



ALARIS
KUHNE

INSPIRING THE NEXT RF SOLUTION

- +49 (0) 9293 - 800 640
- sales@kuhne.alaris.tech
- www.kuhne.alaris.tech
- Scheibenacker 3, 95180 Berg,
Germany

Version 1.0

KU LNC 1215 C PRO



Manual

Directors: Ian Duke/Gustav Wenhold
Reg no: HRB 3350 Hof, VAT-ID-No: DE 813343044, WEEEReg.-Nr. DE34186665

Kuhne electronic GmbH
Scheibenacker 3, 95180 Berg
Germany

A DIVISION OF

ALARIS
THE RF TECHNOLOGY GROUP



Specifications (Ta = 25 °C):

Type	KU LNC 1215 C PRO
Frequency range (RF)	1200 ... 1500 MHz
Noise figure @ 18 °C	typ. 0.5 dB, max. 1.0 dB (LO frequency 1700 MHz, IF amplifier enabled)
Gain (switchable)	typ. 35 dB (high gain), typ. 24 dB (low gain) (LO frequency 1700 MHz)
Output IP3	typ. +30 dBm (high gain), typ. +19 dBm (low gain)
Switchable LO, IF frequencies	
Output frequency (LO 1700, 1000 MHz)	200 ... 500 MHz
Output frequency (LO 1800 MHz)	300 ... 600 MHz
Output frequency (LO 1600 MHz)	100 ... 400 MHz
LO accuracy @ 18 °C	+/- 2 ppm
LO frequency stability (0 ... 40 °C)	+/- 3 ppm
Phase noise @ 1700 MHz	
@ 1 kHz	typ. -95 dBc/Hz
@ 10 kHz	typ. -100 dBc/Hz
@ 100 kHz	typ. -107 dBc/Hz
Operating parameters	
Supply voltage	+9 ... 36 V DC
Current consumption	typ. 250 mA @ 12V (IF amplifier enabled)
Power consumption	typ. 2.7 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



Directors: Ian Duke/Gustav Wenhold
 Reg no: HRB 3350 Hof, VAT-ID-No: DE 813343044, WEEEReg.-Nr. DE34186665

Kuhne electronic GmbH
 Scheibenacker 3, 95180 Berg
 Germany

A DIVISION OF

ALARIS
 THE RF TECHNOLOGY GROUP



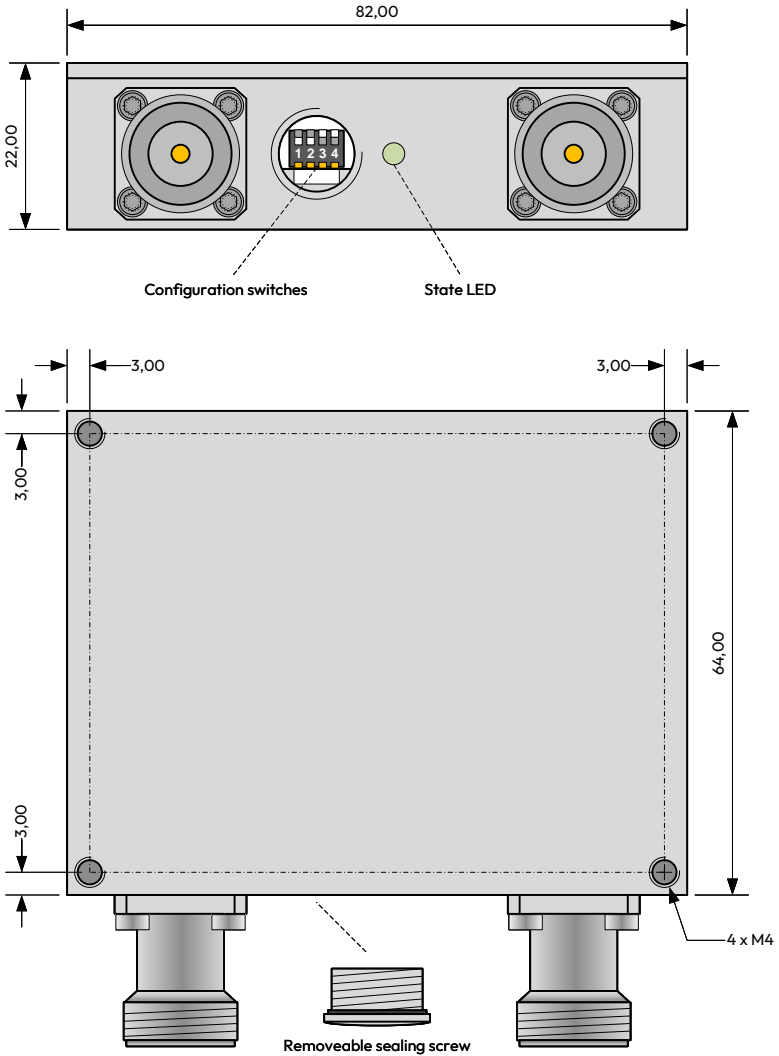


ALARIS
KUHNE

INSPIRING THE NEXT RF SOLUTION

+49 (0) 9293 - 800 640
sales@kuhne.alaris.tech
www.kuhne.alaris.tech
Scheibenacker 3, 95180 Berg,
Germany

Dimensions / Mounting holes



Directors: Ian Duke/Gustav Wenhold
Reg no: HRB 3350 Hof, VAT-ID-No: DE 813343044, WEEEReg.-Nr. DE34186665

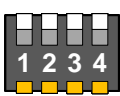
Kuhne electronic GmbH
Scheibenacker 3, 95180 Berg
Germany

A DIVISION OF

ALARIS
THE RF TECHNOLOGY GROUP



Configuration Switches / LED state

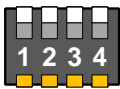


↑ OFF
 ↓ ON

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

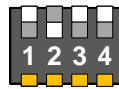
Device Error

LED state
 Red



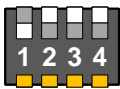
↑ OFF
 ↓ ON

Switch 1 - OFF
Switch 2 - OFF
 LO 1800 MHz
 IF 600 ... 300 MHz



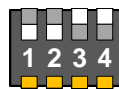
↑ OFF
 ↓ ON

Switch 1 - OFF
Switch 2 - ON
 LO 1700 MHz
 IF 500 ... 200 MHz



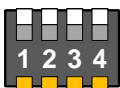
↑ OFF
 ↓ ON

Switch 1 - ON
Switch 2 - OFF
 LO 1600 MHz
 IF 400 ... 100 MHz



↑ OFF
 ↓ ON

Switch 1 - ON
Switch 2 - ON
 LO 1000 MHz
 IF 200 ... 500 MHz

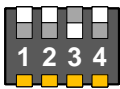


↑ OFF
 ↓ ON

Switch 3 - OFF
 Low Gain



LED state
 Green

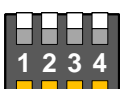


↑ OFF
 ↓ ON

Switch 3 - ON
 High Gain

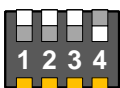


LED state
 Blue



↑ 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 1600 ... 1800 MHz and from 900 ... 1100 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 1745 MHz.

Directors: Ian Duke/Gustav Wenhold
 Reg no: HRB 3350 Hof, VAT-ID-No: DE 813343044, WEEEReg.-Nr. DE34186665

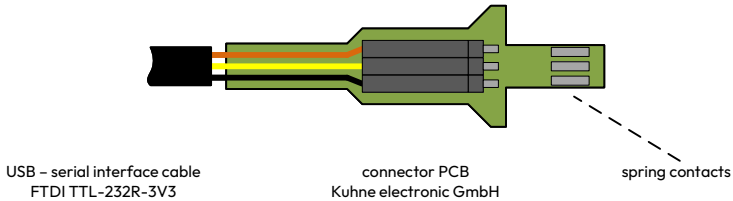
Kuhne electronic GmbH
 Scheibenacker 3, 95180 Berg
 Germany

A DIVISION OF

ALARIS
 THE RF TECHNOLOGY GROUP



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 1215 C PRO

PLL locked
GAIN high
Selected LO frequency: 1800 MHz
User defined LO frequency: 1745 MHz
User defined LO frequency enabled
```

- send „1745LO“ with the terminal program to the converter to get set the user defined oscillator frequency to 1745 MHz
- power down the down converter
- remove the connector PCB

Directors: Ian Duke/Gustav Wenhold
 Reg no: HRB 3350 Hof, VAT-ID-No: DE 813343044, WEEEReg.-Nr. DE34186665

Kuhne electronic GmbH
 Scheibenacker 3, 95180 Berg
 Germany

A DIVISION OF

ALARIS
THE RF TECHNOLOGY GROUP



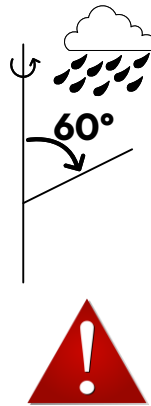
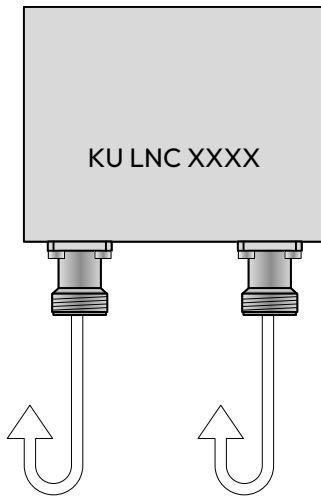
Mounting instructions

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.

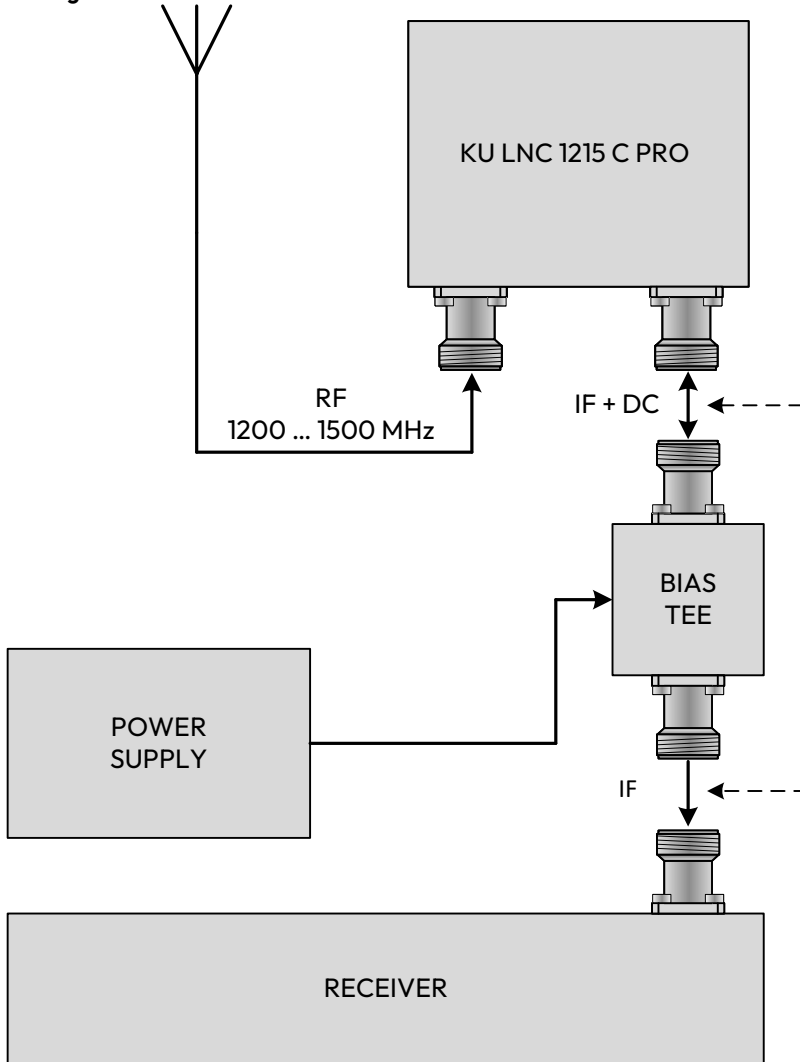


ALARIS
KUHNE

INSPIRING THE NEXT RF SOLUTION

+49 (0) 9293 - 800 640
sales@kuhne.alaris.tech
www.kuhne.alaris.tech
Scheibenacker 3, 95180 Berg,
Germany

Application diagram



Directors: Ian Duke/Gustav Wenhold
Reg no: HRB 3350 Hof, VAT-ID-No: DE 813343044, WEEEReg.-Nr. DE34186665

Kuhne electronic GmbH
Scheibenacker 3, 95180 Berg
Germany

A DIVISION OF

ALARIS
THE RF TECHNOLOGY GROUP





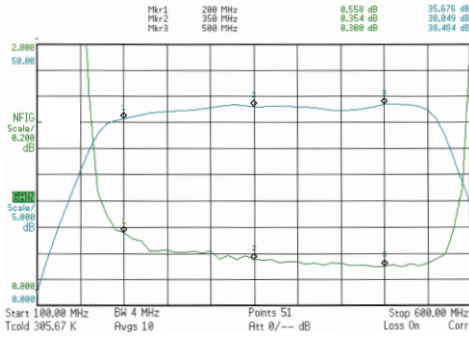
ALARIS
KUHNE

INSPIRING THE NEXT RF SOLUTION

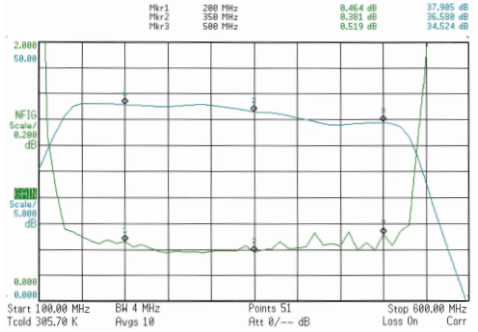
+49 (0) 9293 - 800 640
sales@kuhne.alaris.tech
www.kuhne.alaris.tech
Scheibenacker 3, 95180 Berg,
Germany

Typical performance

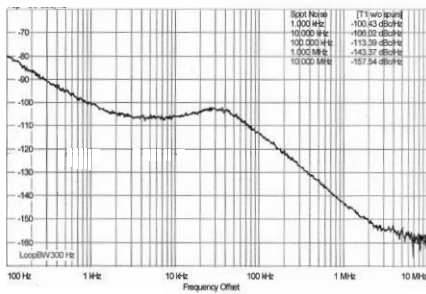
Typical gain and noise figure (1700 MHz LO frequency, IF amplifier on)



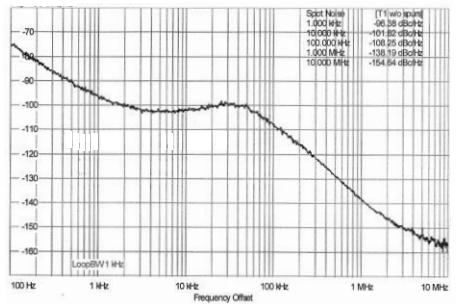
Typical gain and noise figure (1000 MHz LO frequency, IF amplifier on)



Typical phase noise at 1000 MHz local oscillator frequency



Typical phase noise at 1700 MHz local oscillator frequency



Directors: Ian Duke/Gustav Wenhold
Reg no: HRB 3350 Hof, VAT-ID-No: DE 813343044, WEEEReg.-Nr. DE34186665

Kuhne electronic GmbH
Scheibenacker 3, 95180 Berg
Germany

A DIVISION OF

ALARIS
THE RF TECHNOLOGY GROUP

