EGN Elektronik

RF Wireless Modules

# NTX05CN3 315MHz FSK/GFSK RF Transmitter Module

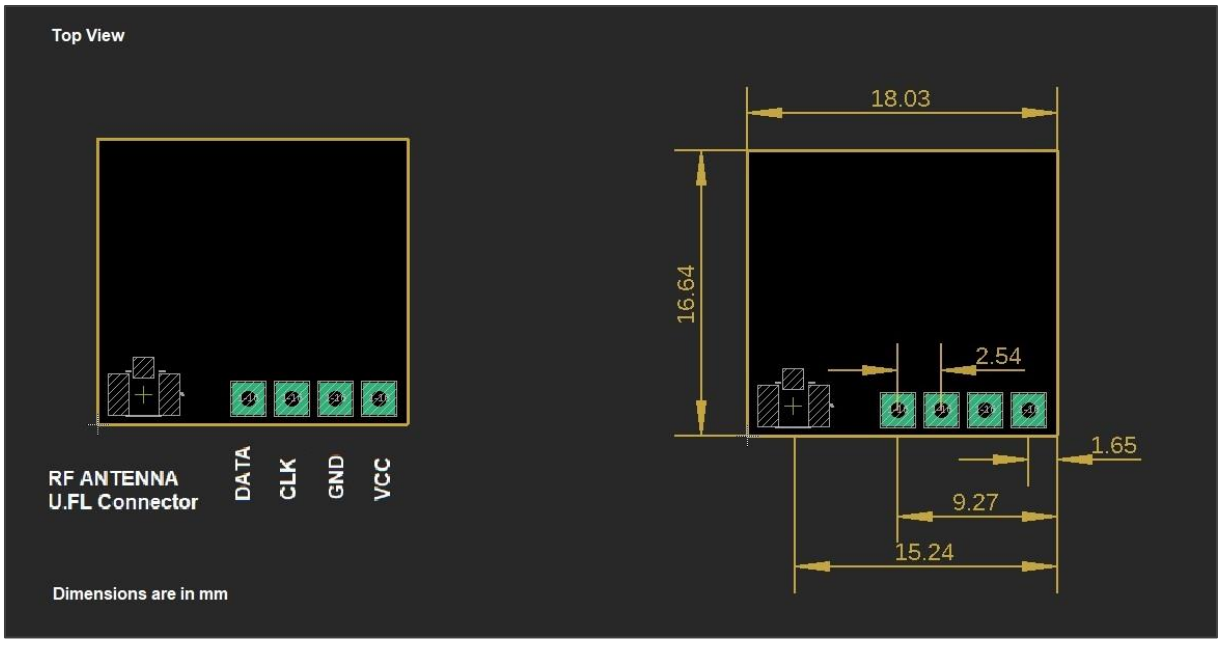
# (with U.FL RF Antenna Connector)



**Brief**

NTX05CN3 is a small size, compact, low power and easy to use 315MHz FSK/GFSK RF Transmitter module based on Cmostek Microelectronics CMT2119AW RF IC. It has same technical specifications as NTX05PI3, only difference is the U.FL RF Antenna connector instead of pin type ANT&GND connectors in NTX05PI3.

**Size and Pin Diagram**




| CONNECTOR – J1 | | |
|---|---|---|
| **Pin No** | **Pin Name** | **Pin Function** |
| CA | ANT | RF Output/Antenna |
| | | |
| J1-4 | DATA | Data |
| J1-3 | CLK | Clock (for Programming or MCU Control) |
| J1-2 | GND | 0V/Ground |
| J1-1 | VCC | Supply Input |

CLK and DATA pins can be used for programming via offline programmer or via MCU, only DATA pin is sufficient for plug and play preprogrammed standalone use without MCU.

### RF Radio Transmitter Characteristics

| Symbol | Parameter | Test Conditions | Min | Typical | Max | Unit |
|---|---|---|---|---|---|---|
| $F_{op}$ | Operational Frequency/Band | - | - | 315 | - | MHz |
| $P_{RFOUT(max)}$ | Maximum Output Power | | - | 13 | - | dBm |
| $P_{RFOUT(min)}$ | Minimum Output Power | | - | -10 | - | dBm |
| $P_{STEP}$ | Output Power Step Size | | - | 1 | - | dB |
| $t_{RAMP}$ | PA Ramping Time | | 0 | - | 1024 | us |
| $SR_{FSK}$ | FSK Symbol Rate | | 0.5 | - | 100 | ksps |
| $F_{dev}$ | (G)FSK Deviation Range | | 1 | - | 200 | kHz |
| $BT$ | Bandwidth-Time Product | GFSK Modulation | - | 0.5 | - | |
| $P_{noise}$ | Phase Noise | @100kHz offset | | -81 | | dBc/Hz |
| | | @600kHz offset | | -98 | | |
| | | @1.2MHz offset | | -107 | | |
| $H_2$ | 2nd Harmonic Level | $P_{RFOUT}$@13dBm | | -52 | | dBm |
| $H_3$ | 3rd Harmonic Level | $P_{RFOUT}$@13dBm | | -60 | | dBm |

### Electrical Specifications

| Symbol | Parameter | Test Conditions | Min | Typical | Max | Unit |
|---|---|---|---|---|---|---|
| $V_{dd}$ | Supply Voltage | - | 2.8 | 3.3 | 3.6 | V |
| $I_{dd-S}$ | Current – SLEEP mode | | - | 30 | - | nA |
| $I_{dd-PL}$ | Current – TX@0dBm | | - | 10.9 | - | mA |
| $I_{dd-PH}$ | Current – TX@10dBm | | - | 23.8 | - | mA |
| $T_{op}$ | Operational Temperature | - | -40 | - | +85 | ºC |

### Absolute Maximum Ratings

"Absolute maximum ratings" may cause permanent damage to the device and is a stress rating only, functional operation of the device under these conditions for extended periods may affect device reliability.

| Symbol | Parameter | Max | Unit |
|---|---|---|---|
| $VDD$ | Supply voltage | 3.6 | V |
| $T_{op}$ | Operational Temperature | -40~+85 | ºC |
| $T_{stg}$ | Storage Temperature | -50~+150 | ºC |
| $ESD$ | ESD Rating | 2(HBM) | kV |

### References

1) CMT2119AW Datasheet - https://www.egn-elektronik.com.tr/EN/Datasheets/CMT2119AW.pdf