



# GAMMA NXLD (LongDistance)

Programmable UHF Tranceiver  
868/915 MHz



**NXLD US**

**FCC ID:2A28Q-NXLD**

013051  
135441-US  
v22 P123





The NXLD RF module is a completely new design. The footprint is very small, but the logic & I/O capabilities remain compatible to our flagship NX1. The RF part is designed for the 868/915MHz area with up to 22dBm output power and LongRange DSSS coding.

The higher power compensates for the loss of penetration properties of twice the frequency compared to 434MHz. Furthermore, the use of long-range coding methods results in an additional gain in range.

One challenge compared to our 434MHz solutions is the current consumption of up to 130mA, which effects especially small battery driven devices.

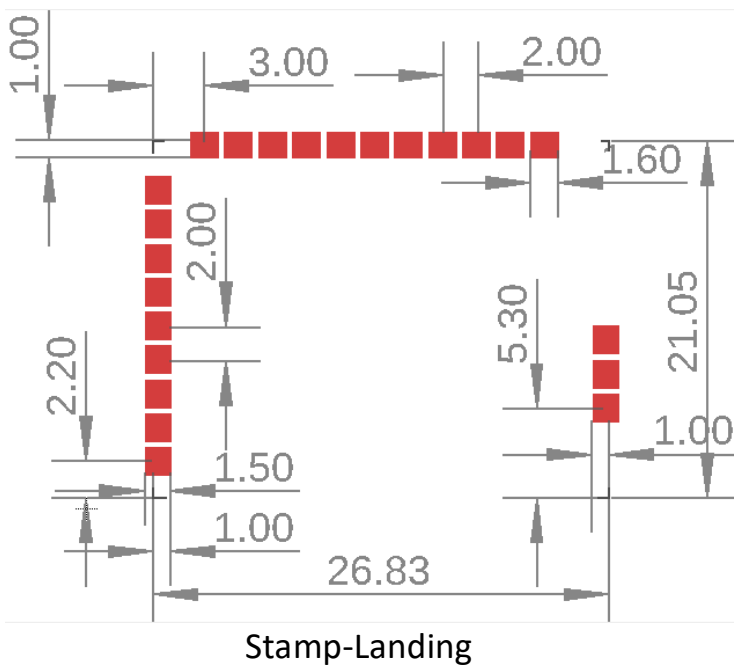
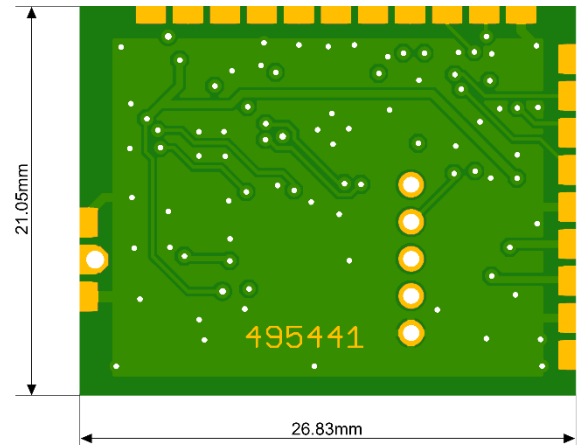
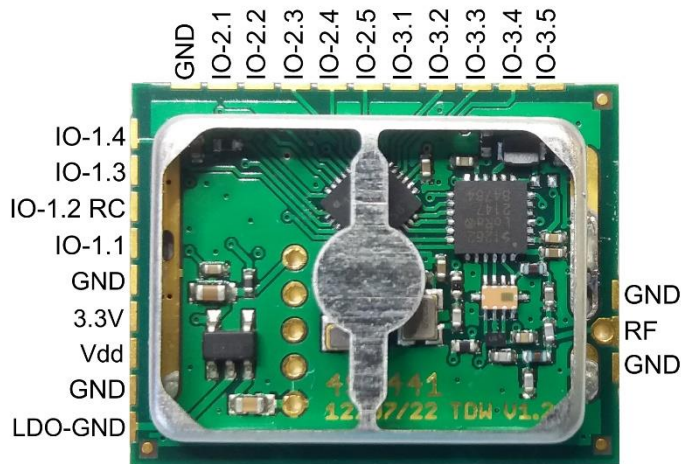
Therefore, these modules target larger size transmitters with according battery power and/or less frequent transmission events.

This module is FCC certified under part15-modular approach and can be used as-is (together with one of the two certified antennas) at 915MHz in the US without any new certification process. Customer only has to fill a so-called SDoC (self-declaration, pointing on the FCC number of that module).

Another option is to use the module in EMEA in the 868MHz range, where the module operates in a slot which is allowed to operate at 22dBm output power.

Customers need to order the frequency range area according to their needs.

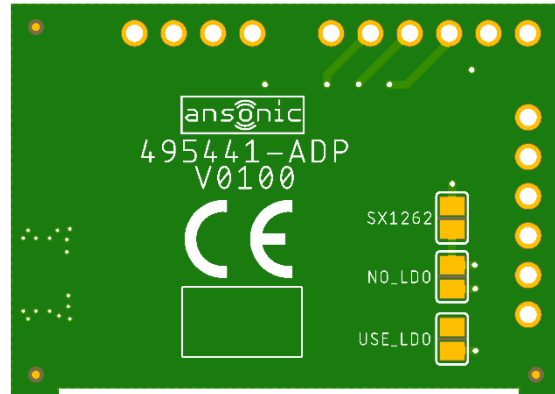
This module shall be operated in packet mode only, operated by the UART connection.



### NX1 -adapter/carrier:

Mechanical compatibility to our NX1-modules can be achieved easily with these carrier boards.

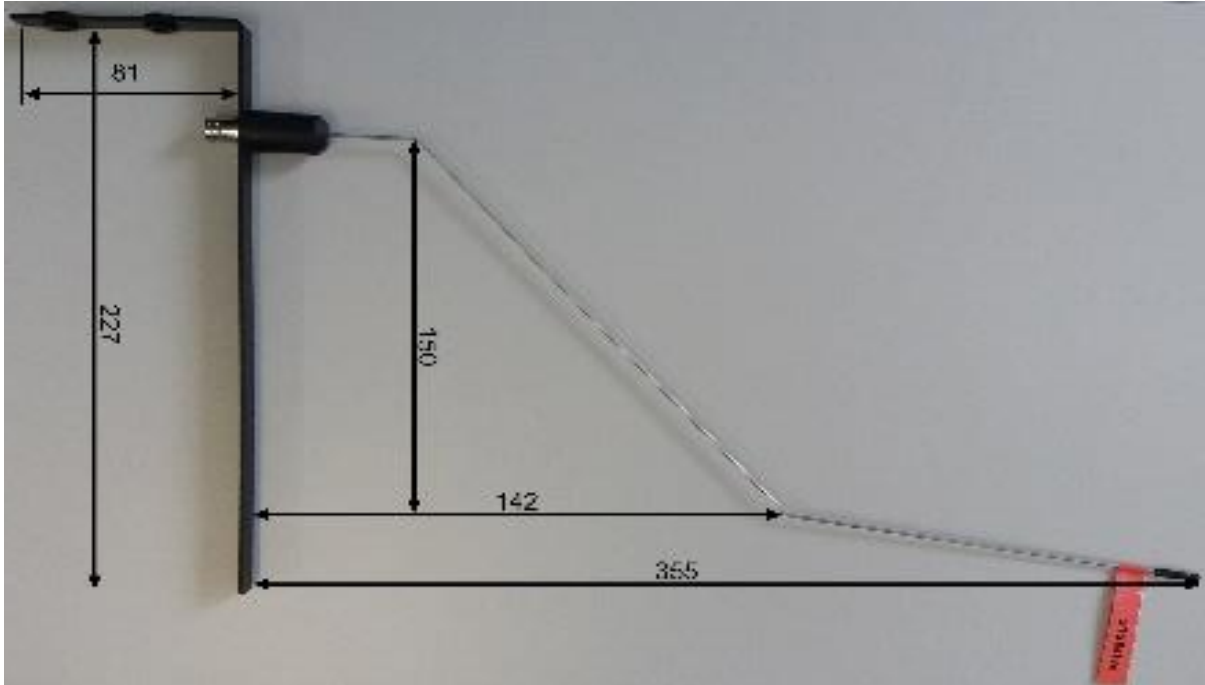
Using it makes this module a 1:1 replacement to NX1 (packet mode only)



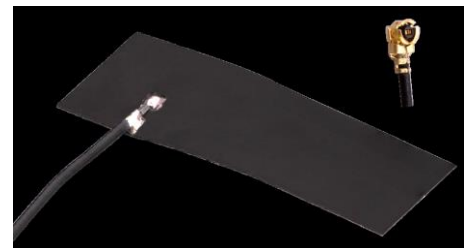
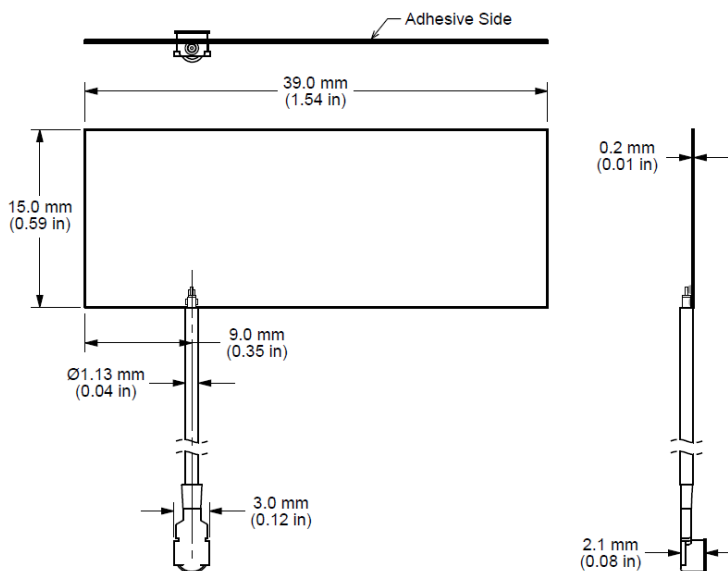
### Module placed on NX1-Adapter:



### Antenna VR5\_915:



### Antenna LINX FLEX:



LNNC\_S\_A00112909  
94\_1-2551064.pdf

## Regulations:

### Integration instructions for host product manufacturers

#### 2.2 List of applicable FCC rules

FCC 47 CFR Part 15C 'modular transmitters'

#### 2.3 Specific operational use conditions

Usage is only allowed if the validated antennas, described in this manual, are used.  
Any other usage requires new FCC certification

#### 2.4 Limited module procedures

Not applicable

#### 2.5 Trace antenna designs

Not applicable

#### 2.6 RF exposure considerations

LORA module max. output: 22dBm

Antenna gain: -3dBm

→ Resulting max e.i.r.p. :19dBm = 0.08W

E.i.r.p. is less than the RF exposure evaluation exempted power. So RF exposure evaluation is not required.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not transmit simultaneously or operated in conjunction with any other antenna or transmitter within a device. End-users, installers and OEM integrators must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance

#### 2.7 Antennas

Applicable antennas are described in this document. Those are part of the FCC certification.

#### 2.8 Label and compliance information

This module falls into the FCC 47 CFR Part 15C 'modular transmitters'. Operation in US-FCC is permitted due to according certification. Import to US is allowed if customers product refer to 'contains FCC ID: 2A28Q-NXLD' and according use.

#### 2.9 Information on test modes and additional testing requirements

not applicable

#### 2.10 Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is **only** FCC authorized for the specific rule parts listed on the grant.

The host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

**15.21** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**15.19(a)(1)** This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## Modul Characteristics

### Absolute Maximum Ratings

Parameter	Min	Typ	Max	Unit	Condition
Supply Voltage Vdd-Pin	-0.3		15	V	1)
Supply Voltage 3.3V-Pin	-0.3		3.9	V	2)
Input / RF-Level				dBm	

1) GND\_LDO &amp; GND connected

2) only allowed if GND\_LDO is not connected !

### Electrical Characteristics

Parameter	Min	Typ	Max	Unit	Condition
Supply Voltage Vdd-Pin	2.1	5	12	V	1) 3)
Supply Voltage Vdd-Pin			5.8	V	1) 4)
Supply Voltage 3.3V-Pin	1.8	3.3	3.6	V	2)

1) GND\_LDO &amp; GND connected 3) single-packet-mode (Duty-Cycle 1%) 4) continuous mode@50°C

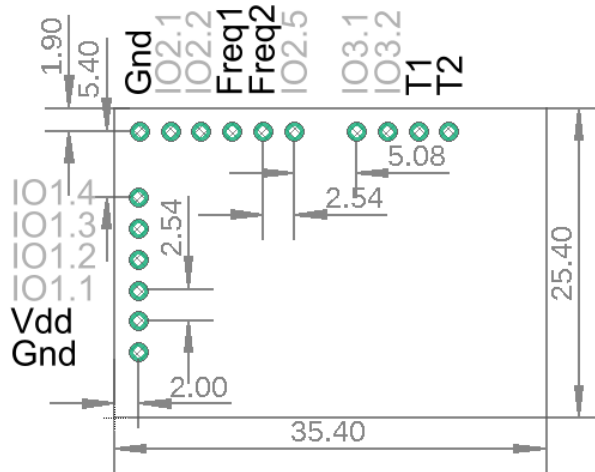
### General Parameters – US version

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Applicable Standard/ compliance	FCC 47 part 15C in 915MHz / ETSI in 868MHz
Transceiver type	PLL based fully integrated digital narrow band transceiver
Frequency Band	903 – 927 MHz
Number of channels	4 selectable, see table below
Preprogrammed frequencies	See table below
Modulation	DSSS-LoRa; BW = 500kHz
Data rate	SF10; CR=4/5
Oscillation method	Crystal (TCXO) based PLL oscillator, temperature compensated

**Adapter modul top:**

Adaptor NX1 v1.0





## Eval-PCB:



### *Connectors:*

Vdd / Gnd	: powering 3.5 - 5.8V
RF-Out	: via UFL-connector
F1/F1	: frequency adjustment
T1 / T1	: remote testing
IO1.1	: mode tx/rx

### Programming via FRQ1 & 2 Pins:

Freq1	Freq2	Frequenz
short	short	903 MHz
open	short	911 MHz
short	open	919 MHz
open	open	927 MHz

### Tests

Taste (Signal)	Funktion
T1	On/off periodically transmission
T2	Single packet // on/off time-gap at periodically transmission

Both signals T1/T2 can also be connected by their pins.

### LED

Flashing while transmitting / receiving

### IO1.1 - jumper

open: transmitting mode  
short: receiving mode

Stand: Nov. 2022

Änderungen vorbehalten

Urheberrechtlich geschützt, Nachdruck, auch auszugsweise, nur mit schriftlicher Genehmigung