

2.4GHz Wireless Data Transceiver Module

Chip-Antenna Type

NR-D24ZAM Ver 7.0

Related Products : NR-D24ZCM(2.4GHz Wireless Data Transceiver Module(Connector))

NR-D24ZE(2.4GHz Wireless Data Transceiver Unit)



1. 2.4GHz Wireless Data Transceiver Module (Chip-Antenna Include)

- NR-D24ZAM module is a wireless Data transceiver module that can Receive/Transmit computer Data and control electronic devices Data, Sensor Data.
- Do Not Use Other Control CPU (MCU) Because Include MCU (8051) In Main-Chip
- Very Easy Interfacing User MCU (UART Port TTL Level Communication)
(please Use The ISP Port, if you want High Speed Data Communication)

2. Features.

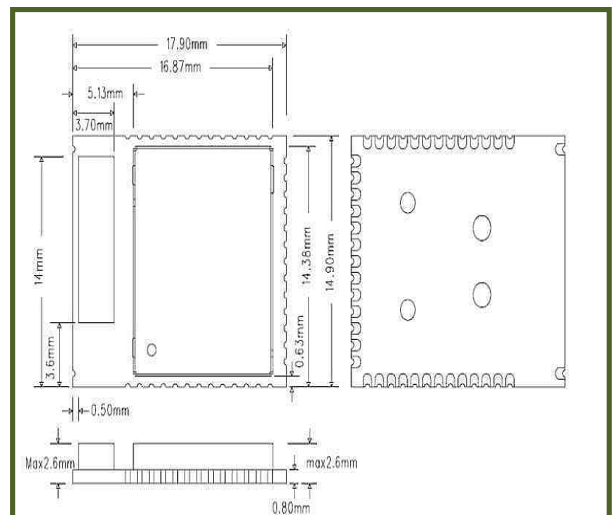
- You Can High Speed data Communication (2.4GHz Band Module).
- Use the UART Port TTL Level Interface (Do Not Use Manchester Coding).
- Working Low Voltage power (DC 3.3V).

3. Applications

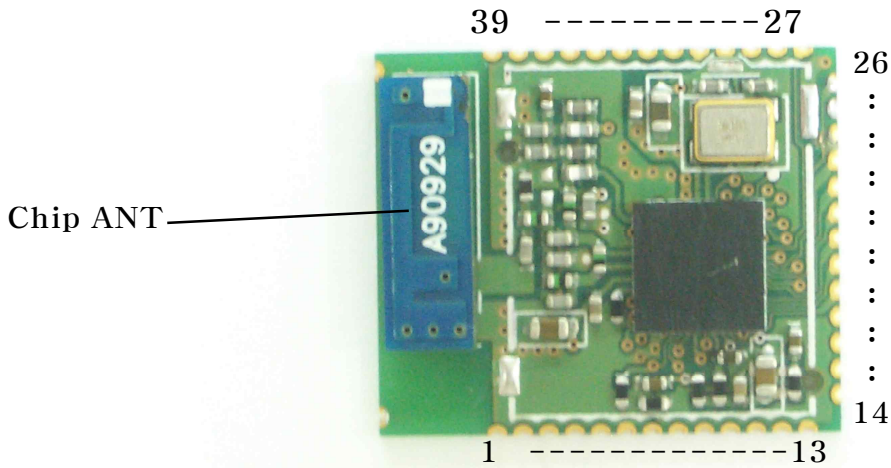
- Remote Controller for TV, Lamp, Parking Area and Auto Door.
- Office Automation, Home Automation.
- Sensor Controller factory Automation and Device Remote Control.
- Computer Data Wireless Communication.

4. 2.4GHz Wireless Data Transceiver Module Specification & Size.

| Item | Specification |
|-----------------|---------------------------------|
| Power | DC 3.3V |
| Current | Under 35mA |
| Frequency | 2.405GHz~2.480GHz (2.480GHz) |
| Band With | 2MHz |
| RF Power | Under 10dBm |
| Interface Speed | 9600-1-8-N |
| RF Speed | 250K bps |



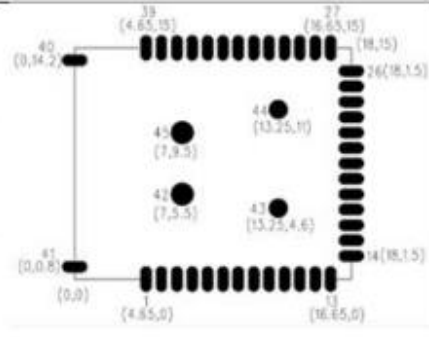

5. 2.4GHz Wireless Data Transceiver Module Pin Information.



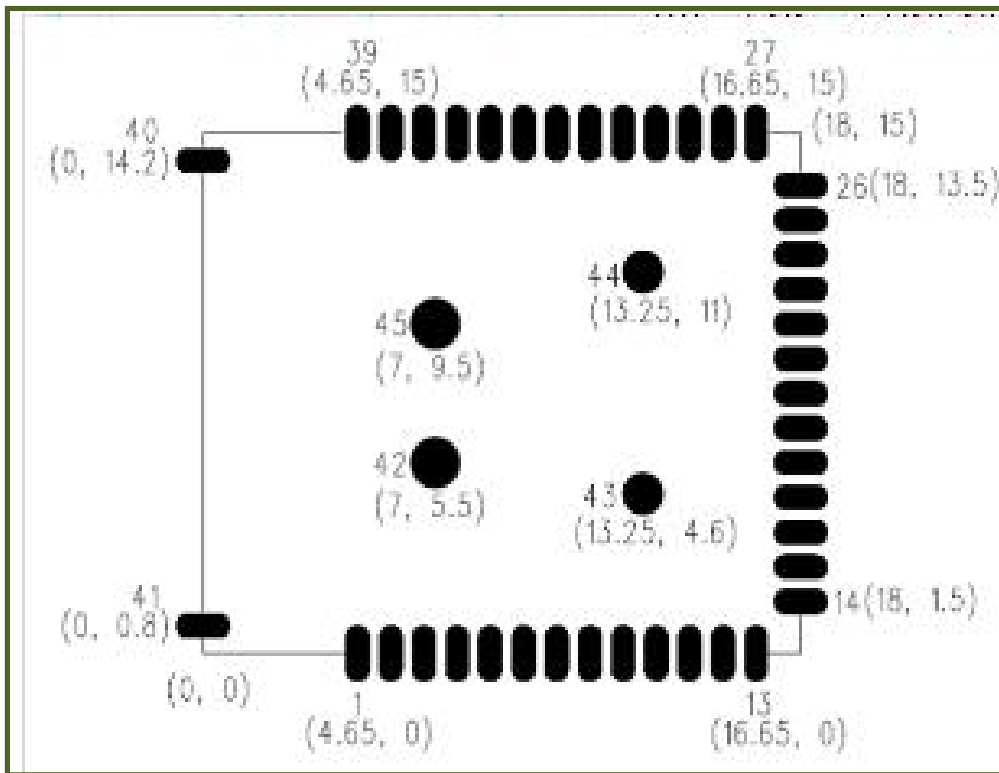
| Terminal | NAME | Inter face | I/O | Description |
|----------|-----------|------------|-----|---|
| 1 | ACH0 | Analog | I/O | Sensor ADC input |
| 2 | ACH1 | Analog | I/O | Sensor ADC input |
| 3 | ACH2 | Analog | I/O | Sensor ADC input |
| 4 | ACH3 | Analog | I/O | Sensor ADC input |
| 5 | AVDD_1.5V | Power | I/O | 1.5V Power Supply input/output |
| 6 | AGND | Ground | - | RF Ground |
| 7 | MS0 | Digital | I | Mode select |
| 8 | MS1 | Digital | I | Mode select |
| 9 | MS2 | Digital | I | Mode select |
| 10 | MSV | Digital | I | Mode select of voltage(0=1.5V) |
| 11 | RESETB | Digital | I | Reset (Active Low) |
| 12 | 3V IN | Power | I | 3V Power supply |
| 13 | DGND | Ground | - | Ground for digital core and I/O |
| 14 | P1[7] | Digital | O | Port P1.7/GPO/P0AND/TRSW/Fold/Clock/BIST Fail Indicator |
| 15 | P1[6] | Digital | B | Port P1.6/TRSWB |
| 16 | P1[5] | Digital | B | Port P1.5 |
| 17 | P1[4] | Digital | B | Port P1.4 /QUADZB/Sleep Timer OSC Buffer Input. |
| 18 | P1[3] | Digital | B | Port P1.3/QUADZA/Sleep Timer OSC Buffer Output/RTCLKOUT |
| 19 | P1[2] | Digital | B | Port P1.2 |
| 20 | P1[1] | Digital | B | Port P1.1/TXD1 |
| 21 | P1[0] | Digital | B | Port P1.0/RXD1 |
| 22 | P3[7] | Digital | B | Port P3.7/12mA Drive capability /PWM3/CTS1/SPICSN(slave only) |
| 23 | P3[6] | Digital | B | Port P3.6/12 mA Drive capability /PWM2/RTS1/SPICLK |
| 24 | P3[5] | Digital | B | Port P3.5/T1/CTS0/QUADYB/SPIDO |
| 25 | P3[4] | Digital | B | Port P3.4/T0/RTS0/QUADYA/SPIDI |
| 26 | P3[3] | Digital | B | Port P3.3/INT1(active low) |
| 27 | P3[2] | Digital | B | Port P3.2/INT0(active low) |
| 28 | P3[1] | Digital | B | Port P3.1/TXD0/QUADXB |
| 29 | P3[0] | Digital | B | Port P3.0/RXD0/QUADXA |
| 30 | DGND | Ground | - | Ground for digital core and I/O |
| 31 | DVDD_1.5V | Power | I/O | 1.5V Power Supply input/output |
| 32 | P0[7] | Digital | B | Port P0.7/I2STX_MCLK |
| 33 | P0[6] | Digital | B | Port P0.6/I2STX_BCLK |
| 34 | P0[5] | Digital | B | Port P0.5/I2STX_LRCK |
| 35 | P0[4] | Digital | B | Port P0.4/I2STX_DO |
| 36 | P0[3] | Digital | B | Port P0.3/I2SRX_MCLK |
| 37 | P0[2] | Digital | B | Port P0.2/I2SRX_BCLK |
| 38 | P0[1] | Digital | B | Port P0.1/I2SRX_LRCK |
| 39 | P0[0] | Digital | B | Port P0.0/I2SRX_DI |
| 40 | NC | NC | - | No Connection |
| 41 | NC | NC | - | No Connection |
| 42 | AGND | Ground | - | RF Ground |
| 43 | DGND | Ground | - | Ground for digital core and I/O |
| 44 | DGND | Ground | - | Ground for digital core and I/O |
| 45 | AGND | Ground | - | RF Ground |




Pin 40~45 : PCB Pattern Pad.

6. 2.4GHz Wireless Data Transceiver Module PCB Pattern & PAD Information.

| Soldering pad | Pad type | Pad size | Mask open size | Result |
|---|---|-------------------|-------------------------------|-----------------------------|
|  |  | 0.7mm(W)*1.7mm(L) | 0.665mm(W) * 1.870mm(L) | W: 95% OPEN L: 110% OPEN |
| |  | Φ1.5mm | Φ0.7mm | 46.7% OPEN |
| |  | Φ1.25mm | Φ0.5mm | 40% OPEN |

Note1) Solder mask thickness : 0.12t(0.12mm)

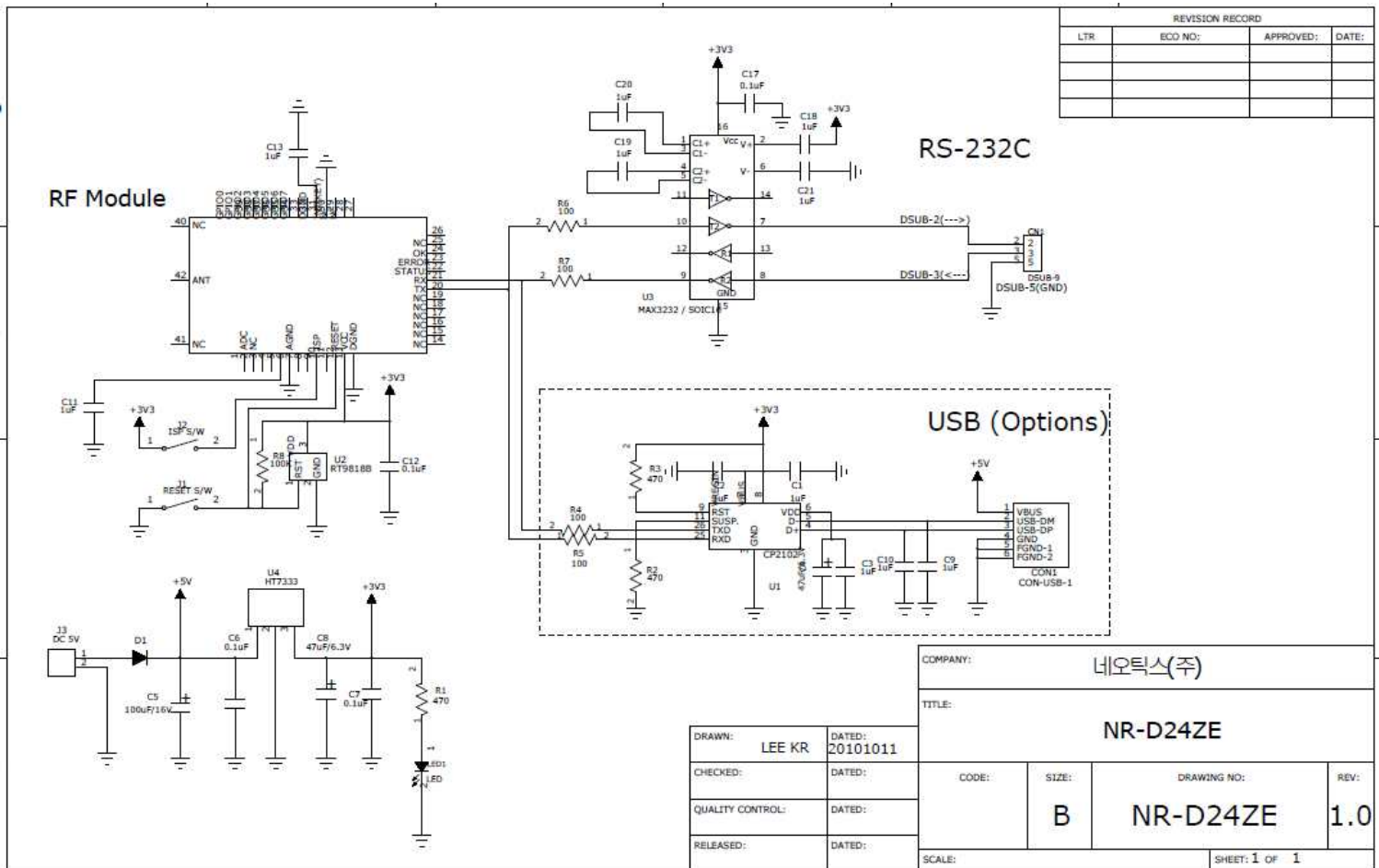


-  Pads of pin 1~41; (W*L: 0.7*1.6mm)
-  Pads of pin 42, 45; (R=0.75, Circle)
-  Pads of pin 43, 44; (R=0.625, Circle)

7. 2.4GHz Wireless Data Transceiver Module PCB Specification.

| RF Characteristics | | | | |
|---|-----|--|--------|------|
| RF Frequency Range | 2.4 | | 2.4835 | GHz |
| Transmit data rate(normal mode) | | 250 | | kbps |
| Transmit data rate(turbo mode) | | 500 | | kbps |
| Transmit data rate(premium mode) | | 1000 | | kbps |
| Transmit chip rate | | 2000 | | kbps |
| Maximum output power | | | 8 | dBm |
| Programmable output power range | | 30 | | dB |
| Receiver sensitivity Normal mode Turbo mode Premium mode | | -98 -95 -91 | | dBm |
| Adjacent Channel Rejection +5MHz -5MHz | | 49 48.8 | | dBc |
| Alternate Channel Rejection +10MHz -10MHz | | 56.1 56.8 | | dBc |
| Co-Channel Rejection | | -10.7 | | dBc |
| Blocking/Desensitization +/- 5 MHz +/- 10 MHz +/- 15 MHz +/- 20 MHz +/- 30 MHz +/- 50 MHz | | -45 -42 -48 -40 -43 -46 | | dBm |
| Spurious Emission(30Hz~1GHz) | | -60 | | dBm |
| Spurious Emission(1GHz~2.5GHz) | | -40 | | dBm |
| Spurious Emission(2.5GHz~12.7GHz) | | -50 | | dBm |
| 2nd Harmonics | | -50 | | dBm |
| 3rd Harmonics | | -70 | | dBm |

8. 2.4GHz Wireless Data Transceiver Module Test Circuit.



***** Caution *****

1. Check the features first to connect with other equipment.
2. This circuit is strictly tested.
3. The developer, manufacturer or dealer is not responsible for any malfunctioning/damage caused by connection with other equipment.
4. Appropriate permit /approval is required for some products utilizing this module, depending on functions and usages.

● For more information and inquiry, please refer to the sites below.

R&D : <http://www.neotics.co.kr>
 Sales : <http://www.logiccamp.co.kr>

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