# DOWNCONVERTER



Downconverter is designed to convert signals from L-band to 70 MHz IF for further signal processing on this IF. It is used in satellite communication systems of L, S, C, X and Ku bands.

Downconverter from L-band to 70 MHz IF is a basic chassis on which are located: frequency converter module, controller board and indicator.
There is applied variable 30dB step attenuator in the radio frequency path for adjusting the gain of the downconverter.

## KEY FEATURES:

- The frequency converter module is downconverter with a double frequency conversion (L / 2400 MHz / 70 MHz).
- The signal in the receiver part passes through three stages of filtration.
- The structure of the unit, in addition to the frequency converter module, also includes network switching power supplies (AC/DC-converters).
- The parameters of the downconverter can be controlled using buttons which are located on the front panel.
- The set parameters can be seen using LCD on the front panel.
- In the presence of unlock in the PLL circuits of the converter module, the red LED “ALARM” on the front panel will be ON.
- The downconverter can be mounted in standard 19” rack. The height of downconverter is 1U.

**MAIN FUNCTIONS:**

- Frequencies converting into L-band when operating in the satellite communication and television L, S, C, X and Ku-bands systems to the standard 70 MHz IF signal for further processing on this IF.
- Monitoring and signaling the presence of unlock in the PLL circuits of the converter module.
- The gain factor adjusting using variable step attenuator with control depth of 30 dB.

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|---|---|
| Input parameters: | |
| Input frequency range, MHz | from 950 to 2150 |
| Frequency tuning step, kHz | 1 |
| Frequency instability, ppm | 0.01 |
| Phase noise power spectral density, dBc/Hz: | |
| 100 Hz | – 70 |
| 1 kHz | – 90 |
| 10 kHz | – 95 |
| 100 kHz | – 95 |
| 1 MHz | – 100 |
| Channel Bandwidth, MHz | 36 |
| The maximum allowable input signal level, dBm | – 20 |
| Input impedance, Ohm | 50 |
| Input return loss, dB | – 18 |
| Output parameters: | |

| | |
|---|---|
| Output power level with 1dB compression (P1dB out), dBm, not less than | 0 |
| The IMD3 value with two output signals of -13dBm, dBm, not more than | – 40 |
| Conversion gain, dB, not less than | 30 |
| Gain adjustment depth, dB, not less than | – 30 |
| Gain adjustment step, dB | 1.0 |
| Impedance of radio frequency output, Ohm | 50 |
| VSWR of radio frequency output | 1.8:1 |
| Spurious emissions in the working band, dB, not more than | – 60 |
| Control and monitoring: | |
| Control and monitoring mode | Local and remote |
| Remote mode interface | Ethernet 10/100 Base T |
| Reference oscillator: | |
| Reference oscillator frequency, MHz | 10 |
| Phase noise of the reference oscillator, dBc/Hz: | |
| 10 Hz | -125 |
| 100 Hz | -140 |
| 1 kHz | -150 |
| 10 kHz | -155 |
| Power supply: | |
| AC power supply voltage with frequency 50Hz, V | 100 – 262 |
| Mechanical: | |

| | |
|---|---|
| Overall dimensions (without connectors), mm | 482 x 300 x 44 |
| Weight, kg, not more than | 5.0 |

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