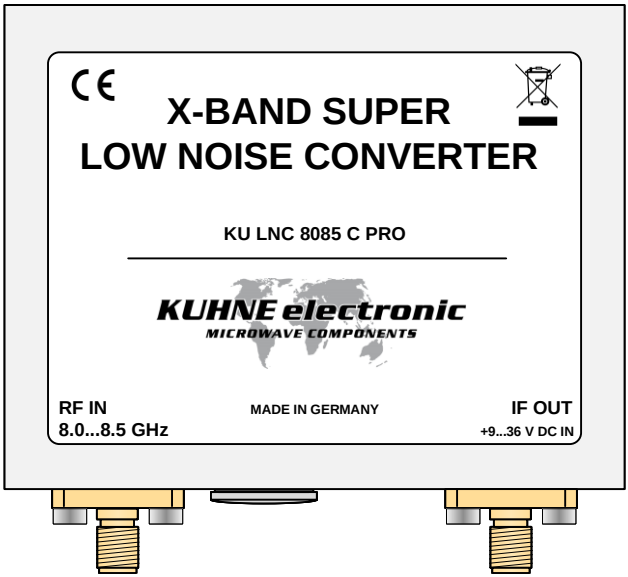
# KU LNC 8085 C PRO




# Manual



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## Specification

| | |
|---|---|
| Frequency range (RF)<br>RF input power | 8000 ... 8500 MHz<br>max. 1 mW (0 dBm) |
| Output frequency (IF)<br><br><br>Output IP3 (@Delta F: 1 MHz)<br>P1dB<br>Gain (switchable)<br>Noise figure @ 18 °C | 600 ... 1100 MHz (local oscillator 7400 MHz)<br>400 … 900 MHz (local oscillator 7600 MHz)<br><br>typ. +20 dBm (high gain), typ. +10 dBm (low gain)<br>typ. +11 dBm (high gain)<br>typ. 50 dB (high gain), typ. 37 dB (low gain) (LO frequency 7600, 7400)<br>typ. 0.8 dB, max. 1.0 dB (IF amplifier enabled, LO frequency 7600, 7400) |
| LO frequency (switchable)<br>LO accuracy @ 18 °C<br>LO frequency stability (0 ... 40 °C)<br><br>Phase noise @ 7600 MHz | 7200 MHz, 7400 MHz, 7600 MHz, 7800 MHz<br>+/- 1 kHz<br>+/- 0.5 ppm<br><br>@ 1 kHz: typ. -90 dBc/Hz<br>@ 10 kHz: typ. -94 dBc/Hz<br>@ 100 kHz: typ. -105 dBc/Hz |
| Operating case temperature range | -20 … +55 °C |
| Supply voltage<br>Current consumption<br>Power consumption | +9 ... 36 V DC<br>typ. 250 mA @ 12V (IF amplifier enabled)<br>typ. 3.0 W |
| Input connector / impedance<br>Output connector / impedance | SMA-female, 50 ohms<br>SMA-female, 50 ohms |
| Dimensions (mm)<br>Case<br>Weight | 82 x 64 x 22<br>milled aluminium<br>typ. 230 g |

**Features**
- Low noise figure
- Large bandwidth
- Low phase noise oscillator
- High frequency stability of the oscillator
- High linearity
- Antenna port protected against static discharge
- Small and light-weight to allow easy pole mounting
- Tri-colour LED indicates unit status and gain mode setting
- Overvoltage protection and reverse polarity protection
- Remote power supply via output connector

**Applications**
- Deep Space Communications

**Recommended Pre-Amplification**

- KU LNA 750850 A WG

Please note: The total gain of pre-amplifier + attenuator + converter should not exceed 60 dB.
More information on page 7.

Sig _____

Products are only to be sold to competent companies or to radio amateurs with a licence.
For operating high frequency modules legal instructions must be followed.

QS _____

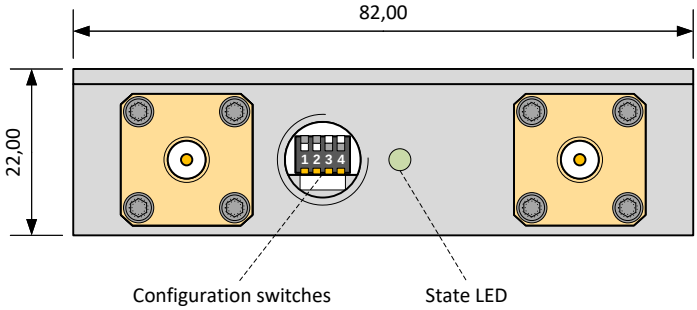


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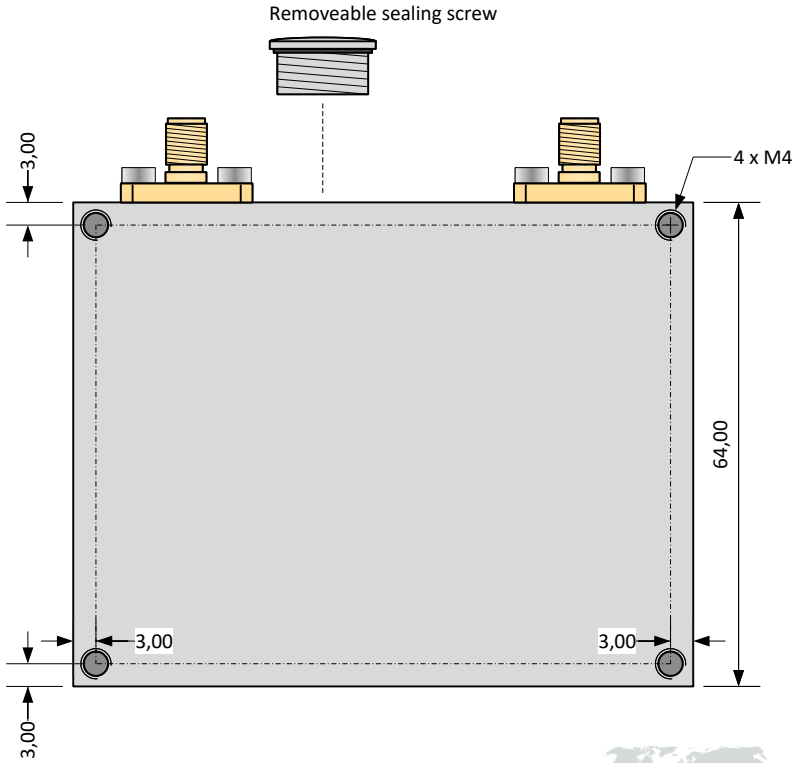
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## Dimensions / Mounting holes

### Front view




### Bottom view

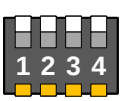





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## Configuration Switches / State LED

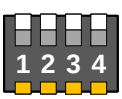



**Switch 1 + 2** - (Local oscillator frequency)

**Switch 3** - (Gain)

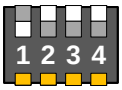
**Switch 4** - (User local oscillator frequency)

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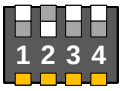

**Switch 1 – OFF / Switch 2 – OFF**

LO 7200 MHz
IF 800 ... 1300 MHz



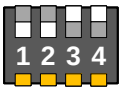

**Switch 1 – ON / Switch 2 – OFF**

LO 7400 MHz
IF 600 ... 1100 MHz




**Switch 1 – OFF / Switch 2 – ON**

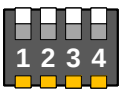
LO 7600 MHz
IF 400 ... 900 MHz




**Switch 1 – ON / Switch 2 – ON**

LO 7800 MHz
IF 200 ... 700 MHz

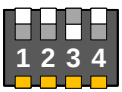
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**Switch 3 – OFF** → **State LED**

Low Gain → Green






**Switch 3 – ON** → **State LED**

High Gain → Blue



**Device Error** → **State LED**

Red

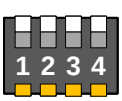




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## Configuration Switches / State LED



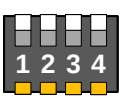

**Switch 1 + 2** - (Local oscillator frequency)

**Switch 3** - (Gain)

**Switch 4** - (User local oscillator frequency)

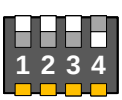
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**User defined local oscillator frequency**




**Switch 4 – OFF**

Local oscillator configuration with Switch 1 + 2




**Switch 4 – ON**

Local oscillator configuration with Switch 1 + 2 disabled
User defined local oscillator frequency is enabled

In the case that **Switch 4** is in position **ON** the user defined local oscillator frequency is activated.
This user defined local oscillator frequency can be selected in the range from 6600… 8000 MHz and from 8500 … 9900 MHz. The frequency step size of the oscillator frequency is 10 MHz.
The user defined oscillator frequency can be programmed with a special programming cable.

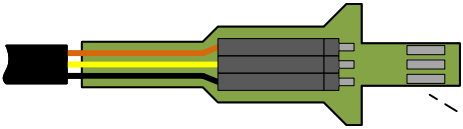
For example the oscillator frequency can be choosen to 7460 MHz or 9290 MHz .



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## Optional Connector PCB



USB – serial interface cable
FTDI TTL-232R-3V3

connector PCB
Kuhne electronic GmbH

spring contacts

**Configure the user defined local oscillator frequency**

- connect the USB – serial interface cable with your PC

- start a terminal program on your PC (for example „hterm“)

- choose the COM port of the USB – serial interface cable

```
BAUDRATE 9600
DATABITS 8
STOPBITS 1
NO FLOW CONTROL
```

- insert the connector PCB with connected USB – serial interface cable into the configuration slot
the spring contact must show to the top cover of the down converter

- power up the down converter

- send „s“ with the terminal program to the converter to get the state of the converter

```
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PLL locked
GAIN high
Selected LO frequency: 7600 MHz
User defined LO frequency: 7600 MHz
User defined LO frequency enabled
```

- send „7380LO“ with the terminal program to the converter to get set the user defined oscillator frequency to 7380 MHz

```
New LO frequency 7380 MHz accepted
```

- power down the down converter

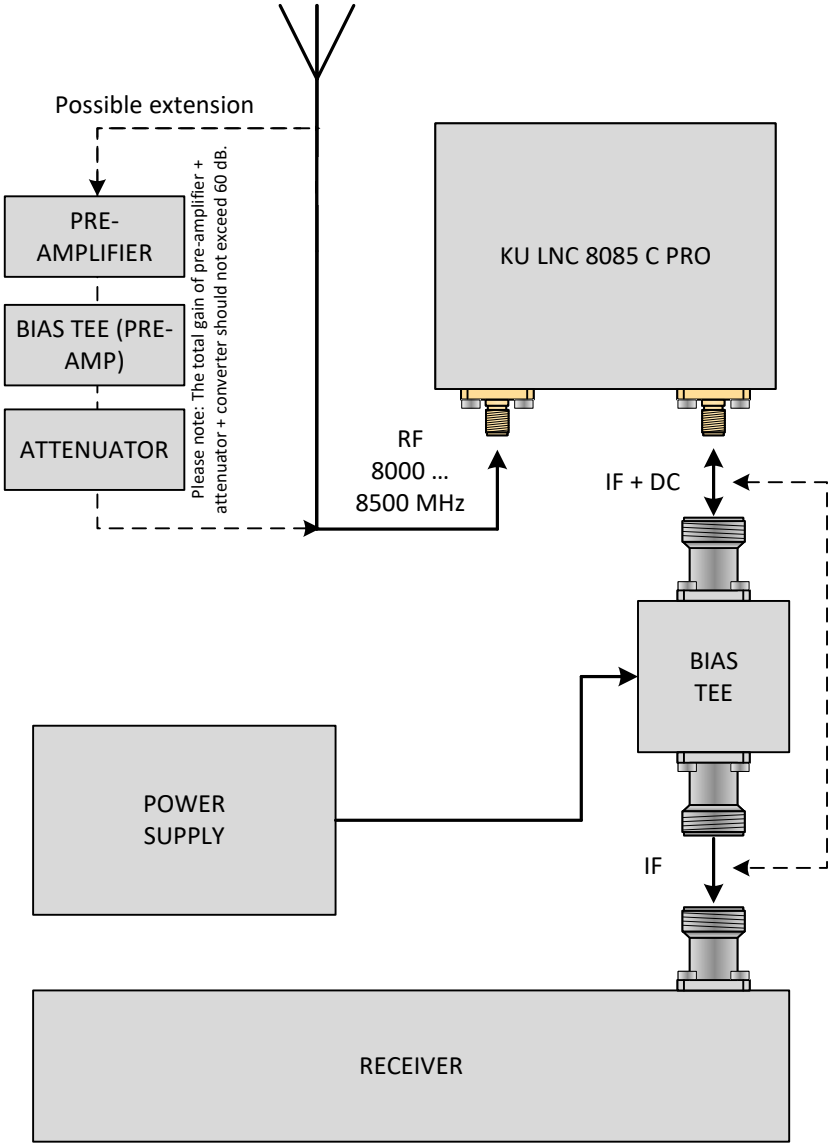
- remove the connector PCB



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## Application diagram



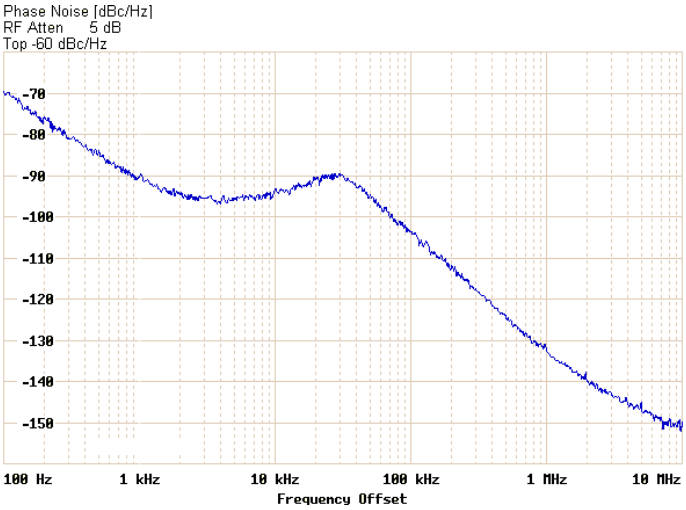



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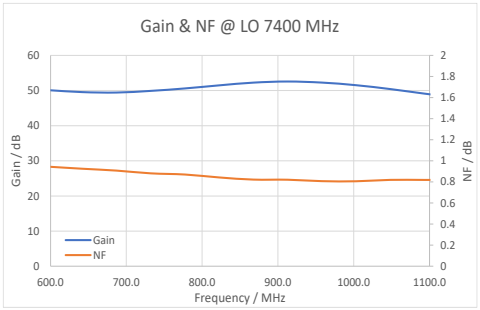
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## Typical performance

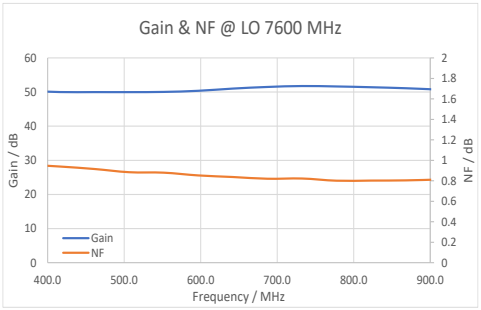
Typical phase noise at 7600 MHz
local oscillator frequency




Typical gain and noise figure
(7400 MHz local oscillator frequency)




Typical gain and noise figure
(7600 MHz local oscillator frequency)






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