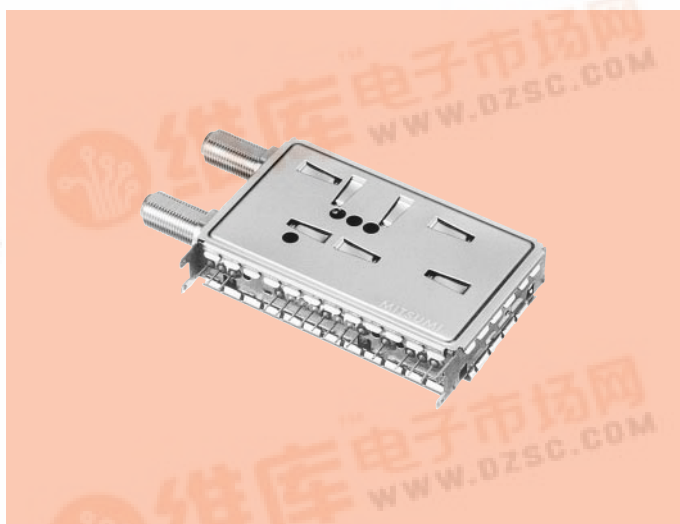


2nd RF Units for Digital Satellite Broadcasting Receiver TSU9 Series

DBS 2nd RF Units, CATV Converters

OUTLINE

TSU9 series is a compact and lightweight second RF unit incorporating I/Q demodulator for receiving digital satellite broadcasting.



FEATURE

1. Incorporates an I/Q demodulator.
2. Superb sensitivity and distortion characteristic.
3. Provided with a carrier control terminal that can control local oscillator frequency for I/Q demodulator.
4. Incorporates a distributor for connection to analog tuner.
5. Incorporates an IF-band switch.
6. Incorporates a PLL circuit that provides excellent phase noise characteristic.
7. A wide range of receivable input frequency.
8. Provided with a pre-scaler output terminal for I/Q demodulator.

SPECIFICATIONS

Item	Models	TSU9-EO1DT	Remarks
Input Frequency		950~2050MHz	
Input Impedance		75Ω	
Input Level		-25~-70dBm	F-female or IEC-female
IF Frequency		479.5MHz	
IQ Output Level		0.5Vp-p typ.	
Phase Noise		-78dBc/Hz	at 10kHz off
I/Q Phase Error		±3DEG max.	
I/Q Amplitude Error		±1.5dB max.	
Intermodulation		-40dBc typ.	at 3 signals

The diagram illustrates the RF front end architecture of the AD9361. It shows the signal path from the RF input/output through various processing blocks. The RF input is connected to a Filter and an Amp. The RF output is connected to a Splitter, which then feeds into a Filter, Amp, AGC, Band Pass Filter, Amp, AGC, and Amp. The AGC blocks are connected to the PLL Control PLL IC 12C BUS. The Band Pass Filter is connected to a Filter, which then feeds into a Mix, AGC, Amp, SAW Filter (36MHz), and Amp. The Mix is connected to an Osc, which is also connected to the PLL Control PLL IC 12C BUS. The Osc is connected to the I/Q Demodulator. The I/Q Demodulator is connected to the Buf and the PLL Control PLL IC 12C BUS. The Buf is connected to the AGC. The I/Q Demodulator outputs I OUT, Q OUT, and two Prescaler Output (1/32) signals. The PLL Control PLL IC 12C BUS is connected to the SDA, SCL, and I/O (3BIT ADC) pins. The LNB Input +B1 and LNB Output +B2 pins are also shown.

Technical drawing of the MITSUBISHI 32-bit microcomputer module, showing dimensions and pin configurations.

Top View Dimensions:

- Overall width: 92max.
- Overall height: 73max.
- Pin 1 location: 46.2 from top-left corner.
- Pin 2 location: 45 from top-left corner.
- Pin 3 location: 38 from top-left corner.
- Pin 12 location: 25 from top-left corner.
- Pin 15 location: 12 from top-left corner.
- Pin 36 location: 3.6 from top-left corner.
- Pin 35 location: 3.5 from top-left corner.
- Pin 20 location: 20 from top-left corner.
- Pin 3 location: 3 from top-left corner.
- Pin 4 location: 4.45 from top-left corner.
- Pin 5 location: 7.65 from top-left corner.
- Pin 7 location: 10.85 from top-left corner.
- Pin 8 location: 23.55 from top-left corner.
- Pin 9 location: 26.75 from top-left corner.
- Pin 10 location: 29.95 from top-left corner.
- Pin 11 location: 33.15 from top-left corner.
- Pin 12 location: 36.35 from top-left corner.
- Pin 13 location: 39.55 from top-left corner.
- Pin 14 location: 42.75 from top-left corner.
- Pin 15 location: 45.95 from top-left corner.
- Pin 16 location: 52.35 from top-left corner.
- Pin 18 location: 58.75 from top-left corner.
- Pin 19 location: 61.95 from top-left corner.
- Pin 20 location: 65.15 from top-left corner.
- Pin 69.9 location: 69.9 from top-left corner.

Side View Dimensions:

- Overall height: 14.8max.
- Pin 1 location: 12.6 from top-left corner.
- Pin 2 location: (6.3) from top-left corner.
- Pin 3 location: 11 from top-left corner.
- Pin 12 location: 2.6 from top-left corner.
- Pin 15 location: 3.5 from top-left corner.
- Pin 36 location: 8.3 from top-left corner.
- Pin 35 location: 3/8-32UNEF-2A from top-left corner.

Front View Dimensions:

- Overall width: 8.
- Pin 1 location: 8 from top-left corner.
- Pin 2 location: 8 from top-left corner.
- Pin 3 location: 8 from top-left corner.
- Pin 4 location: 8 from top-left corner.
- Pin 5 location: 8 from top-left corner.
- Pin 7 location: 8 from top-left corner.
- Pin 8 location: 8 from top-left corner.
- Pin 9 location: 8 from top-left corner.
- Pin 10 location: 8 from top-left corner.
- Pin 11 location: 8 from top-left corner.
- Pin 12 location: 8 from top-left corner.
- Pin 13 location: 8 from top-left corner.
- Pin 14 location: 8 from top-left corner.
- Pin 16 location: 8 from top-left corner.
- Pin 18 location: 8 from top-left corner.
- Pin 19 location: 8 from top-left corner.
- Pin 20 location: 8 from top-left corner.

Other Labels:

- M3x0.5 (TAP)
- 44.5max. (COVER)
- 2-3
- 2-0.6
- 15-0.6
- 8.3
- MITSUBISHI

Terminals
1. RF Input
2. RF Output
3. +B1 to LNB Input
4. +B2 to LNB Output
5. +B5 (+5V)
6. Carrier Control
7. I. Out
8. Q. Out
9. Prescaler Out
10. +B3 (+5V)
11. IF Monitor
12. AGC Control
13. ———
14. +B4 (+28V)
15. ———
16. Date
17. Clock
18. I/O Out (3 BIT ADC)
19. Prescaler Out

Unit : mm
General Tolerance : $\pm 0.5\text{mm}$