



ALARIS
KUHNE

INSPIRING THE NEXT RF SOLUTION

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Version 1.0

KU LNC 4450 C PRO



Manual

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A DIVISION OF

ALARIS
THE RF TECHNOLOGY GROUP



Specifications (Ta = 25 °C):

Type

KU LNC 4450 C PRO

Frequency range (RF) 4400 ... 5000 MHz
 Noise figure @ 18 °C typ. 1.9 dB, max. 2.2 dB (LO frequency 4140 MHz, IF amplifier enabled)
 Gain (switchable) typ. 30 dB (high gain), typ. 19 dB (low gain) (LO frequency 4140 MHz)
 Output IP3 typ. +23 dBm (high gain), typ. +12 dBm (low gain)

Switchable LO, IF frequencies

Output frequency (LO 4140, 5260 MHz) 260 ... 860 MHz
 Output frequency (LO 4100 MHz) 300 ... 900 MHz
 Output frequency (LO 4250 MHz) 150 ... 750 MHz
 LO accuracy @ 18 °C +/- 2 ppm
 LO frequency stability (0 ... 40 °C) +/- 3 ppm

Phase noise @ 4140 MHz

@ 1 kHz typ. -90 dBc/Hz
 @ 10 kHz typ. -101 dBc/Hz
 @ 100 kHz typ. -100 dBc/Hz

Operating parameters

Supply voltage +9 ... 36 V DC
 Current consumption typ. 250 mA @ 12V (IF amplifier enabled)
 Power consumption typ. 3.0 W

Mechanics

Input connector / impedance N-female, 50 ohms
 Output connector / impedance N-female, 50 ohms
 Case milled aluminium, IP67
 Dimensions (mm) 82 x 64 x 22
 Weight typ. 230 g

Absolute ratings

Maximum RF input power 1 mW (0 dBm)
 Operating case temperature range -20 ... +55 °C

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

- Multichannel Multipoint Distribution Services (MMDS)
- Digital broadcast systems (DVB-T, DVB-S)
- Analog and digital transmission systems

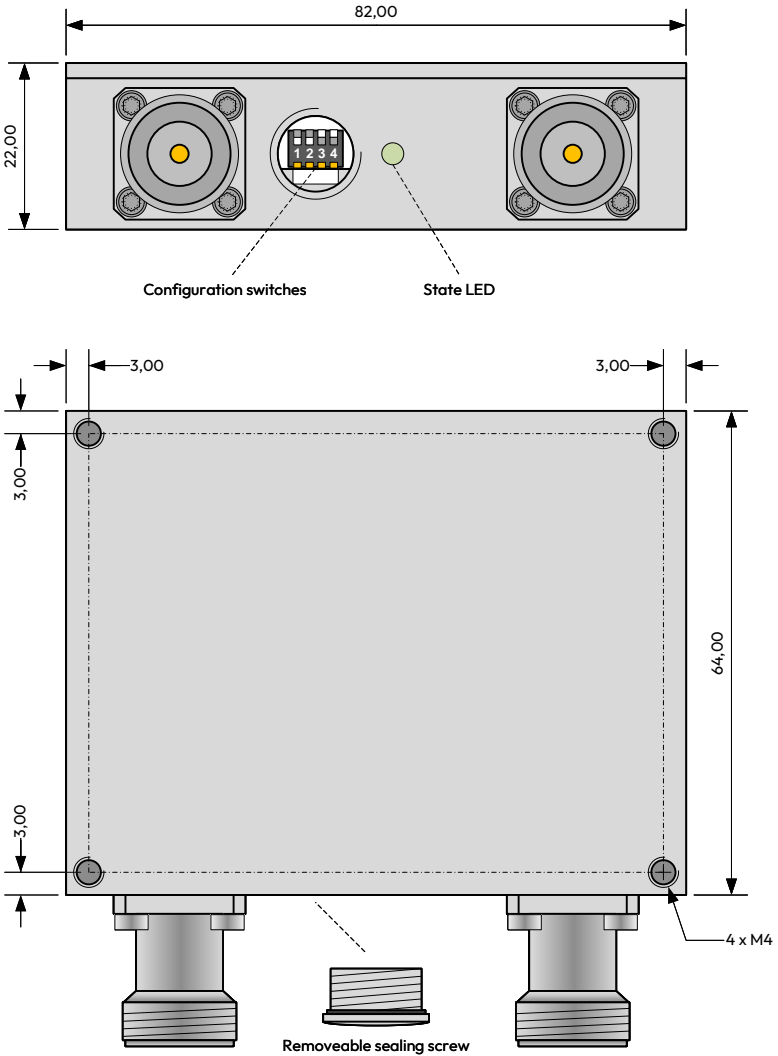
CE Konformität / CE Conformity

EMC directive 2014/30/EU
 Low voltage directive 2014/35/EU
 RoHS directive 2011/65/EU

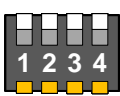




Dimensions / Mounting holes



Configuration Switches / LED state

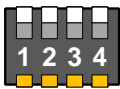


↑ OFF
 ↓ ON

Switch 1 + 2 - (Local oscillator frequency)
Switch 3 - (Gain)
Switch 4 - (User local oscillator frequency)

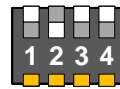
Device Error

LED state
 Red



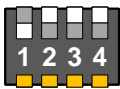
↑ OFF
 ↓ ON

Switch 1 - OFF
Switch 2 - OFF
 LO 5260 MHz
 IF 860 ... 260 MHz



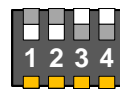
↑ OFF
 ↓ ON

Switch 1 - OFF
Switch 2 - ON
 LO 4100 MHz
 IF 300 ... 900 MHz



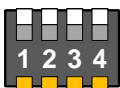
↑ OFF
 ↓ ON

Switch 1 - ON
Switch 2 - OFF
 LO 4250 MHz
 IF 150 ... 750 MHz



↑ OFF
 ↓ ON

Switch 1 - ON
Switch 2 - ON
 LO 4140 MHz
 IF 260 ... 860 MHz

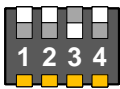


↑ OFF
 ↓ ON

Switch 3 - OFF
 Low Gain



LED state
 Green

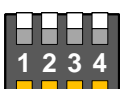


↑ OFF
 ↓ ON

Switch 3 - ON
 High Gain

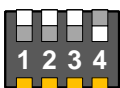


LED state
 Blue



↑ OFF
 ↓ ON

Switch 4 - OFF
 Local oscillator configuration with Switch 1 + 2



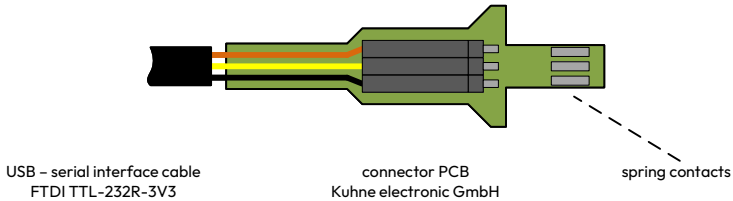
↑ OFF
 ↓ ON

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 4100 ... 4250 MHz and from 5150 ... 5300 MHz.
 The frequency step size of the oscillator frequency is 5 MHz.
 The user defined oscillator frequency can be programmed with a special programming cable (see next page).

For example the oscillator frequency can be chosen to 4160 MHz .

Optional Connector PCB



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

```
Kuhne electronic GmbH - KU LNC 4450 C PRO

PLL locked
GAIN high
Selected LO frequency: 4140 MHz
User defined LO frequency: 4140 MHz
User defined LO frequency enabled
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- send „4160LO“ with the terminal program to the converter to get set the user defined oscillator frequency to 4160 MHz
- power down the down converter
- remove the connector PCB

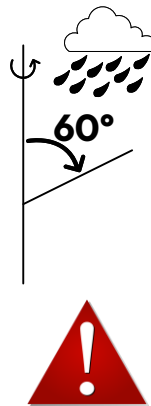
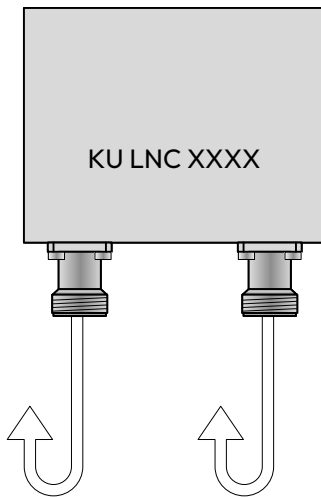
Mounting instructions

All LNCs from Kuhne electronic GmbH are labelled with at least protection class IP41 in accordance with DIN EN 60529, **unless a higher protection class is explicitly indicated in the valid specifications for the protection class on page 2.**

This provides information on the resistance of the unit against unwanted penetration of foreign bodies or moisture into the interior of the unit according to the following provision:

- Protected against granular solid foreign bodies (diameter ≥ 1 mm).
- Protection against falling spray up to 60° from vertical

The LNC modules have been designed with maximum protection against moisture. Nevertheless, water may enter the unit due to the design of the RF connectors, which is why some special features should be taken into account during installation.



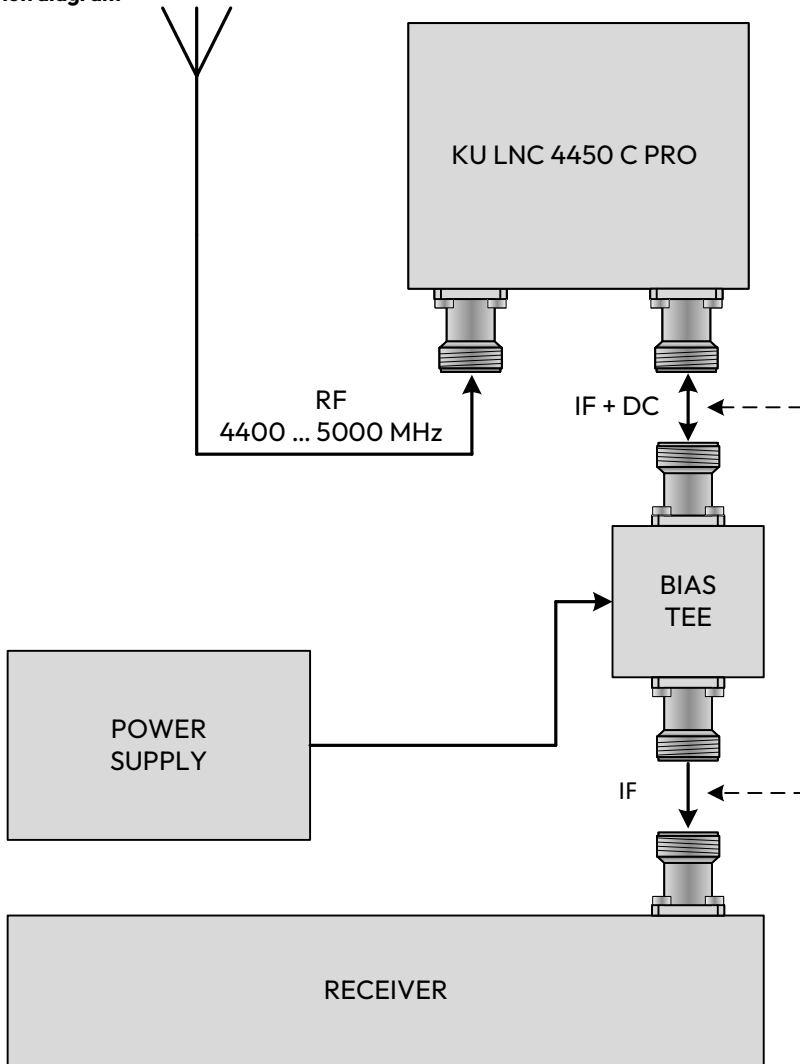
Mounting with the RF connectors vertically downwards

If possible, do not use cable connections with angled elbow connectors, but lead plugs out with a straight cable and a loop pointing downwards.

In the event of improper installation or handling that does not comply with our recommendations, Kuhne electronic reserves the right to exclude the warranty claim.



Application diagram





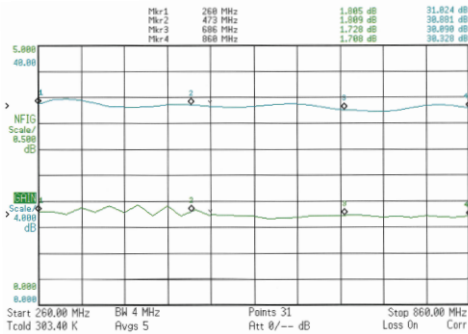
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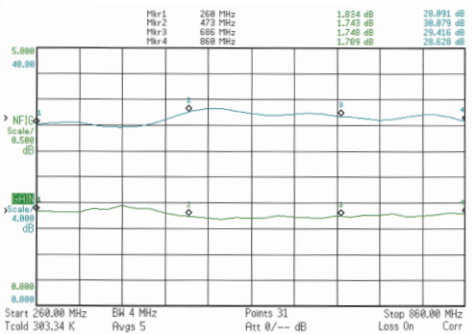
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Typical performance

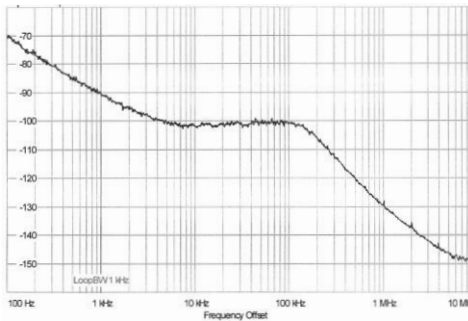
Typical gain and noise figure (4140 MHz LO frequency, IF amplifier on)



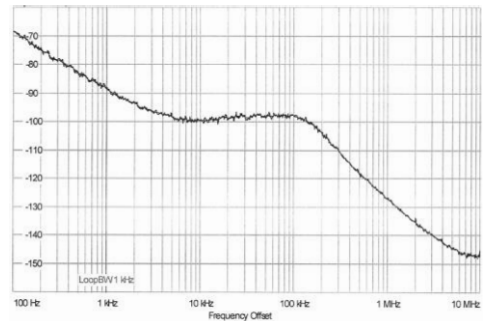
Typical gain and noise figure (5260 MHz LO frequency, IF amplifier on)



Typical phase noise at 4140 MHz local oscillator frequency



Typical phase noise at 5260 MHz local oscillator frequency



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