



SUC-A Series Multi-Octave Upconverter

Datasheet



Saluki Technology Inc.

The document applies to the multi-octave upconverter of the following models:

- SUC20A multi-octave upconverter (RF output 0.5Hz - 20GHz)
- SUC26A multi-octave upconverter (RF output 0.5Hz - 26.5GHz)
- SUC40A multi-octave upconverter (RF output 0.5Hz - 40GHz)
- SUC50A multi-octave upconverter (RF output 0.5Hz - 50GHz)
- SUC67A multi-octave upconverter (RF output 0.5Hz - 67GHz)

Standard Package of the SUC-A series multi-octave upconverter:

No.	Item	Qty.
1	Multi-octave upconverter	1
2	Power Cord	1
3	Certificate of Calibration	1

Options of the SUC-A series multi-octave upconverter:

Model No.	Item	Description
SUC-MA	IF/BW IF/Bandwidth	IF Input: 70±20MHz
SUC-MB	IF/BW IF/Bandwidth	IF Input: 140±40MHz
SUC-MC	IF/BW IF/Bandwidth	IF Input: 0.72±0.25GHz
SUC-MD	IF/BW IF/Bandwidth	IF Input: 1.2±0.25GHz
SUC-ME	IF/BW IF/Bandwidth	IF Input: 1.2±0.5GHz
SUC-MF	IF/BW IF/Bandwidth	IF Input: 1.8±1GHz
SUC-MG	IF/BW IF/Bandwidth	IF Input: 3±2GHz
SUC-IQ	IQ Baseband Input	IQ Baseband Input
SUC-ATT110	ATT110	Minimum output of signal power down to -100dBm

Preface

Thank you for choosing SUC-A series multi-octave upconverter produced by Saluki Technology Inc.

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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Document Authorization

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Product Quality Assurance

The warranty period of the product is three years 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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1. Overview

Saluki SUC-A Series Multi-Octave Upconverter belongs to our microwave upconverter series that has a high performance and an octave coverage by RF signal. Its frequency step is precise and accurate to 10Hz with a variety of IF and signal bandwidth choices.

SUC-A series converter is mainly used for electronic countermeasure system, radar system, and satellite communication system. Its excellent phase noise, clutter suppression, and in-band flatness data can provide a transparent RF transmission channel to all videos or data communications. All programming commands can be set through a local panel or through network remotely. SUC-A series microwave upconverter is available in 2U/ 4U sizes.

Applications: T&M Systems / Satellite Communications / MIMO / Radar System

2. Main Characteristics

- Multi-octave RF coverage (0.5 - 67GHz)
- 4GHz or above instantaneous signal bandwidth
- Amplitude Equalization and Group Delay Equalization
- Variety of commonly used IF and bandwidth combinations
- Excellent phase noise specification (67GHz): $\leq -100\text{dBc/Hz}@10\text{kHz}$
- Internal and external reference switching
- Remote programming

3. Technical Specifications

3.1. Output Characteristics

Model No.	SUC20A	SUC26A	SUC40A	SUC50A	SUC67A
Frequency Range	0.5-20GHz	0.5-26.5GHz	0.5-40GHz	0.5-50GHz	0.5-67GHz
P-1 Output Power	$\geq 15\text{dBm}$	$\geq 15\text{dBm}$	$\geq 13\text{dBm}$	$\geq 10\text{dBm}$	$\geq 10\text{dBm}$
Frequency Tuning Step Size	10Hz				
Output VSWR	≤ 2.5	≤ 2.5	≤ 2.5	≤ 2.5	≤ 2.5
Output Impedance	50 Ω				

3.2. Input Characteristics

Model No.	SUC20A	SUC26A	SUC40A	SUC50A	SUC67A
Input Frequency	70 \pm 20MHz, 140 \pm 40MHz, 0.72 \pm 0.25GHz, 1.2 \pm 0.25GHz, 1.2 \pm 0.5GHz, 1.8 \pm 1GHz, 3 \pm 2GHz (select between single or multiple IF inputs)				
Maximum Power Input	+10dBm (Operating)				

Input VSWR	≤ 1.4
Input Impedance	50 Ω

3. 3. Transfer Characteristics

Model No.	SUC20A	SUC26A	SUC40A	SUC50A	SUC67A
Gain	0-15dB (minimum signal power output -100dBm or below, ATT110 support)				
Tuning Step Size	0.1dB				
Gain Resolution	$\leq \pm 1$ dB				
Level Stability	$\leq \pm 0.5$ dB/day at room temperature				
Gain Flatness	$\leq \pm 0.3$ dB/40MHz, $\leq \pm 0.5$ dB/80MHz, $\leq \pm 1$ dB/500MHz, $\leq \pm 1.5$ dB/1000MHz, $\leq \pm 2$ dB/2000MHz, $\leq \pm 3$ dB/4000MHz, $\leq \pm 2$ dB/Full Band				
Inband Frequency Clutter	≤ -55 dBc (excluding output harmonics)				
RF Shutdown Feature	≥ 80 dB				
Phase Noise (dBc/Hz)	$\leq -50@10$ Hz	$\leq -50@10$ Hz	$\leq -50@10$ Hz	$\leq -50@10$ Hz	$\leq -50@10$ Hz
	$\leq -80@100$ Hz	$\leq -80@100$ Hz	$\leq -75@100$ Hz	$\leq -75@100$ Hz	$\leq -75@100$ Hz
	$\leq -95@1$ kHz	$\leq -95@1$ kHz	$\leq -95@1$ kHz	$\leq -95@1$ kHz	$\leq -95@1$ kHz
	$\leq -102@10$ kHz	$\leq -102@10$ kHz	$\leq -100@10$ kHz	$\leq -100@10$ kHz	$\leq -100@10$ kHz
	$\leq -102@100$ kHz	$\leq -102@100$ kHz	$\leq -100@100$ kHz	$\leq -100@100$ kHz	$\leq -100@100$ kHz
	$\leq -108@1$ MHz	$\leq -108@1$ MHz	$\leq -105@1$ MHz	$\leq -105@1$ MHz	$\leq -105@1$ MHz

3. 4. Reference Characteristics

Model No.	SUC20A	SUC26A	SUC40A	SUC50A	SUC67A
Internal Reference Frequency Stability	$\pm 2e-8$ (0 $^{\circ}$ C to +50 $^{\circ}$ C, after 30min power on)				
Internal Reference Frequency Accuracy	0.05ppm				
Internal Reference Power Output	5 ± 2 dBm, 50 Ω , 10MHz, Sine wave				
External Reference Power Input	5 ± 2 dBm, 50 Ω , 10MHz, Sine wave				
Reference Phase Noise	≤ -125 dBc/Hz@10Hz, ≤ -140 dBc/Hz@100Hz, ≤ -150 dBc/Hz@1kHz, ≤ -155 dBc/Hz@10kHz, ≤ -155 dBc/Hz@100kHz				

3. 5. Physical Characteristics

Model No.	SUC20A	SUC26A	SUC40A	SUC50A	SUC67A
RF Output Port	2.92mm-K	2.92mm-K	2.92mm-K	2.4mm-K	1.85mm-K
IF Input Port	SMA-K				
I/Q Input Port	SMA-K				
External Reference Input Port	BNC female				
Internal Reference Output Port	BNC female				
Control Interface	RJ-45 (TCP/IP over Ethernet) / RS422				
Power Supply	AC,176-264VAC, 45Hz-65Hz, Power consumption 140W				
Dimension	483mm*90mm*550mm (2U)	483mm*180mm*550mm (4U)			
Weight	15kg	25kg			

3. 6. Environment

Operating	Temperature: 0°C to +50°C, Humidify: up to 95% @30°C, Noncondensing, Height: 3000 meters
Storage	Temperature: -30°C to +70°C, Humidify: up to 95% @40°C, Noncondensing, Height: 12000 meters, Shock and Vibration: Regular road transport/air transport

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