



# SUC-C Series Microwave Upconverter

## Datasheet



Saluki Technology Inc.

**The document applies to the microwave upconverter of the following models:**

- SUC0204C microwave upconverter (RF output 2GHz - 4GHz)
- SUC0408C microwave upconverter (RF output 4GHz - 8GHz)
- SUC0818C microwave upconverter (RF output 8GHz - 18GHz)
- SUC1826C microwave upconverter (RF output 18GHz - 26.5GHz)
- SUC2640C microwave upconverter (RF output 26.5GHz - 40GHz)
- SUC1840C microwave upconverter (RF output 18GHz - 40GHz)

**Standard Package of the SUC-C series microwave upconverter:**

No.	Item	Qty.
1	Microwave Upconverter	1
2	Power Cord	1
3	Certificate of Calibration	1

**Options of the SUC-C series microwave 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-ATT110	ATT110	Minimum output of signal power down to -100dBm
SUC-ST	Self-Testing and Combination Alarm	/

## Preface

Thank you for choosing SUC-C series microwave 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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Saluki Technology

## 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.

## Contacts

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## 1. Overview

Saluki SUC-C Series Microwave Upconverter is a broadband frequency converter that is dedicated for satellite communication. It has a high performance, high reliability and an octave covered by RF signal. Its frequency step is precise and accurate to 1Hz with a variety of IF and signal bandwidth choices. SUC-C series is equipped with functions like self-testing and combination alarm which is suitable for long-time uninterrupted use, guaranteed safety and reliability.

SUC-C series microwave upconverter is mainly designed for satellite communication system, signal monitoring system, and electronic countermeasure system with an excellent phase noise, clutter suppression, and in-band flatness data. It is able to 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-C series microwave upconverter has a standard 2U size.

**Applications: T&M Systems / Satellite Communications / MIMO**

## 2. Main Characteristics

- Octave RF coverage (S, C, X, Ku, and Ka)
- 2GHz or above instantaneous signal bandwidth
- Amplitude Equalization and Group Delay
- Variety of commonly used IF and bandwidth combinations
- Excellent phase noise specification (40GHz):  $\leq -100\text{dBc/Hz}@10\text{KHz}$
- Internal and external reference switching
- Remote programming
- Self-testing and combination alarm

## 3. Technical Specifications

### 3.1. Output Characteristics

Model No.	SUC0204C	SUC0408C	SUC0818C	SUC1826C	SUC2640C	SUC1840C
Frequency Range	2-4GHz	4-8GHz	8-18GHz	18-26.5GHz	26.5-40GHz	18-40GHz
P-1 Output Power	$\geq 15\text{dBm}$	$\geq 15\text{dBm}$	$\geq 15\text{dBm}$	$\geq 15\text{dBm}$	$\geq 13\text{dBm}$	$\geq 13\text{dBm}$
Frequency Tuning Step Size	1Hz					
IM3 Output	$\leq -36\text{dBc}$ ( $\Delta 5\text{MHz}$ , Maximum Gain, Power Output: $2*0\text{dBm}$ )					
Output VSWR	$\leq 1.4$	$\leq 1.4$	$\leq 1.5$	$\leq 1.5$	$\leq 1.5$	$\leq 2.2$
Output Impedance	50 $\Omega$					
RF Signal Monitoring	-20dBc (typ.)					

### 3. 2. Input Characteristics

Model No.	SUC0204C	SUC0408C	SUC0818C	SUC1826C	SUC2640C	SUC1840C
Input Frequency	70±20MHz, 140±40MHz, 0.72±0.25GHz, 1.2±0.25GHz, 1.2±0.5GHz, 1.8±1GHz (select between single or multiple IF inputs)					
Maximum Power Input	+10dBm (Operating)					
Input VSWR	≤1.4					
Input Impedance	50Ω					

### 3. 3. Transfer Characteristics

Model No.	SUC0204C	SUC0408C	SUC0818C	SUC1826C	SUC2640C	SUC1840C
Gain	0-30dB (minimum signal power output -100dBm or below, ATT110 support)					
Tuning Step Size	0.1dB					
Gain Resolution	≤±1dB					
Level Stability	≤±0.5dB/day at room temperature					
Gain Flatness	≤±0.3dB/40MHz, ≤±0.5dB/80MHz, ≤±1dB/500MHz, ≤±1.5dB/1000MHz, ≤±2dB/2000MHz, ≤±2dB/Full band					
Inband Frequency Clutter/ Signal Related/ Signal Non-related	≤-60dBc (0dBm output, excluding output harmonics) ≤-60dBm					
Group Delay (80% Signal Bandwidth)	Linear: ≤0.03ns/MHz. Parabola: ≤0.01ns/MHz <sup>2</sup> , Jitter: ≤1ns					
AM/PM Conversion	≤0.1°/dB (Maximum gain, 0dBm output)					
Spectral Characteristics	Non-inverted					
RF Shutdown Feature	≥ 80dB					
Phase Noise (dBc/Hz)	≤-50@10Hz	≤-50@10Hz	≤-50@10Hz	≤-50@10Hz	≤-50@10Hz	≤-50@10Hz
	≤-80@100Hz	≤-80@100Hz	≤-80@100Hz	≤-75@100Hz	≤-75@100Hz	≤-75@100Hz
	≤-105@1kHz	≤-100@1kHz	≤-95@1kHz	≤-95@1kHz	≤-95@1kHz	≤-95@1kHz
	≤-110@10kHz	≤-105@10kHz	≤-102@10kHz	≤-100@10kHz	≤-100@10kHz	≤-100@10kHz
	≤-110@100kHz	≤-105@100kHz	≤-102@100kHz	≤-100@100kHz	≤-100@100kHz	≤-100@100kHz

	≤-115@1MHz	≤-115@1MHz	≤-108@1MHz	≤-108@1MHz	≤-105@1MHz	≤-105@1MHz
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### 3. 4. Reference Characteristics

Model No.	SUC0204C	SUC0408C	SUC0818C	SUC1826C	SUC2640C	SUC1840C
Internal Reference Frequency Stability	±2e-8 (0°C to +50°C, after 30min power on)					
Internal Reference Frequency Accuracy	0.05ppm					
Internal Reference Power Output	5±2dBm, 50Ω, 10MHz, Sine wave					
External Reference Power Input	5±2dBm, 50Ω, 10MHz, Sine wave					
Reference Phase Noise	≤-125dBc/Hz@10Hz, ≤-140dBc/Hz@100Hz, ≤-150dBc/Hz@1kHz, ≤-155dBc/Hz@10kHz, ≤-155dBc/Hz@100kHz					

### 3. 5. Physical Characteristics

Model No.	SUC0204C	SUC0408C	SUC0818C	SUC1826C	SUC2640C	SUC1840C
RF Output Port	2.92mm-K					
IF 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 60W					
Dimension	483mm*90mm *550mm (2U)					
Weight	15kg					

### 3. 6. Environment

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