

**FEATURES:**

- ◆ Coverage from 70M ~ 3GHz RF
- ◆ Flexible rate 12 bit ADC/DAC
- ◆ Fully-coherent 4x4 MIMO capability, TDD/FDD
- ◆ RF ports: 50Ω Matched
- ◆ support both internal reference and external reference input
- ◆ 56 MHz for 4x4 of real-time bandwidth
- ◆ Includes DC power supply
- ◆ Dimensions: Standard FMC daughter Board

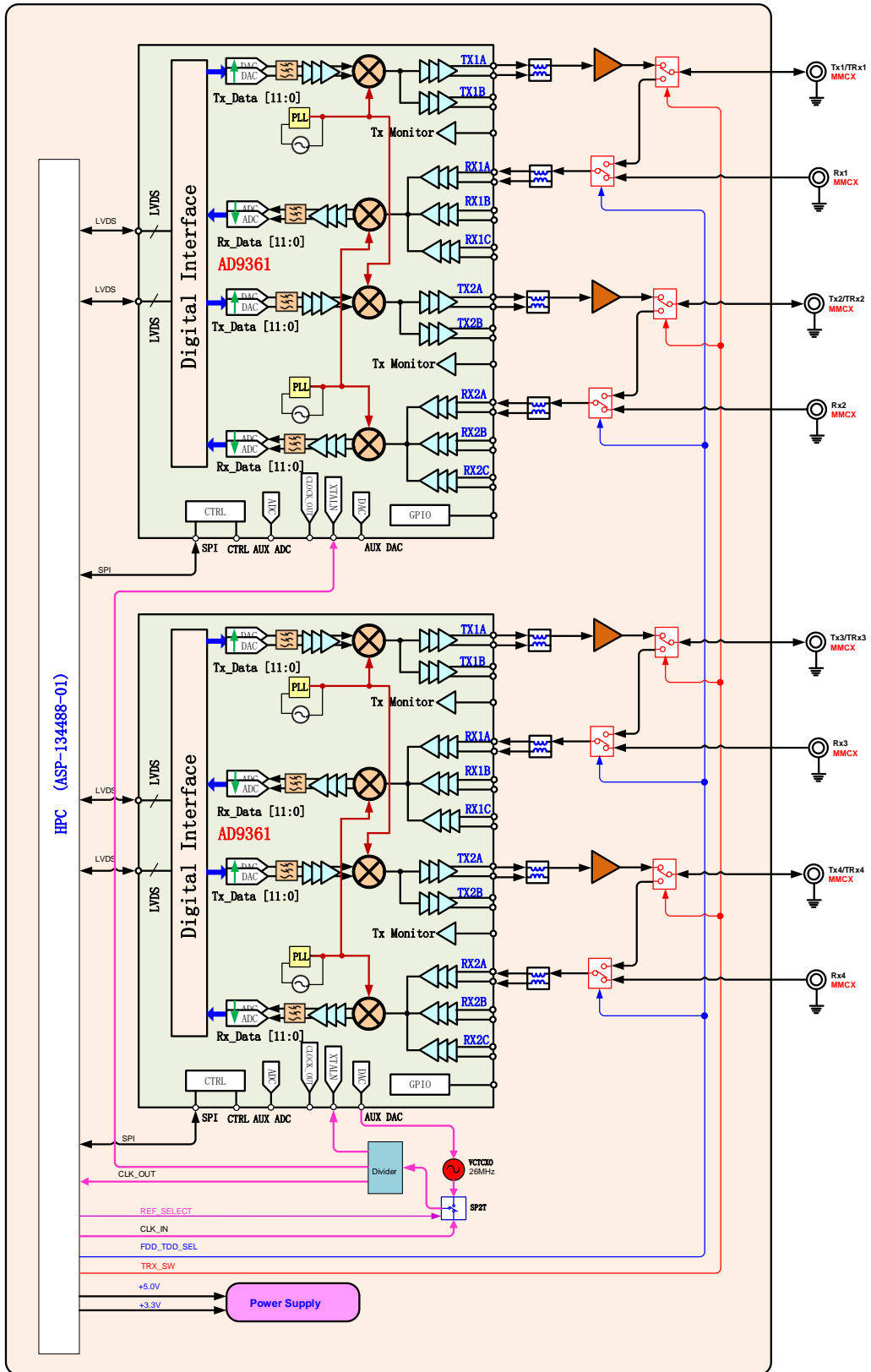
**APPLICATIONS:**

- ◆ SDR
- ◆ Cellular, e.g.: Femto-cells, Pico-cells, Small-cells, Micro-cell & etc.
- ◆ WiFi
- ◆ WiMAX
- ◆ ISM
- ◆ Proprietary & General Purpose Radios

**GENERAL DESCRIPTIONS:**

The HT7604 is an easy-to-use RF module covering 70MHz ~ 3GHz with integrated RFIC technology and FMC interface. The RF module features four receive and four transmit channels by using two Analog Devices RFIC, AD9361 to deliver a cost-effective experimentation platform with up to 32MHz (for 4x4) or up to 56 MHz (for 2x2) of instantaneous bandwidth, higher sensitivity, dynamic range, and IP3 performance, which is suitable for wide range of applications including SDR, cellular, WiFi, ISM, proprietary or general purpose radios and so on. With the HT7604, designers can prototype with the AD9361 quickly and easily.

**BLOCK DIAGRAM:**



**CHARACTERISTICS:**

|    | No. | Items                 | Specifications         | Remark                        |
|----|-----|-----------------------|------------------------|-------------------------------|
| Tx | 1   | Frequency             | 70~3000MHz             |                               |
|    | 2   | Bandwidth             | 32MHz 2x2 or 56MHz 4x4 | real-time bandwidth, tunable  |
|    | 3   | Transmission          | >10dBm                 | CW                            |
|    | 4   | EVM                   | <1.5%                  | Typical:5dBm @20MHz bandwidth |
|    | 5   | Gain Control Range    | >80dB                  |                               |
|    | 6   | Gain Step             | 0.25 dB                |                               |
|    | 7   | ACLR                  | < -45dBc               | @ 0dBm LTE output             |
|    | 8   | Spurious              | TBD                    |                               |
|    | 9   | SSB Suppression       | 35dBc                  |                               |
|    | 10  | LO Suppression        | 50dBc                  |                               |
|    | 11  | DAC Sample Rate (max) | 245.76 MS/s            |                               |
|    | 12  | DAC Resolution        | 12bits                 |                               |
| Rx | 1   | Frequency             | 70~3000MHz             |                               |
|    | 2   | Bandwidth             | 32MHz 4x4 or 56MHz 2x2 | real-time bandwidth, tunable  |
|    | 3   | Sensitivity:          | -100dBm@5MHz           | Noise Figure < 5dB            |
|    | 5   | Gain Control Range    | >60dB                  |                               |
|    | 6   | Gain Step             | 1dB                    |                               |
|    | 7   | Noise Figure          | <5dB                   | Maximum RX gain               |
|    | 8   | ADC Sample Rate (max) | 122.88MS/s             |                               |
|    | 9   | ADC Resolution        | 12bits                 |                               |
|    | 10  | ADC Wideband SFDR     | 78dBc                  |                               |
|    |     | 1                     | Voltage                | 3.3V & 5V                     |
| 2  |     | ON/OFF TIME           | <6uS                   | For TDD model                 |
| 3  |     | Duplexing Model       | TDD/FDD                |                               |

**FMC INTERFACE DEFINITION:**

**TBD**

**Truth Table:**

- ◆ Reference Selection switch

| Reference Source   | REF_SELECT |
|--------------------|------------|
| External Reference | 1          |
| Internal Reference | 0          |

- ◆ Tx-Rx switch

| Function     | TRX_SW |
|--------------|--------|
| Transmitting | 1      |
| Receiving    | 0      |

- ◆ FDD&TDD Mode switch

| Duplexing Mode | FDD_TDD_SEL |
|----------------|-------------|
| FDD            | 1           |
| TDD            | 0           |

**OUTLINE DIMENSIONS:**

