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Scheibenacker 3, 95180 Berg,
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INSPIRING THE NEXT RF SOLUTION

Version 1.0

KU LNC 2027 C PRO2

Manual

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A DIVISION OF ALARIS THE RF TECHNOLOGY GROUP

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Specifications (Ta = 25 °C):

Type	**KU LNC 2027 C PRO2**
Frequency range (RF)	2000 ... 2700 MHz
Noise figure @ 18 °C	typ. 0.8 dB, max. 1.0 dB (LO frequency 1840 MHz, IF amplifier enabled)
Gain (switchable)	typ. 35 dB (high gain), typ. 24 dB (low gain) (LO frequency 1840 MHz)
Output IP3	typ. +25 dBm (high gain), typ. +14 dBm (low gain)
Switchable LO, IF frequencies	
Output frequency (LO 1840, 2860 MHz)	160 ... 860 MHz
Output frequency (LO 1800 MHz)	200 ... 900 MHz
Output frequency (LO 1900 MHz)	100 ... 800 MHz
LO accuracy @ 18 °C	+/- 2 ppm
LO frequency stability (0 ... 40 °C)	+/- 3 ppm
Phase noise @ 1840 MHz	
@ 1 kHz	typ. -98 dBc/Hz
@ 10 kHz	typ. -110 dBc/Hz
@ 100 kHz	typ. -110 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

CE

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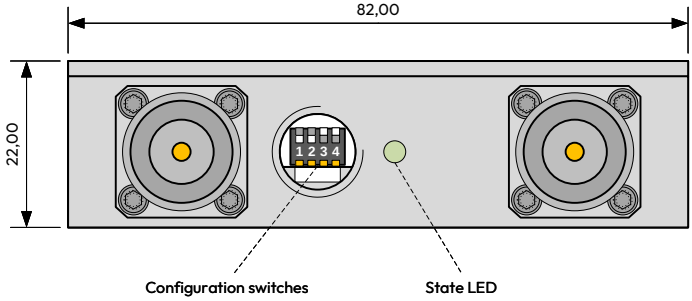
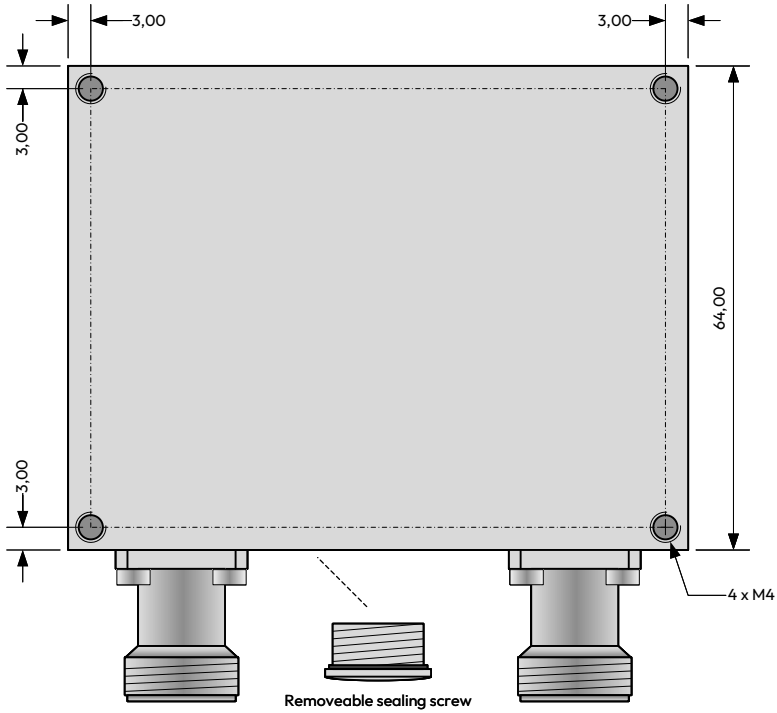
Dimensions / Mounting holes





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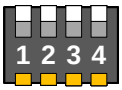
Configuration Switches / LED state



OFF
ON

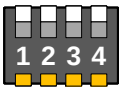
Switch 1 + 2 - (Local oscillator frequency)

Switch 3 - (Gain)

Switch 4 - (User local oscillator frequency)

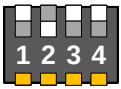
Device Error

LED state
Red



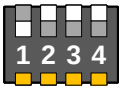
OFF
ON

Switch 1 – OFF
Switch 2 – OFF
LO 1840 MHz
IF 160 ... 860 MHz



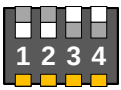
OFF
ON

Switch 1 – OFF
Switch 2 – ON
LO 1900 MHz
IF 100 ... 800 MHz



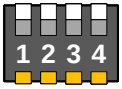
OFF
ON

Switch 1 – ON
Switch 2 – OFF
LO 1800 MHz
IF 200 ... 900 MHz



OFF
ON

Switch 1 – ON
Switch 2 – ON
LO 2860 MHz
IF 860 ... 160 MHz



OFF
ON

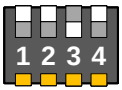
Switch 3 – OFF

Low Gain

→

LED state

Green



OFF
ON

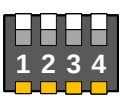
Switch 3 – ON

High Gain

→

LED state

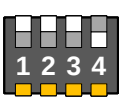
Blue



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 1800 ... 1900 MHz and from 2800 ... 2900 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 (see next page).

For example the oscillator frequency can be choosen to 1870 MHz or 2820 MHz .

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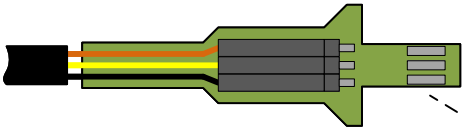
Optional Connector PCB



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: 1840 MHz
User defined LO frequency: 1860 MHz
User defined LO frequency enabled
```

- send „1860LO“ with the terminal program to the converter to get set the user defined oscillator frequency to 1860 MHz

```
New LO frequency 1860 MHz accepted
```

- power down the down converter

- remove the connector PCB

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Mounting instructions

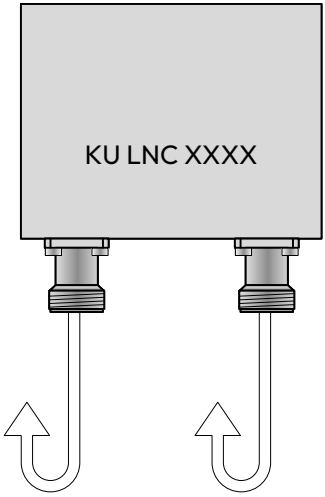
All LNCs from Kuhne electronic GmbH are labelled with at least protection class IP41 in accordance with DIN EN 60529, **unless a higher protection class is explicitly indicated in the valid specifications for the protection class on page 2**.

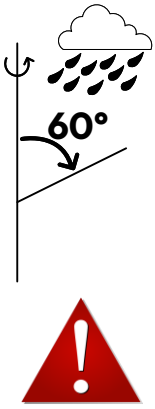
This provides information on the resistance of the unit against unwanted penetration of foreign bodies or moisture into the interior of the unit according to the following provision:

- 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.

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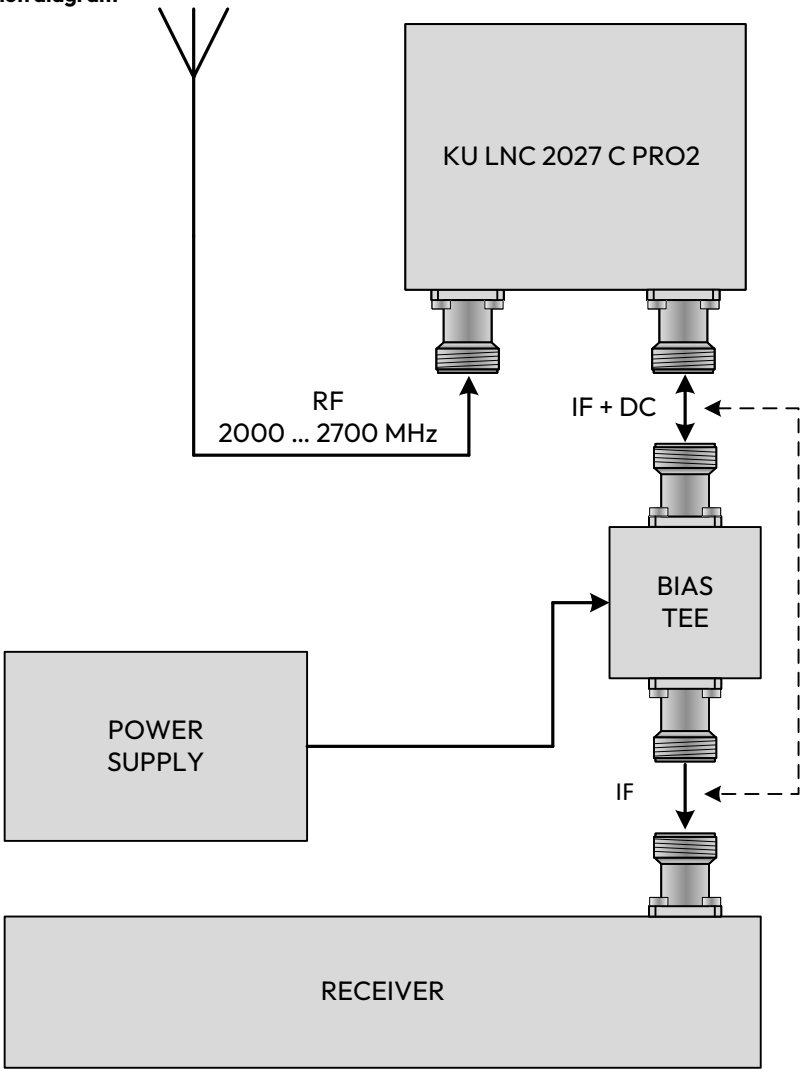
Application diagram



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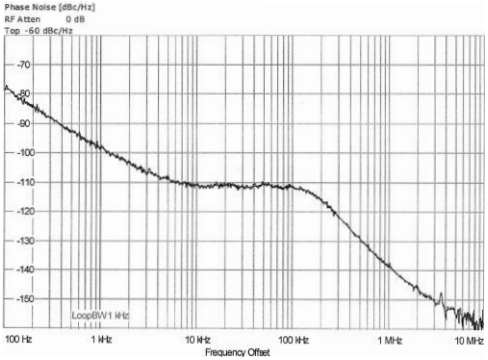
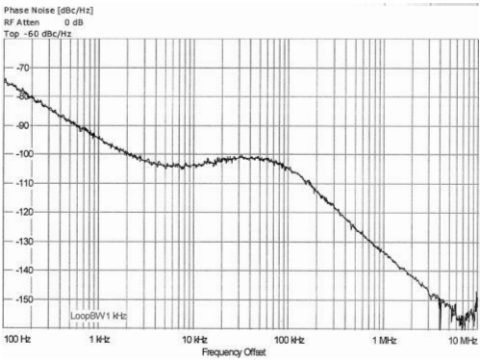
Typical performance

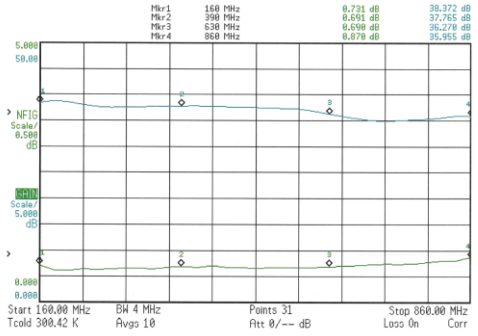
Typical phase noise at 1840 MHz
local oscillator frequency



Typical phase noise at 2860 MHz
local oscillator frequency



Typical gain and noise figure
(1840 MHz local oscillator frequency)



Typical gain and noise figure
(2860 MHz local oscillator frequency)