



GAMMA NX 1 US/Canada

Programmable UHF Tranceiver
457-462 MHz narrow band





This NX1 version is based on our known European versions of NX1. It operates as GFSK narrow band transceiver in either simple Modem operation or in packet mode.

All functions and technical data remain as in the standard NX1, except the selectable frequency ranges: those are in the 460MHz band to meet North American regulations.

2

That means that the modules fall into the FCC Part90.217 mobile land regulation licensed band.

Operation in US-FCC and Canada-IC is permitted due to according certification.

Import to US/Canada is allowed if customers product refer to 'contains FCC ID: 2A28Q-NX1 / IC ID: 27776-NX1 part'.

For all further and detailed module operations please use the standard NX1-MP data sheets.

Warnings/Recommendations:

RF Exposure recommendations:

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

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

Les changements ou modifications qui ne sont pas expressément approuvés par la partie responsable de la conformité peuvent annuler l'autorité de l'utilisateur à utiliser l'équipement.

15.19(a)(1) This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

Cet appareil est conforme aux règles ICES-003. Son utilisation est soumise à la condition que cet appareil ne provoque pas d'interférences nuisibles.

Modul Characteristics

Absolute Maximum Ratings

Parameter	Min	Typ	Max	Unit	Condition
Supply Voltage	2.5		15	V	
Input/ RF Level			<u>10</u>	<u>dBm</u>	

General Parameters – US/Canada version

Applicable Standard/ compliance	FCC part 90.217 / ISED RSS-119
Transceiver type	PLL based fully integrated digital narrow band transceiver
Frequency Band	457.7 – 462.5 MHz; narrow band with typical OBW <=10kHz
Number of channels	16 selectable, see table below
Preprogrammed frequencies	See table below
Channel Step	typ. <= 25 kHz
Frequency resolution	16 Hz
Modulation	2-GFSK
Data rate (transparent mode / Modem operation)	Max 4000 bps, typ. 2kHz
Oscillation method	Crystal (TCXO) based PLL oscillator, temperature compensated
Frequency stability: Aging first year	Max. 1ppm (~ 0,4kHz)
Frequency stability: Temperature drift (-30 to + 80 C)	Max. 2ppm (~ 0,9 kHz)
Startup time	< 10ms
RX/TX turnaround time	RX->TX:<1ms TX->RX:<4ms
Data logic	Positive
Operating temp. range	-30 to +80 C
Supply Voltage	3.0-15V
Dimensions	36x26x8mm

RECEIVER SPECS	
Sensitivity	-117 dBm (2 kbps)
Blocking & Selectivity	60 dB (25 kHz adjacent channel)
Phase noise	-115 dBc/Hz at 10 kHz offset
Data logic	Positive
Receiver polarity	Data out: Low frequency=Lo, High frequency=Hi
RSSI variation range	-117 to -60 dBm
Current consumption	27mA (9mA in special sniff mode)
TRANSMITTER SPECS	
Power Output	15dBm
Adjacent channel power	-61 dBc (2-GFSK at 2.4 kbps)
SPECIAL	
General purpose I/O (GPIO):	on demand, up to 14

Device Startup Time

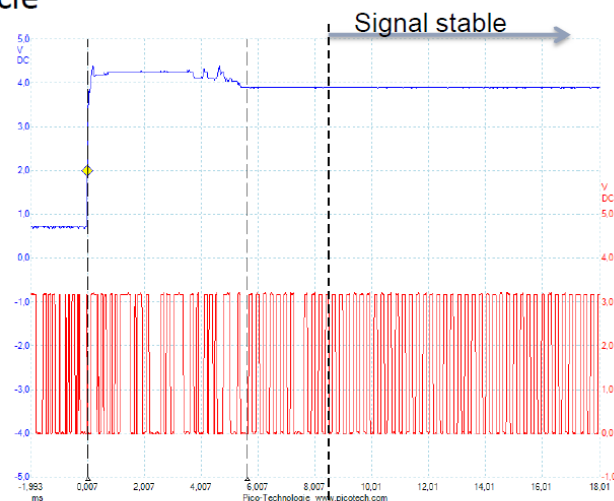
Power-on timing Receive & Transmit

Test signal: 2kHz, 50% duty cycle

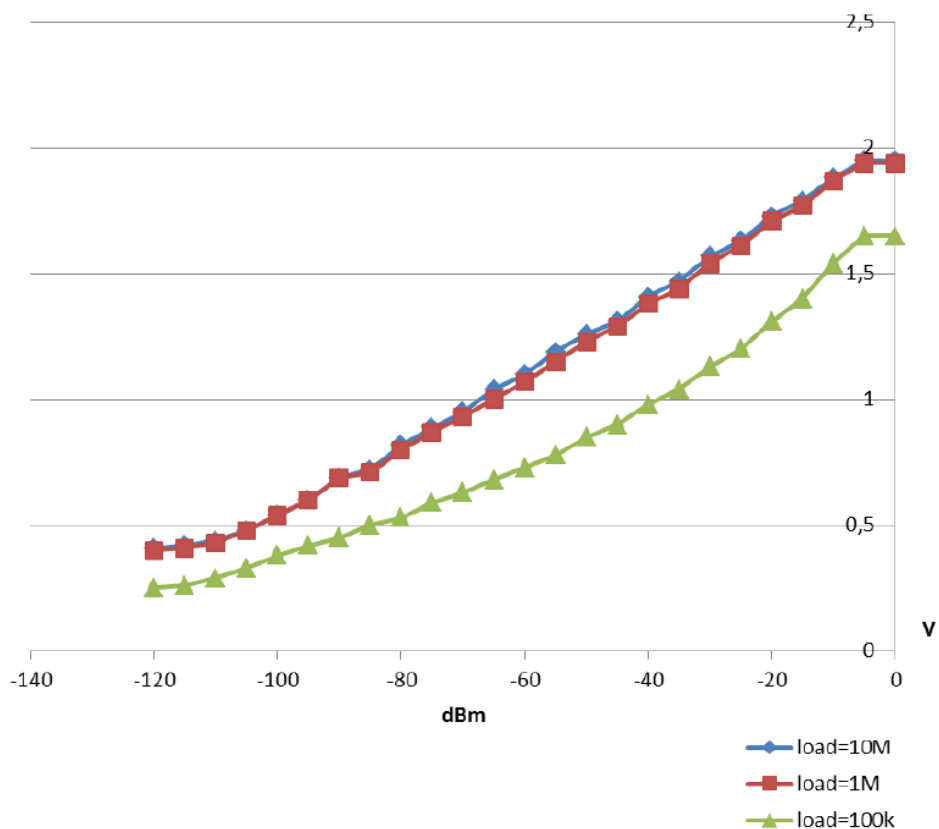
Ch_1 (blue): Power-Supply

Ch_2 (red): Data

-> Startup time: < 9 ms

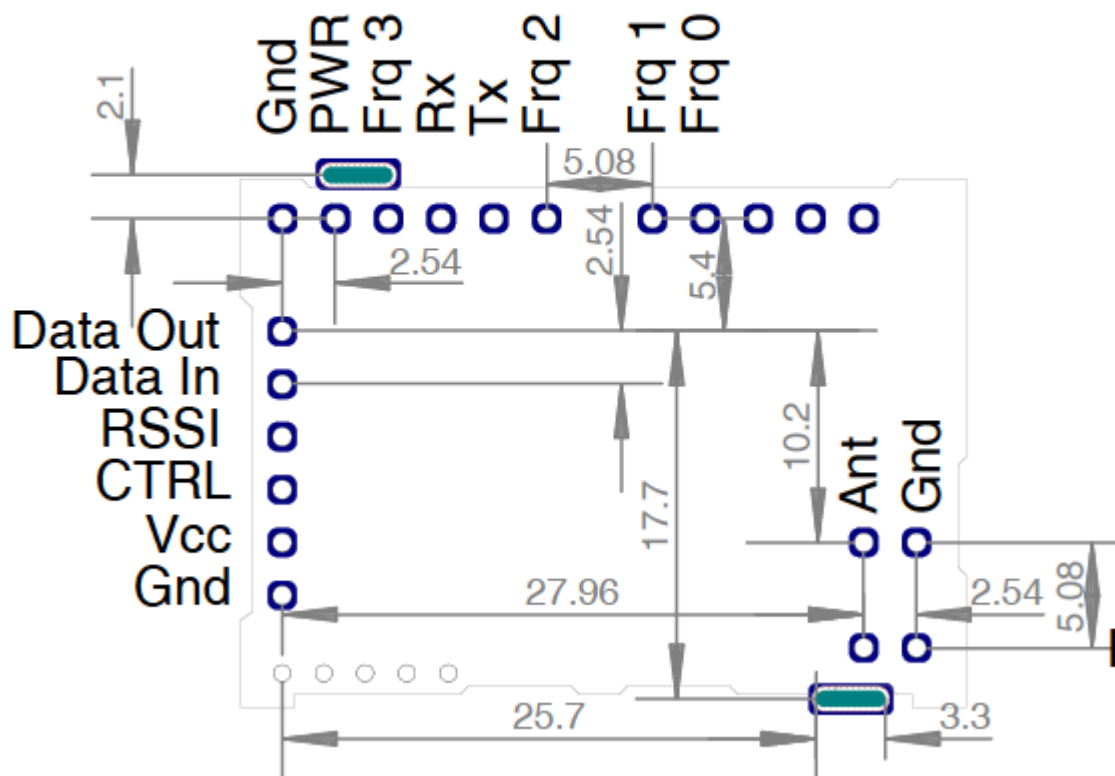


RSSI Output (NX 1)



Module bottom:

Gamma NX-1



Programming via FRQ0-3 Pins:

FREQ0	FREQ1	FREQ2	FREQ3	vorprogrammierte Auswahl
1	1	1	1	1, Default
0	1	1	1	2
1	0	1	1	3
0	1	0	1	4
...	...	...	...	...
0	0	0	0	16

1	457.700 MHz
2	457.725 MHz
3	457.750 MHz
4	457.800 MHz
5	457.850 MHz
6	457.975 MHz
7	458.000 MHz
8	462.200 MHz
9	462.225 MHz
10	462.250 MHz
11	462.275 MHz
12	462.300 MHz
13	462.325 MHz
14	462.350 MHz
15	462.375 MHz
16	462.500 MHz

Further Specifications:

Parameter	Min	Typ	Max	Unit
Vin	2.5		12	V
Logic Input High Voltage	2		12	V
Logic Input Low Voltage			0.2/0.3*	V
Logic Output High Voltage	2/3*			V
Logic Output Low Voltage			0.3	V
*Low Power/ High Power				

Stand: Nov. 2021

Änderungen vorbehalten

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