dB
- S3871FR Power Amplifier: 18GHz - 40GHz, 53dB
- S3871FS Power Amplifier: 2GHz - 40GHz, 40dB
- S3871HA Power Amplifier: 40GHz - 47GHz, 40dB
- S3871LA Power Amplifier: 40GHz - 60GHz, 36dB

More versions

- S3871AB-020: 500MHz - 6GHz, 20W
- S3871AB-040: 500MHz - 6GHz, 40W
- S3871AS-060: 500MHz - 6GHz, 60W
- S3871AS-080: 500MHz - 6GHz, 80W
- S3871AT-150: 500MHz - 6GHz, 150W
- S3871AT-200: 800MHz - 4.2GHz, 200W
- S3871AT-250: 800MHz - 3GHz, 250W
- S3871AT-300: 2.1GHz - 2.7GHz, 300W
- S3871AU-250: 500MHz - 6GHz, 250W

- S3871AU-300: 500MHz - 3GHz, 300W
- S3871AU-350: 500MHz - 3GHz, 350W
- S3871AU-400: 500MHz - 3GHz, 400W
- S3871AU-450: 500MHz - 3GHz, 450W
- S3871AU-3001: 800MHz - 4.2GHz, 300W
- S3871AU-4001: 800MHz - 4.2GHz, 400W
- S3871AU-500: 2.1GHz - 2.7GHz, 500W
- S3871DA-040: 6GHz - 18GHz, 40W
- S3871DB-060: 6GHz - 18GHz, 60W
- S3871DB-080: 6GHz - 18GHz, 80W
- S3871DC-150: 6GHz - 18GHz, 150W
- S3871DH-005: 2GHz - 18GHz, 5W
- S3871DH-010: 2GHz - 18GHz, 10W
- S3871DK-080: 2GHz - 18GHz, 80W
- S3871EB-040: 18GHz - 26.5GHz, 40W
- S3871EB-060: 18GHz - 26.5GHz, 60W
- S3871EB-080: 18GHz - 26.5GHz, 80W
- S3871EC-120: 18GHz - 26.5GHz, 120W
- S3871EC-150: 18GHz - 26.5GHz, 150W
- S3871EC-200: 18GHz - 26.5GHz, 200W
- S3871FN-050: 33GHz - 37GHz, 50W
- S3871FE-020: 26GHz - 40GHz, 20W
- S3871FF-060: 26GHz - 40GHz, 60W
- S3871FF-080: 26GHz - 40GHz, 80W
- S3871FG-150: 26GHz - 40GHz, 150W
- S3871FP-005: 18GHz - 40GHz, 5W
- S3871FP-010: 18GHz - 40GHz, 10W
- S3871FQ-060: 18GHz - 40GHz, 60W
- S3871FQ-080: 18GHz - 40GHz, 80W
- S3871LA-005: 40GHz - 60GHz, 5W

Preface

Thank you for choosing Saluki Technology Products.

We devote ourselves to meeting your demands, providing you high-quality measuring instrument and the best after-sales service. We persist with “superior quality and considerate service”, and are committed to offering satisfactory products and service for our clients.

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Version

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Document Authorization

The information contained in this document is subject to change without notice. The power to interpret the contents of and terms used in this document rests with Saluki.

Product Quality Assurance

The warranty period of the product is 36 months from the date of delivery. The instrument manufacturer will repair or replace damaged parts according to the actual situation within the warranty period.

Product Quality Certificate

The product meets the indicator requirements of the document at the time of delivery. Calibration and measurement are completed by the measuring organization with qualifications specified by the state, and relevant data are provided for reference.

Quality/Settings Management

Research, development, manufacturing and testing of the product comply with the requirements of the quality and environmental management system.

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Content

1 Overview

The Saluki S3871 series Power Amplifier is a broadband solid state amplifier and incorporates the patented spatial power combination technologies. It is designed to have features of broad bandwidth, high gain, high power, wide dynamic range, low spurious signals and extremely load tolerant. These features enable the amplifier to be used as a cable test instrument covering multiple frequency bands. It is suitable for applications such as high power IC test, antenna testing, laboratory use, and electromagnetic compatibility/ electromagnetic interference test, as well as narrower band applications like radar, microwave imaging, and satellite communications etc.

2 Key Features

- ✧ Wide frequency range: from 9kHz to 60GHz
- ✧ Open Loop: Gain and Output can be adjusted with a step accuracy of 0.1dB
- ✧ Internal stability: With internal automatic level control circuits, the Output can be fixed and stable
- ✧ Remote control: The parameter adjustment and function setting can be controlled by GPIB or LAN
- ✧ Display: Display Output, reflected power, internal temperature, operating frequency
- ✧ Standard 4U 19-inch or 5U or customized rack chassis
- ✧ 0°C to 50°C operating temperature

- **Main Performance**
- ✧ Output display accuracy can reach ±0.3dB
- ✧ Dynamic range of Output adjustment can reach 20dB - 40dB
- ✧ Output stability can be reach ±0.3dB at constant temperature
- ✧ Output flatness can be reach ±0.3dB at steady state

- **Multiple Protection**
- ✧ **Input power**: 1mW - 1W (depending on the model)
- ✧ **Real-time monitoring of internal temperature**: high temperature alarm and automatic protection
- ✧ **Real-time monitoring of reflected power**: mismatch alarm and automatic protection
- ✧ **Real-time monitoring of fan working status**: fan working alarm and automatic protection

- **Special Design**
- ✧ The input port can be configured on the front or rear panel

- ✧ The output port can be configured on the front or rear panel
- ✧ Locked working status: prevent misoperation
- ✧ W and dBm power display at the same time

3 Technical Specifications

3.1 Standard Models

Model	Frequency Band	Gain (dB)	Psat (dBm)	Input Port	Output Port
S3871AD	9kHz - 250MHz	54	51	N(f)	N(f)
S3871AE	9kHz - 250MHz	56	53	N(f)	N(f)
S3871AH	80MHz - 1GHz	54	51	N(f)	N(f)
S3871AK	80MHz - 1GHz	56	53	N(f)	N(f)
S3871AA	1GHz - 2.5GHz	53	50	N(f)	N(f)
S3871AP	1GHz - 2.5GHz	55	52	N(f)	N(f)
S3871AB	1GHz - 6GHz	48	45	N(f)	N(f)
S3871AQ	2GHz - 6GHz	53	50	N(f)	N(f)
S3871AR	2GHz - 6GHz	56	53	N(f)	N(f)
S3871AS	500MHz - 6GHz	50	47	N(f)	N(f)
S3871AT	500MHz - 6GHz	53	50	N(f)	N(f)
S3871AU	500MHz - 6GHz	56	53	N(f)	N(f)
S3871DA	6GHz - 18GHz	46	43	N(f)	N(f)
S3871DB	6GHz - 18GHz	50	47	N(f)	N(f)
S3871DC	6GHz - 18GHz	53	50	N(f)	N(f)
S3871DD	6GHz - 18GHz	56	53	N(f)	N(f)
S3871DE	2GHz - 18GHz	53	50	N(f)	N(f)
S3871DK	6GHz - 18GHz	50	47	N(f)	N(f)
S3871DH	2GHz - 18GHz	46	43	N(f)	N(f)
S3871EA	18GHz - 26.5GHz	43	40	3.5mm(m)	3.5mm(m)

S3871EB	18GHz - 26.5GHz	46	43	3.5mm(m)	3.5mm(m)
S3871EC	18GHz - 26.5GHz	53	50	3.5mm(m)	WR42
S3871FA	26GHz - 32GHz	43	40	2.4mm(m)	2.4mm(m)
S3871FB	32GHz - 40GHz	43	40	2.4mm(m)	2.4mm(m)
S3871FC	24GHz - 30GHz	46	43	2.4mm(m)	2.4mm(m)
S3871FN	33GHz - 37GHz	45	45	2.4mm(m)	WR28
S3871FD	37GHz - 43GHz	46	43	2.4mm(m)	2.4mm(m)
S3871FE	26GHz - 40GHz	43	40	2.4mm(m)	2.4mm(m)
S3871FF	26GHz - 40GHz	49	46	2.4mm(m)	WR28
S3871FG	26GHz - 40GHz	53	50	2.4mm(m)	WR28
S3871FP	18GHz - 40GHz	46	43	2.4mm(m)	24JS18000
S3871FQ	18GHz - 40GHz	50	47	2.4mm(m)	24JS18000
S3871FR	18GHz - 40GHz	53	50	2.4mm(m)	24JS18000
S3871FS	2GHz - 40GHz	40	37	2.4mm(m)	2.4mm(m)
S3871HA	40GHz - 47GHz	40	37	2.4mm(m)	2.4mm(m)
S3871LA	40GHz - 60GHz	36	33	1.85mm(m)	1.85mm(m)

3.2 Options

Model	Frequency Band	Psat(W)	Output Port
S3871AB-020	500MHz - 6GHz	20	N(f)
S3871AB-040	500MHz - 6GHz	40	N(f)
S3871AS-060	500MHz - 6GHz	60	N(f)
S3871AS-080	500MHz - 6GHz	80	N(f)
S3871AT-150	500MHz - 6GHz	150	N(f)
S3871AT-200	800MHz - 4.2GHz	200	N(f)
S3871AT-250	800MHz - 3GHz	250	N(f)

S3871AT-300	2.1GHz - 2.7GHz	300	N(f)
S3871AU-250	500MHz - 6GHz	250	N(f)
S3871AU-300	500MHz - 3GHz	300	N(f)
S3871AU-350	500MHz - 3GHz	350	N(f)
S3871AU-400	500MHz - 3GHz	400	N(f)
S3871AU-450	500MHz - 3GHz	450	N(f)
S3871AU-3001	800MHz - 4.2GHz	300	N(f)
S3871AU-4001	800MHz - 4.2GHz	400	N(f)
S3871AU-500	2.1GHz - 2.7GHz	500	N(f)
S3871DA-040	6GHz - 18GHz	40	N(f)
S3871DB-060	6GHz - 18GHz	60	N(f)
S3871DB-080	6GHz - 18GHz	80	N(f)
S3871DC-150	6GHz - 18GHz	150	N(f)
S3871DH-005	2GHz - 18GHz	5	N(f)
S3871DH-010	2GHz - 18GHz	10	N(f)
S3871DK-080	2GHz - 18GHz	80	N(f)
S3871EB-040	18GHz - 26.5GHz	40	WR42
S3871EB-060	18GHz - 26.5GHz	60	WR42
S3871EB-080	18GHz - 26.5GHz	80	WR42
S3871EC-120	18GHz - 26.5GHz	120	WR42
S3871EC-150	18GHz - 26.5GHz	150	WR42
S3871EC-200	18GHz - 26.5GHz	200	WR42
S3871FN-050	33GHz - 37GHz	50	WR28
S3871FE-020	26GHz - 40GHz	20	WR28
S3871FF-060	26GHz - 40GHz	60	WR28
S3871FF-080	26GHz - 40GHz	80	WR28

S3871FG-150	26GHz - 40GHz	150	WR28
S3871FP-005	18GHz - 40GHz	5	24JS18000
S3871FP-010	18GHz - 40GHz	10	24JS18000
S3871FQ-060	18GHz - 40GHz	60	24JS18000
S3871FQ-080	18GHz - 40GHz	80	24JS18000
S3871LA-005	40GHz - 60GHz	5	1.85mm(m)

4 Typical Applications

- IC Test under Constant High Power

To test IC output characteristics and stability under constant high power.

- IC Test under Changing High Power

To test IC output characteristics and stability under changing high power.

- Outdoor Receiving/Transmitting Simulation

To test the transmission ability of Radar or Communication system under long distance, different frequencies and complex environment.

- Specific Electromagnetic Environment Simulation

Use high power to simulate complex electromagnetic environment.

- EMC Test

To generate wideband high power signal to test EMS.

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