

# MT7976DAN Datasheet

802.11ax Wi-Fi RF Chip

Version: 1.4  
Release date: 2021/11/15

## 1 System Overview

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### 1.1 Functional Block Diagram

MT7976DAN is an IEEE WiFi 6 MIMO RF chip which contains 2.4 GHz Wi-Fi transceiver front-ends and 5 GHz Wi-Fi transceiver front-ends in a DRQFN package. Simplified block diagram and how MT7976DAN is used are shown in [Figure 1-1](#). The top control logics control each subsystem independently. Each subsystem also has dedicated LDOs. A thermal sensor and a low-speed ADC (Analog-to-Digital Converter) are provided to monitor MT7976DAN's temperature variation. MT7976DAN has its dedicated crystal oscillator (XO) circuit. Besides, XO circuit provides an external clock source to other chips in the platform.

The transceiver front-ends are on MT7976DAN while the ADC/DAC (Analog-to-Digital Converter/Digital-to-Analog Converter) is in the companion modem chip. The interface drivers/receiver buffers are designed to drive PCB trace loading.

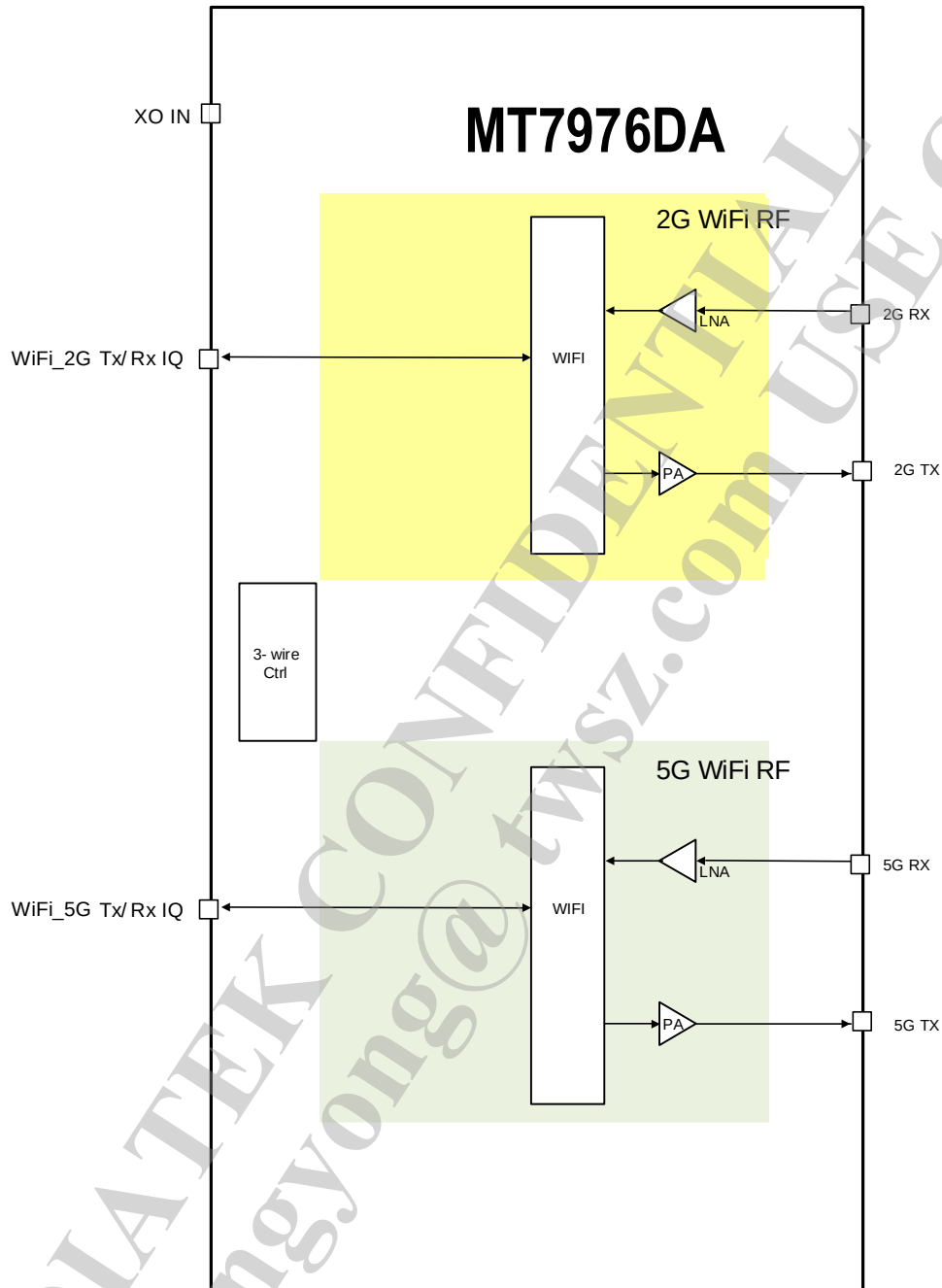


Figure 1-1. MT7976DAN block diagram

## 1.2 Features

- MT7976DAN is an IEEE WiFi 6 MIMO RF chip which contains 2.4 GHz Wi-Fi transceiver front-ends and 5 GHz Wi-Fi transceiver front-ends in a DRQFN package.

### 1.2.1 Wi-Fi Transceiver

#### WLAN

- Dual-band (2.4GHz and 5/6GHz) MIMO 802.11 a/b/g/n/ac/ax RF, 20/40/80/160MHz bandwidth
- Built-in calibrations for PVT variation
- Supports external PA and LNA for WiFi-2.4GHz and WiFi-5/6GHz.

**Figure 2-1. MT7976DAN pin definition**

## 2.2 IO Definitions

The IO definitions used in Table 2-1 are listed below.

**Table 2-1. I/O definitions**

| Pad attribute |                                                 |
|---------------|-------------------------------------------------|
| AI            | Analog input (excluding pad circuitry)          |
| AO            | Analog output (excluding pad circuitry)         |
| AIO           | Analog bidirectional (excluding pad circuitry)  |
| DIO           | Bidirectional digital with CMOS input           |
| DI            | Digital input (CMOS)                            |
| DO            | Digital output (CMOS)                           |
| Z             | High-impedance (high-Z) output                  |
| NP            | No internal pull                                |
| PU            | Internal pull-high                              |
| PD            | Internal pull-low                               |
| ADIO          | Analog and digital IO (excluding pad circuitry) |
| Power         | Voltage supply                                  |
| GND           | Ground                                          |
| NC            | No connection                                   |

## 2.3 Pin Definitions

Details pin descriptions of MT7976DAN are listed in the following table.

| DRQFN                                                                                                                                                  | Pin Name         | Pin description            | PU/PD | I/O   | Supply domain |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------|-------|-------|---------------|
| <b>GND pins</b>                                                                                                                                        |                  |                            |       |       |               |
| 4,5,10,11,<br>14,29,41,42,<br>45,48,51,54,<br>57,60,63,66,<br>69,74,75,81,<br>82,95,98,101,<br>107,108,<br>113,114,<br>119,120,<br>125,126,<br>127,140 | GND              | GND                        | N/A   | GND   |               |
|                                                                                                                                                        |                  |                            |       |       |               |
|                                                                                                                                                        |                  |                            |       |       |               |
|                                                                                                                                                        |                  |                            |       |       |               |
| 1,3,9,31,<br>32,72,73,103,<br>104,110,116,<br>122,144                                                                                                  | NC               | NC                         | N/A   | NC    |               |
|                                                                                                                                                        |                  |                            |       |       |               |
| 79                                                                                                                                                     | XO_IN            | Crystal positive input     | N/A   | AI    |               |
| 78                                                                                                                                                     | XO_INB           | Crystal negative input     | N/A   | AI    |               |
| 77                                                                                                                                                     | XO_BUF_IN        | external clock input       | N/A   | AI    |               |
| 80                                                                                                                                                     | AVDD33_XO        | XO 3.3v power supply       | N/A   | Power |               |
| 27                                                                                                                                                     | AVDD33_XOBUF     | XO 3.3v power supply       | N/A   | Power |               |
| 76                                                                                                                                                     | XO_COCLK         | XTAL buffered clock output | N/A   | AO    |               |
| 30                                                                                                                                                     | XO_OUT           | XTAL buffered clock output | N/A   | AO    |               |
| <b>WiFi Power supply</b>                                                                                                                               |                  |                            |       |       |               |
| 13                                                                                                                                                     | AVDD18_WF0_PA_G  | RF 1.8v power supply       | N/A   | Power |               |
| 7                                                                                                                                                      | AVDD18_WF1_PA_G  | RF 1.8v power supply       | N/A   | Power |               |
| 143                                                                                                                                                    | AVDD18_WF0_TX_GA | RF 1.8v power supply       | N/A   | Power |               |
| 142                                                                                                                                                    | AVDD33_WF0_TX_GA | RF 3.3v power supply       | N/A   | Power |               |
| 124                                                                                                                                                    | AVDD18_WF2_PA_A  | RF 1.8v power supply       | N/A   | Power |               |
| 118                                                                                                                                                    | AVDD18_WF3_PA_A  | RF 1.8v power supply       | N/A   | Power |               |
| 112                                                                                                                                                    | AVDD18_WF4_PA_A  | RF 1.8v power supply       | N/A   | Power |               |
| 106                                                                                                                                                    | AVDD18_WF3_TX_GA | RF 1.8v power supply       | N/A   | Power |               |
| 105                                                                                                                                                    | AVDD33_WF3_TX_GA | RF 3.3v power supply       | N/A   | Power |               |
| 141                                                                                                                                                    | AVDD33_WF0_TOP   | RF 3.3v power supply       | N/A   | Power |               |

|                                |                |                           |     |       |  |
|--------------------------------|----------------|---------------------------|-----|-------|--|
| 138                            | AVDD18_WF0_DIG | RF 1.8v power supply      | N/A | Power |  |
| 139                            | AVDD18_WF0_TOP | RF 1.8v power supply      | N/A | Power |  |
| 99                             | AVDD18_WF3_DIG | RF 1.8v power supply      | N/A | Power |  |
| 100                            | AVDD18_WF3_TOP | RF 1.8v power supply      | N/A | Power |  |
| 102                            | AVDD33_WF3_TOP | RF 3.3v power supply      | N/A | Power |  |
| 97                             | AVDD18_WF0_SX  | RF 1.8v power supply      | N/A | Power |  |
| 96                             | AVDD18_WF3_SX  | RF 1.8v power supply      | N/A | Power |  |
| 94                             | AVDD33_WF_SX   | RF 3.3v power supply      | N/A | Power |  |
| 15                             | AVDD18_WF0_IO  | RF 1.8v power supply      | N/A | Power |  |
| 28                             | AVDD33_ESD     | RF 3.3v power supply      | N/A | Power |  |
| WIFI Radio Frequency interface |                |                           |     |       |  |
| 137                            | PDET0          | External TSSI DC input    | N/A | AI    |  |
| 136                            | PDET1          | External TSSI DC input    | N/A | AI    |  |
| 135                            | PDET2          | External TSSI DC input    | N/A | AI    |  |
| 134                            | PDET3          | External TSSI DC input    | N/A | AI    |  |
| 133                            | PDET4          | External TSSI DC input    |     |       |  |
| 123                            | WF2_A_RFIO     | RF A-band RF port         | N/A | AIO   |  |
| 117                            | WF3_A_RFIO     | RF A-band RF port         | N/A | AIO   |  |
| 111                            | WF4_A_RFIO     | RF A-band RF port         | N/A | AIO   |  |
| 6                              | WF1_TXG_RFIO   | RF G-band RF port         | N/A | AIO   |  |
| 12                             | WF0_TXG_RFIO   | RF G-band RF port         | N/A | AIO   |  |
| 8                              | WF0_RXG        | G-band External LNA input | N/A | AI    |  |
| 2                              | WF1_RXG        | G-band External LNA input | N/A | AI    |  |
| 121                            | WF2_RXA        | A-band External LNA input | N/A | AI    |  |
| 115                            | WF3_RXA        | A-band External LNA input | N/A | AI    |  |
| 109                            | WF4_RXA        | A-band External LNA input | N/A | AI    |  |
| WIFI Analog interface          |                |                           |     |       |  |
| 47                             | WF0_IP         | WF0 IF TRX IQ signals     | N/A | AIO   |  |
| 46                             | WF0_IN         | WF0 IF TRX IQ signals     | N/A | AIO   |  |
| 44                             | WF0_QP         | WF0 IF TRX IQ signals     | N/A | AIO   |  |
| 43                             | WF0_QN         | WF0 IF TRX IQ signals     | N/A | AIO   |  |
| 53                             | WF1_IP         | WF1 IF TRX IQ signals     | N/A | AIO   |  |
| 52                             | WF1_IN         | WF1 IF TRX IQ signals     | N/A | AIO   |  |
| 50                             | WF1_QP         | WF1 IF TRX IQ signals     | N/A | AIO   |  |
| 49                             | WF1_QN         | WF1 IF TRX IQ signals     | N/A | AIO   |  |
| 59                             | WF2_IP         | WF2 IF TRX IQ signals     | N/A | AIO   |  |
| 58                             | WF2_IN         | WF2 IF TRX IQ signals     | N/A | AIO   |  |



|             |                   |                                        |       |     |        |
|-------------|-------------------|----------------------------------------|-------|-----|--------|
| 56          | WF2_QP            | WF2 IF TRX IQ signals                  | N/A   | AIO |        |
| 55          | WF2_QN            | WF2 IF TRX IQ signals                  | N/A   | AIO |        |
| 65          | WF3_IP            | WF3 IF TRX IQ signals                  | N/A   | AIO |        |
| 64          | WF3_IN            | WF3 IF TRX IQ signals                  | N/A   | AIO |        |
| 62          | WF3_QP            | WF3 IF TRX IQ signals                  | N/A   | AIO |        |
| 61          | WF3_QN            | WF3 IF TRX IQ signals                  | N/A   | AIO |        |
| 71          | WF4_IP            | WF4 IF TRX IQ signals                  | N/A   | AIO |        |
| 70          | WF4_IN            | WF4 IF TRX IQ signals                  | N/A   | AIO |        |
| 68          | WF4_QP            | WF4 IF TRX IQ signals                  | N/A   | AIO |        |
| 67          | WF4_QN            | WF4 IF TRX IQ signals                  | N/A   | AIO |        |
| Digital IOs |                   |                                        |       |     |        |
| 19          | PAD_DIG_RESETB    | Hardware reset from companion modem    | PU/PD | DI  | DVDDIO |
| 18          | PAD_CBA_RESETB    | software reset from companion modem    | PU/PD | DI  | DVDDIO |
| 20          | PAD_XO_REQ        | XO enable control from companion modem | PU/PD | DI  | DVDDIO |
| 21          | PAD_SLP_CLK       | Sleep CLK input/output                 | PU/PD | DIO | DVDDIO |
| 22          | PAD_TOP_DATA      | TOP 2-wire data signal                 | PU/PD | DIO | DVDDIO |
| 17          | PAD_TOP_CLK       | TOP 2-wire clock signal                | PU/PD | DI  | DVDDIO |
| 40          | PAD_WF_HB10       | WF high speed control bus              | PU/PD | DIO | DVDDIO |
| 39          | PAD_WF_HB9        | WF high speed control bus              | PU/PD | DIO | DVDDIO |
| 38          | PAD_WF_HB8        | WF high speed control bus              | PU/PD | DIO | DVDDIO |
| 37          | PAD_WF_HB7        | WF high speed control bus              | PU/PD | DIO | DVDDIO |
| 36          | PAD_WF_HB6        | WF high speed control bus              | PU/PD | DIO | DVDDIO |
| 35          | PAD_WF_HB5        | WF high speed control bus              | PU/PD | DIO | DVDDIO |
| 26          | PAD_WF_HB4        | WF high speed control bus              | PU/PD | DIO | DVDDIO |
| 25          | PAD_WF_HB3        | WF high speed control bus              | PU/PD | DIO | DVDDIO |
| 24          | PAD_WF_HB2        | WF high speed control bus              | PU/PD | DIO | DVDDIO |
| 23          | PAD_WF_HB1        | WF high speed control bus              | PU/PD | DIO | DVDDIO |
| 34          | PAD_WF_HB0_B      | WF high speed control bus              | PU/PD | DIO | DVDDIO |
| 33          | PAD_WF_HB0        | WF high speed control bus              | PU/PD | DIO | DVDDIO |
| 16          | PAD_PMU_POR_B_V18 | Chip enable from companion modem       | PU/PD | DI  | DVDDIO |
| FEM IOs     |                   |                                        |       |     |        |
| 83          | ANTSEL_5          | FEM control                            | PU/PD | DIO | DVDDIO |
| 84          | ANTSEL_6          | FEM control                            | PU/PD | DIO | DVDDIO |
| 85          | ANTSEL_7          | FEM control                            | PU/PD | DIO | DVDDIO |
| 86          | ANTSEL_8          | FEM control                            | PU/PD | DIO | DVDDIO |
| 87          | ANTSEL_9          | FEM control                            | PU/PD | DIO | DVDDIO |

|     |           |             |       |     |        |
|-----|-----------|-------------|-------|-----|--------|
| 88  | ANTSEL_10 | FEM control | PU/PD | DIO | DVDDIO |
| 89  | ANTSEL_11 | FEM control | PU/PD | DIO | DVDDIO |
| 90  | ANTSEL_12 | FEM control | PU/PD | DIO | DVDDIO |
| 91  | ANTSEL_13 | FEM control | PU/PD | DIO | DVDDIO |
| 92  | ANTSEL_14 | FEM control | PU/PD | DIO | DVDDIO |
| 93  | ANTSEL_15 | FEM control | PU/PD | DIO | DVDDIO |
| 128 | ANTSEL_4  | FEM control | PU/PD | DIO | DVDDIO |
| 129 | ANTSEL_3  | FEM control | PU/PD | DIO | DVDDIO |
| 130 | ANTSEL_2  | FEM control | PU/PD | DIO | DVDDIO |
| 131 | ANTSEL_1  | FEM control | PU/PD | DIO | DVDDIO |
| 132 | ANTSEL_0  | FEM control | PU/PD | DIO | DVDDIO |
|     |           |             |       |     |        |
|     |           |             |       |     |        |
|     |           |             |       |     |        |

**Table 2-2** MT7976DAN common pin descriptions

### 3 Electrical Characteristics

#### 3.1 Absolute maximum rating

| Symbol           | Parameters           | Maximum rating | Unit |
|------------------|----------------------|----------------|------|
| VDD33            | 3.3V Supply Voltage  | -0.3 to 3.6    | V    |
| VDD18            | 1.8V Supply Voltage  | -0.3 to 1.89   | V    |
| T <sub>STG</sub> | Storage Temperature  | -40 to +125    | °C   |
| VESD             | ESD protection (HBM) | 2000           | V    |
| VESD             | ESD protection (CDM) | +/- 250        | V    |

**Table 3-1** Absolute maximum rating

#### 3.2 Recommended operating range

| Symbol                | Rating                                  | MIN  | TYP | MAX  | Unit |
|-----------------------|-----------------------------------------|------|-----|------|------|
| VDD33                 | 3.3V Supply Voltage                     | 3    | 3.3 | 3.6  | V    |
| VDD18                 | 1.8V Supply voltage                     | 1.71 | 1.8 | 1.89 | V    |
| T <sub>JUNCTION</sub> | Industry junction operating temperature | -20  | 25  | 125  | °C   |
| T <sub>AMBIENT</sub>  | Ambient Temperature                     | -10  | -   | 70   | °C   |

**Table 3-2** Recommended operating range

#### 3.3 Power Supply Specifications

The following tables list the power supply requirements for VDD18 and VDD33.

**Table 3-3. AVDD18 specifications**

| Test item           | Min. | Typ. | Max. | Unit | Notes |
|---------------------|------|------|------|------|-------|
| Output voltage, VDD | 1.71 | 1.8  | 1.89 | V    |       |
| Output current      |      |      |      | mA   |       |

**Table 3-4. AVDD33 specifications**

| Test Item      | Min | Typ | Max | Unit | Notes |
|----------------|-----|-----|-----|------|-------|
| Output voltage | 3.0 | 3.3 | 3.6 | V    |       |
| Output current |     |     |     | mA   |       |

### 3.4 Digital Logic Characteristics

MT7976DAN’s timing characteristics and interface protocols are shown here, including some general comments.

#### 3.4.1 Timing Diagram Convention

Figure 3-1 shows the conventions used with timing diagram throughout this document.

| Waveform | Description                           |
|----------|---------------------------------------|
|          | Signal is changing from low to high   |
|          | Signal is changing from high to low   |
|          | Don't care or bus is driven           |
|          | Bus is changing from invalid to valid |
|          | Bus is changing from high-Z to valid  |
|          | Denotes multiple clock periods        |

Figure 3-1. Timing diagram conventions

#### 3.4.2 Rising/Falling Time Definition

Figure 3-2 is the rising and falling timing diagram. The actual signal timing curve is related to the external load conditions. See 錯誤! 找不到參照來源。 for the operating conditions of digital logics.

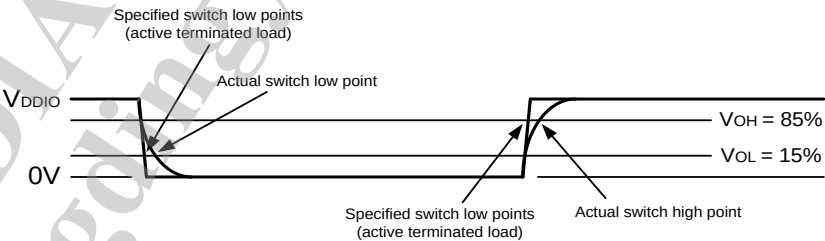


Figure 3-2. Rising and falling times diagram

**Table 3-5. Operating conditions of digital logics**

| Parameter                        | Min.    | Typ. | Max.      | Unit | Notes                           |
|----------------------------------|---------|------|-----------|------|---------------------------------|
| VDDIO, supply of IO Power        | 3       | 3.3  | 3.6       | V    |                                 |
| VIH, input logic high voltage    | 0.7*VDD |      | VDD+0.5   | V    |                                 |
| VIL, input logic low voltage     |         |      | 0.3*VDDIO | V    |                                 |
| VOH (DC), DC output high voltage | 0.7*VDD |      | VDD+0.5   | V    | VDD=min, I <sub>OH</sub> =1.5mA |
| VOL (DC), DC output low voltage  |         |      | 0.3*VDD   | V    | VDD=min, I <sub>OL</sub> =1.5mA |

### 3.4.3 Protocols

There are three main interfaces for MT7976DAN:

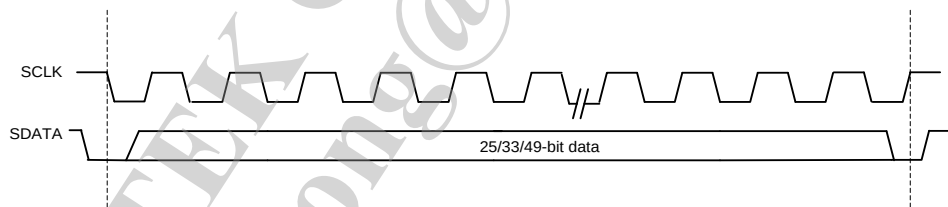
- 2-wire top control interface: Generally used for all systems (Wi-Fi)
- 12-wire bus: High-speed interface, for Wi-Fi

#### 3.4.3.1 2-Wire

The 2-wire bus of MT7976DAN is mainly used as below:

- Top control interface, the main interface to access Wi-Fi/TOP command registers

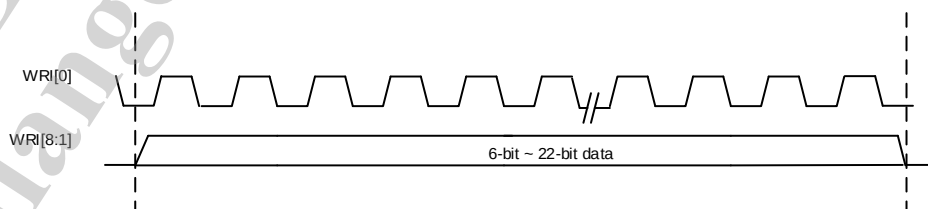
The bit number of SDATA depends on different operating conditions, as shown in [Figure 3-3](#).



**Figure 3-3. 2-wire SPI timing diagram**

#### 3.4.3.2 9-bit Bus

MT7976DAN has a dedicated 9-bit bus to control the Wi-Fi radio. The related control definitions depend on operating modes and conditions. The protocol is shown in [Figure 3-4](#).



**Figure 3-4. Wi-Fi 9-wire SPI access**

## **3.5 MT7976DAN TOP Building Blocks**

### **3.5.1 Thermal ADC**

A low-speed ADC converts the output of thermal sensor. The temperature coverage range is between -40°C and 120°C. The chip top control may do corresponding adjustment based on such temperature information.

## **3.6 Wi-Fi**

MT7976DAN Wi-Fi is a high performance and highly-integrated dual-band RF transceiver fully compliant with IEEE 802.11 a/ac/ax/b/g/n standards. MT7976DAN features a self-calibration scheme to compensate the process and temperature variation to maintain high performance. The calibration is performed automatically right after the system boot-up.

### **3.6.1 2.4GHz Wi-Fi Tx**

The 2.4GHz transmitter integrates a PA Driver with on-chip balun. The data are digitally modulated in the baseband processor from the companion chip, then up-converted to 2.4GHz RF channels through the DA converter, filter, IQ up-converter and PA Driver.

### **3.6.2 2.4GHz Wi-Fi Rx**

The 2.4GHz Wi-Fi Rx consists of a high linearity, low noise figure single-ended LNA, a quadrature passive mixer and a bandwidth-programmable low-pass filter with DC offset cancellation embedded.

### **3.6.3 2.4GHz Wi-Fi Sx**

A fractional-N frequency synthesizer is implemented to support Wi-Fi LO signal. The frequency synthesizer is capable of supporting various crystal clock frequencies. VCO operates at different freq from RF frequency to avoid any coupling with RF front-end circuitry. An LO generation is employed to divide the VCO signal and generate I/Q quadrature signals.

### **3.6.4 5/6GHz Wi-Fi Tx**

The 5/6GHz transmitter integrates a high performance PA Driver with on-chip balun. The data are digitally modulated in the baseband processor from the companion baseband chip, then up-converted to 5/6GHz RF channels through the DA converter, low-pass filter, IQ up-converter and PA Driver

### 3.6.5 5/6GHz Wi-Fi Rx

The 5/6GHz Wi-Fi Rx consists of a high linearity, low noise figure single-ended LNA, a quadrature passive mixer and a bandwidth-programmable low-pass filter with DC offset cancellation embedded.

### 3.6.6 5/6GHz Wi-Fi Sx

A-band Sx adopts LO architecture while VCO frequency is different from RF frequency to avoid TX pulling. Thus, it is composed of PLL, offset LO mixer and a repeater.

## 4 XO and Bootstrap

### 4.1 XTAL oscillator

The table below lists the requirement for the XTAL.

| Item                                           | Spec.                                                                                                                    |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Nominal Frequency                              | 40MHz                                                                                                                    |
| Size                                           | 3.2mmx2.5mm                                                                                                              |
| Operating Temperature Range                    | -40°C to +105°C                                                                                                          |
| Frequency Tolerance (FL)                       | +/- 7 ppm @ 25°C +/- 3°C                                                                                                 |
| Frequency Stability over Operating Temperature | +/- 15 ppm (referred to the value at 25°C) -40°C to +100°C<br>+/- 20 ppm (referred to the value at 25°C) 100°C to +105°C |
| Equivalent Series Resistance (ESR)             | 15 $\Omega$ max.                                                                                                         |
| Drive Level(DL)                                | 400uW max                                                                                                                |
| Shunt Capacitance (Co)                         | 3.0 pF max                                                                                                               |
| Load Capacitance (CL)                          | 10 pF                                                                                                                    |
| Trim Sensitivity Over Load(Ts)                 | 10~13 ppm/pF                                                                                                             |

**Table 4-1** XTAL oscillator requirement



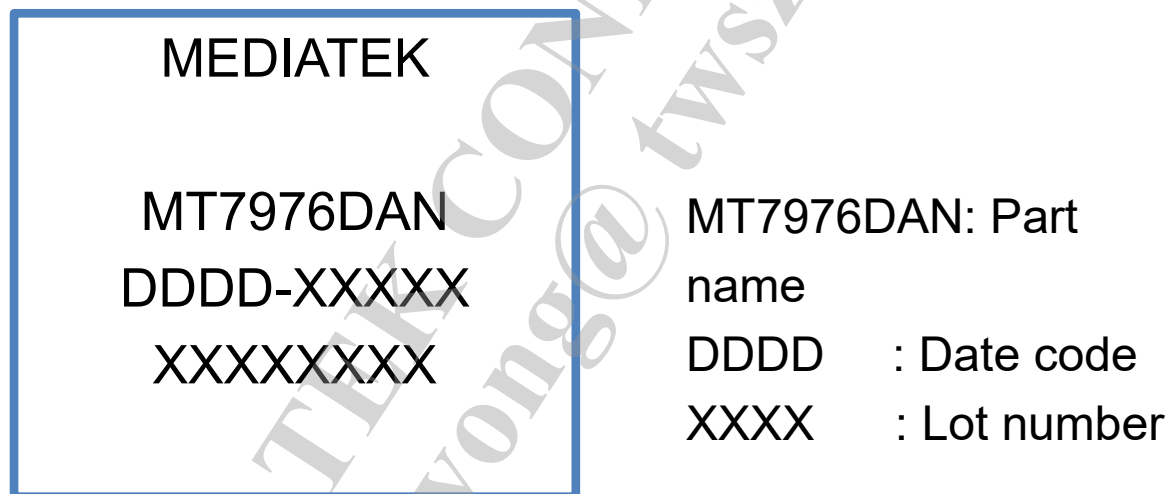
## 5 Mechanical Information

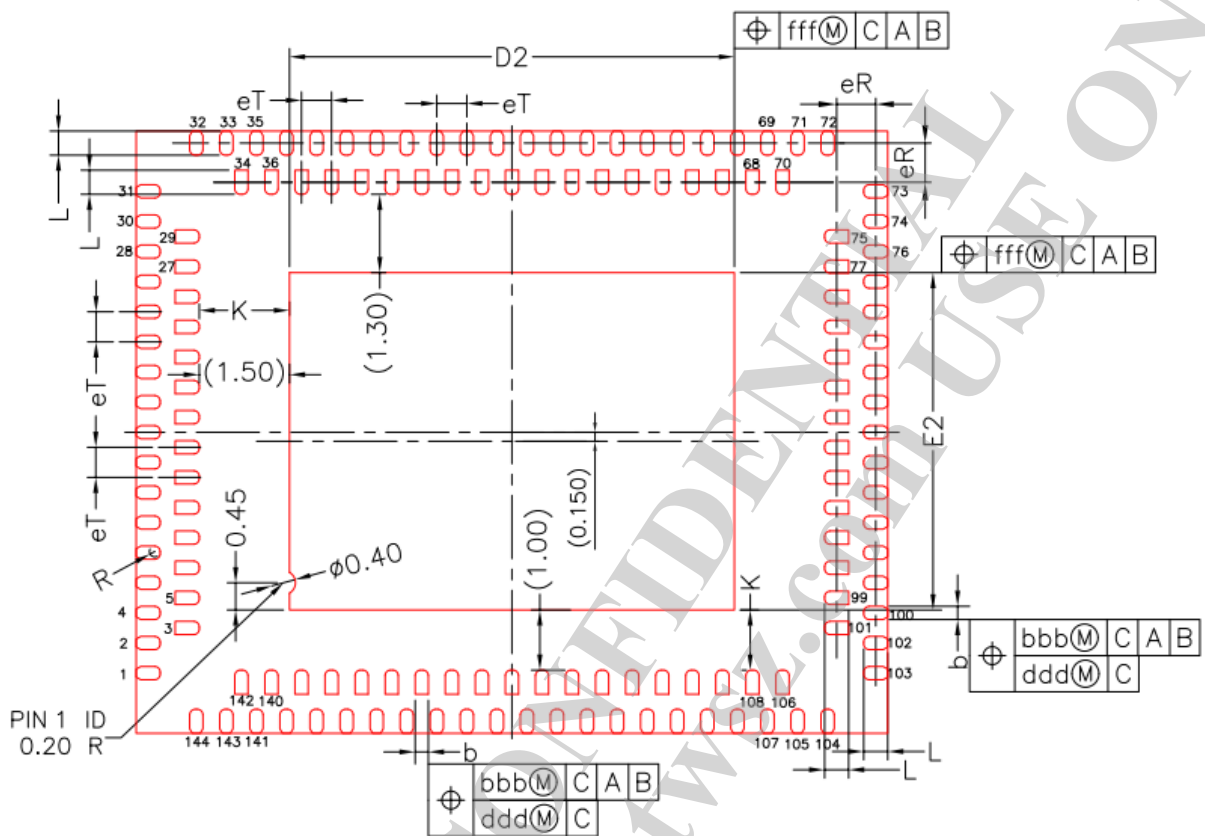
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### 5.1 Device Physical Dimension/Part Number

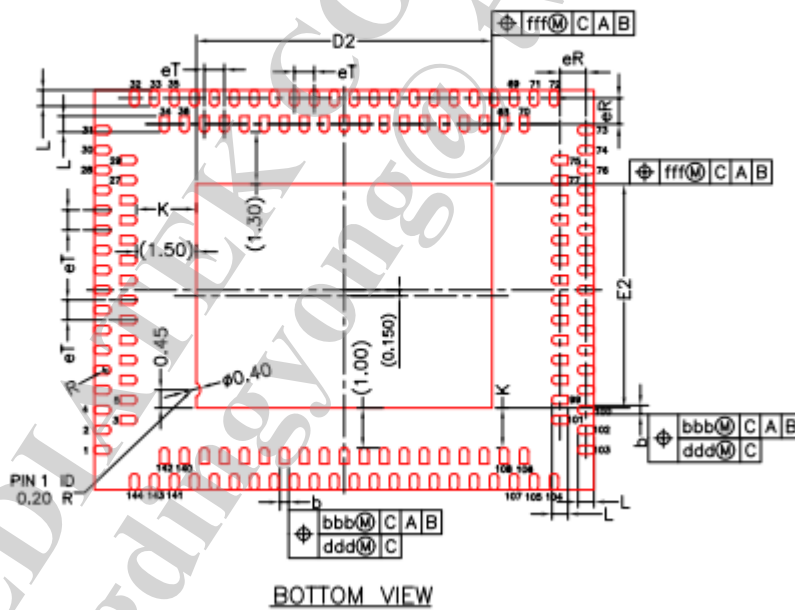
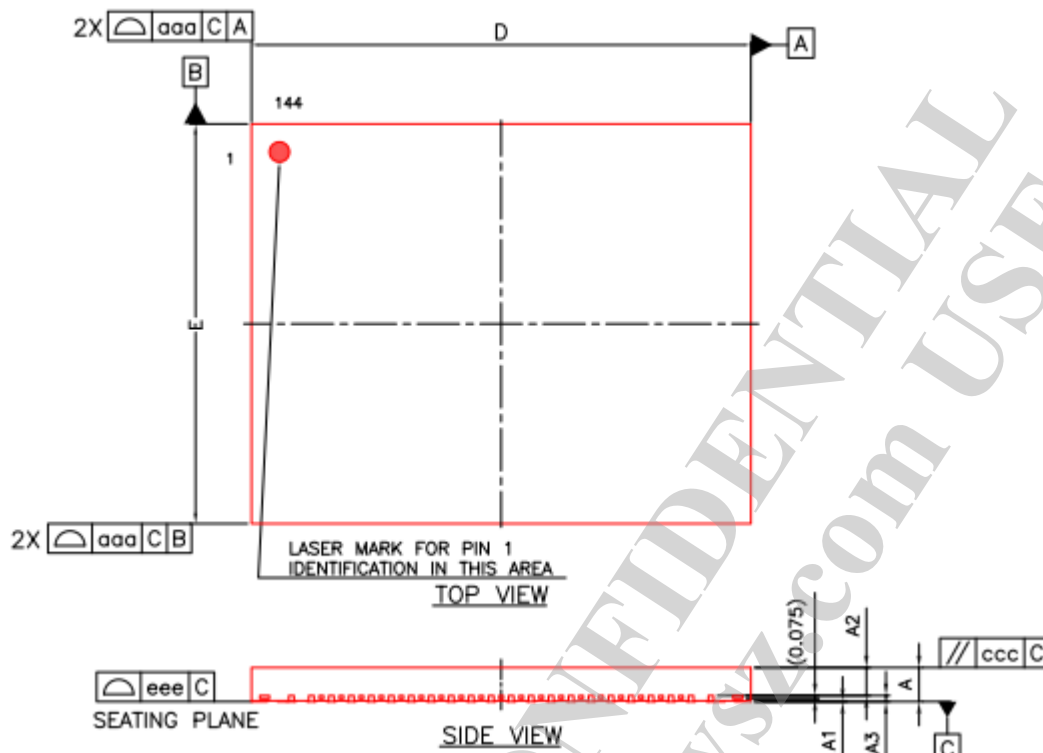
MT7976DAN uses DRQFN package. The physical dimension is shown in Figure 5-1.

Figure 5-1. Physical dimension of MT7976DAN





Bottom View



| Item                         |   | Symbol | MIN.      | NOM.  | MAX.  |
|------------------------------|---|--------|-----------|-------|-------|
| Total height                 |   | A      | 0.80      | 0.85  | 0.90  |
| Stand off                    |   | A1     | 0.00      | 0.02  | 0.05  |
| Mold thickness               |   | A2     | 0.65      | 0.70  | 0.75  |
| Lead frame thickness         |   | A3     | 0.15 REF. |       |       |
| Lead width                   |   | b      | 0.18      | 0.22  | 0.30  |
| Package size                 | X | D      | 12.40     | 12.50 | 12.60 |
|                              | Y | E      | 9.90      | 10.00 | 10.10 |
| E-PAD size                   | X | D2     | 7.30      | 7.40  | 7.50  |
|                              | Y | E2     | 5.50      | 5.60  | 5.70  |
| Lead length                  |   | L      | 0.30      | 0.40  | 0.50  |
| Lead pitch                   |   | eT     | 0.50 bsc  |       |       |
| Lead pitch                   |   | eR     | 0.65 bsc  |       |       |
| Lead arc                     |   | R      | 0.090     | ---   | 0.140 |
| Lead to E-PAD tolerance      |   | K      | 0.80      | ---   | ---   |
| Package tolerance            |   | aaa    | 0.10      |       |       |
| Package profile of a surface |   | bbb    | 0.10      |       |       |
| Lead profile of a surface    |   | ccc    | 0.10      |       |       |
| Lead position                |   | ddd    | 0.05      |       |       |
| Lead profile of a surface    |   | eee    | 0.08      |       |       |
| Epad position                |   | fff    | 0.10      |       |       |

|            |  |                                |  |                                                                                      |  |
|------------|--|--------------------------------|--|--------------------------------------------------------------------------------------|--|
| TITLE      |  | PACKAGE OUTLINE                |  |  |  |
|            |  | 144 L DR-SQFN 12.5X10 X 0.9 mm |  |                                                                                      |  |
| DWG. NO.   |  | REV.                           |  | SHEET                                                                                |  |
| MT-AP01502 |  | A                              |  | 1 OF 2                                                                               |  |
|            |  |                                |  | UNIT                                                                                 |  |
|            |  |                                |  | MM                                                                                   |  |

Figure 5-2. Physical dimension of MT7976DAN

## 5.2 Ordering Information

| Order No. | Marking   | Temperature range | Package |
|-----------|-----------|-------------------|---------|
| MT7976DAN | MT7976DAN | -10°C ~ 70°C      | DRQFN   |



### ESD CAUTION

MT7976DAN is ESD (electrostatic discharge) sensitive device and may be damaged with ESD or spike voltage. Although MT7976DAN is with built-in ESD protection circuitry, please handle with care to avoid the permanent malfunction or the performance degradation.