

## FEATURES:

- ◆ Coverage from 70MHz ~ 6GHz RF
- ◆ Flexible rate 12 bit ADC/DAC
- ◆ 2 Tx, 2 Rx, Half or Full Duplex
- ◆ Fully-coherent 2x2 MIMO capability
- ◆ RF ports: 50Ω Matched
- ◆ Up to 56 MHz of real-time bandwidth
- ◆ Includes DC power supply
- ◆ Dimensions: 69x38x8mm
- ◆ Interface: Bonding Finger for MEC6-150-02-L-D-RA1

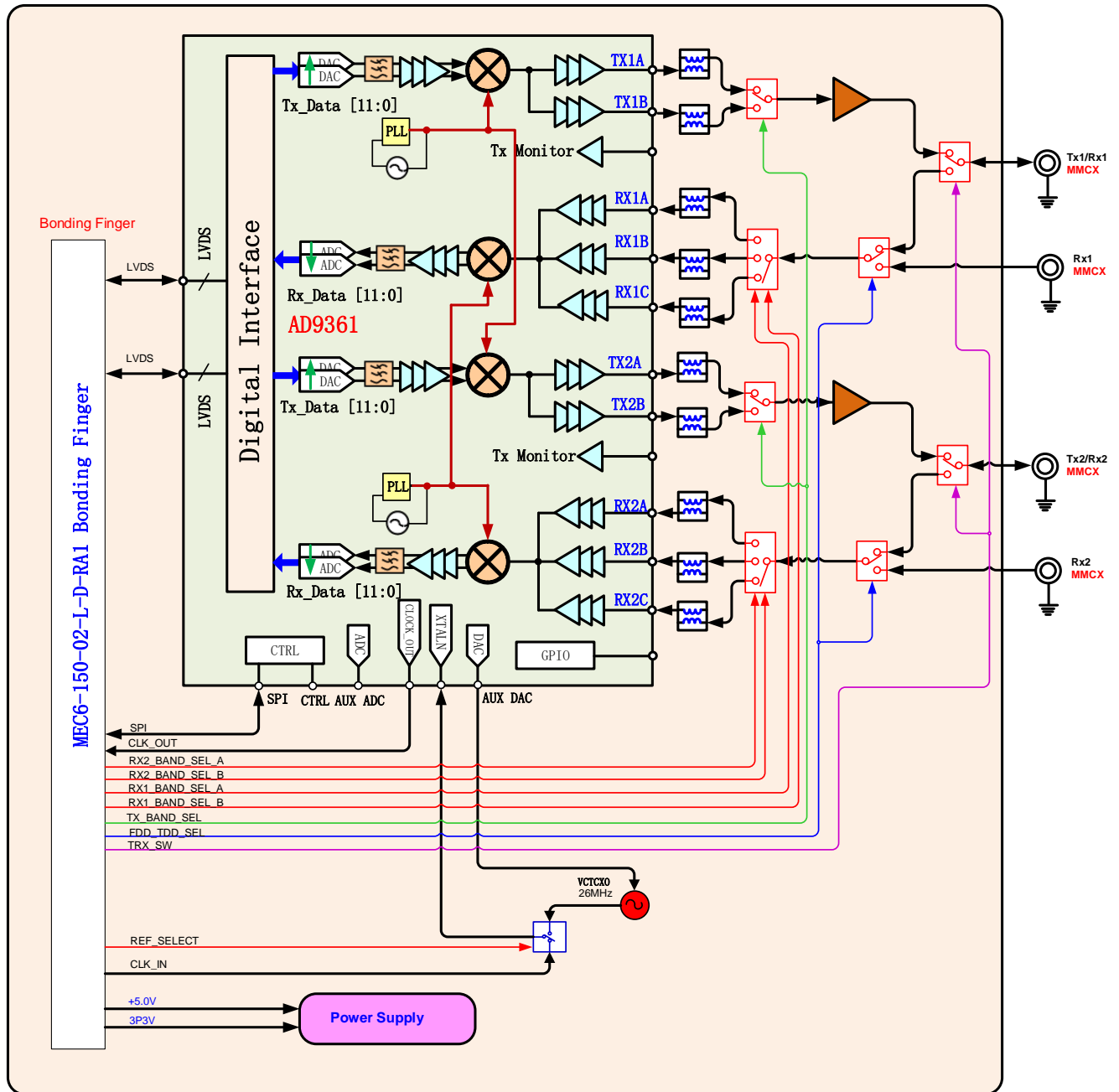
## APPLICATIONS:

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

## GENERAL DESCRIPTIONS:

The HT7601 is an easy-to-use RF module covering 70MHz ~ 6GHz with integrated RFIC technology and Bonding Finger interface (for Samtec MEC6-150-02-L-D-RA1). The RF module features two receive and two transmit channels by using an Analog Devices RFIC, AD9361 to deliver a cost-effective experimentation platform with up to 56 MHz 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 HT7601, designers can prototype with the AD9361 quickly and easily.

**BLOCK DIAGRAM:**



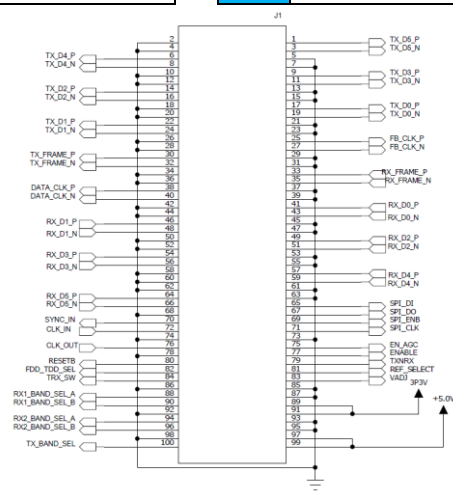
**CHARACTERISTICS:**

	No.	Items	Specifications	Remark
Tx	1	Frequency	70~6000MHz	
	2	Bandwidth	Up to 56 MHz	real-time bandwidth, tunable
	3	Transmission	>5dBm	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)	61.44 MS/s	
	12	DAC Resolution	12bits	
Rx	1	Frequency	70~6000MHz	
	2	Bandwidth	Up to 56 MHz	real-time bandwidth, tunable
	3	Sensitivity:	-90dBm@20MHz	Noise Figure < 8dB
	4	EVM	<1.5%	@ -30dBm input
	5	Gain Control Range	>60dB	
	6	Gain Step	1dB	
	7	Blocking	TBD	
	8	Noise Figure	<8dB	Maximum RX gain
	9	IIP3 (@ typ NF)	-25dBm	
	10	ADC Sample Rate (max)	61.44MS/s	
	11	ADC Resolution	12bits	
	12	ADC Wideband SFDR	78dBc	
	1	Voltage	3.3V	
	2	ON/OFF TIME	<6uS	For TDD model
	3	Duplexing Model	TDD or FDD	
	4	VCTCXO Reference	0.01ppb	26MHz
	5	With External Reference input		

**BONDING FINGER INTERFACE DEFINITION (for Samtec MEC6-150-02-L-D-RA1):**

PIN	Net_Name	PIN	Net_Name
2	GND	1	TX_D5_P
4	GND	3	TX_D5_N
6	TX_D4_P	5	GND
8	TX_D4_N	7	GND
10	GND	9	TX_D3_P
12	GND	11	TX_D3_N
14	TX_D2_P	13	GND
16	TX_D2_N	15	GND
18	GND	17	TX_D0_P
20	GND	19	TX_D0_N
22	TX_D1_P	21	GND
24	TX_D1_N	23	GND
26	GND	25	FB_CLK_P
28	GND	27	FB_CLK_N
30	TX_FRAME_P	29	GND
32	TX_FRAME_N	31	GND
34	GND	33	RX_FRAME_P
36	GND	35	RX_FRAME_N
38	DATA_CLK_P	37	GND
40	DATA_CLK_N	39	GND
42	GND	41	RX_D0_P
44	GND	43	RX_D0_N
46	RX_D1_P	45	GND
48	RX_D1_N	47	GND
50	GND	49	RX_D2_P

PIN	Net_Name	PIN	Net_Name
52	GND	51	RX_D2_N
54	RX_D3_P	53	GND
56	RX_D3_N	55	GND
58	GND	57	RX_D4_P
60	GND	59	RX_D4_N
62	GND	61	GND
64	RX_D5_P	63	GND
66	RX_D5_N	65	SPI_DI
68	GND	67	SPI_DO
70	SYNC_IN	69	SPI_ENB
72	CLK_IN	71	SPI_CLK
74	GND	73	GND
76	CLK_OUT	75	EN_AGC
78	GND	77	ENABLE
80	RESETB	79	TXNRX
82	FDD_TDD_SEL	81	REF_SELECT
84	TRX_SW	83	VADJ
86	GND	85	GND
88	RX1_BAND_SEL_A	87	GND
90	RX1_BAND_SEL_B	89	3P3V
92	GND	91	3P3V
94	RX2_BAND_SEL_A	93	GND
96	RX2_BAND_SEL_B	95	GND
98	GND	97	+5V
100	TX_BAND_SEL	99	+5V



**Truth Table:**
**◆ Rx band switch**

Frequency [MHz]	RX1_BAND_SEL_A	RX1_BAND_SEL_B	RX2_BAND_SEL_A	RX2_BAND_SEL_B
X	0	0	0	0
3000 – 6000	1	0	1	1
1600 – 3000	1	1	1	0
70 – 1600	0	1	0	1

**◆ Tx band switch**

Frequency [MHz]	TX_BAND_SEL
3000 – 6000	1
70 – 3000	0

**◆ Tx-Rx switch**

Function	TRX_SW
Transmitting	1
Receiving	0

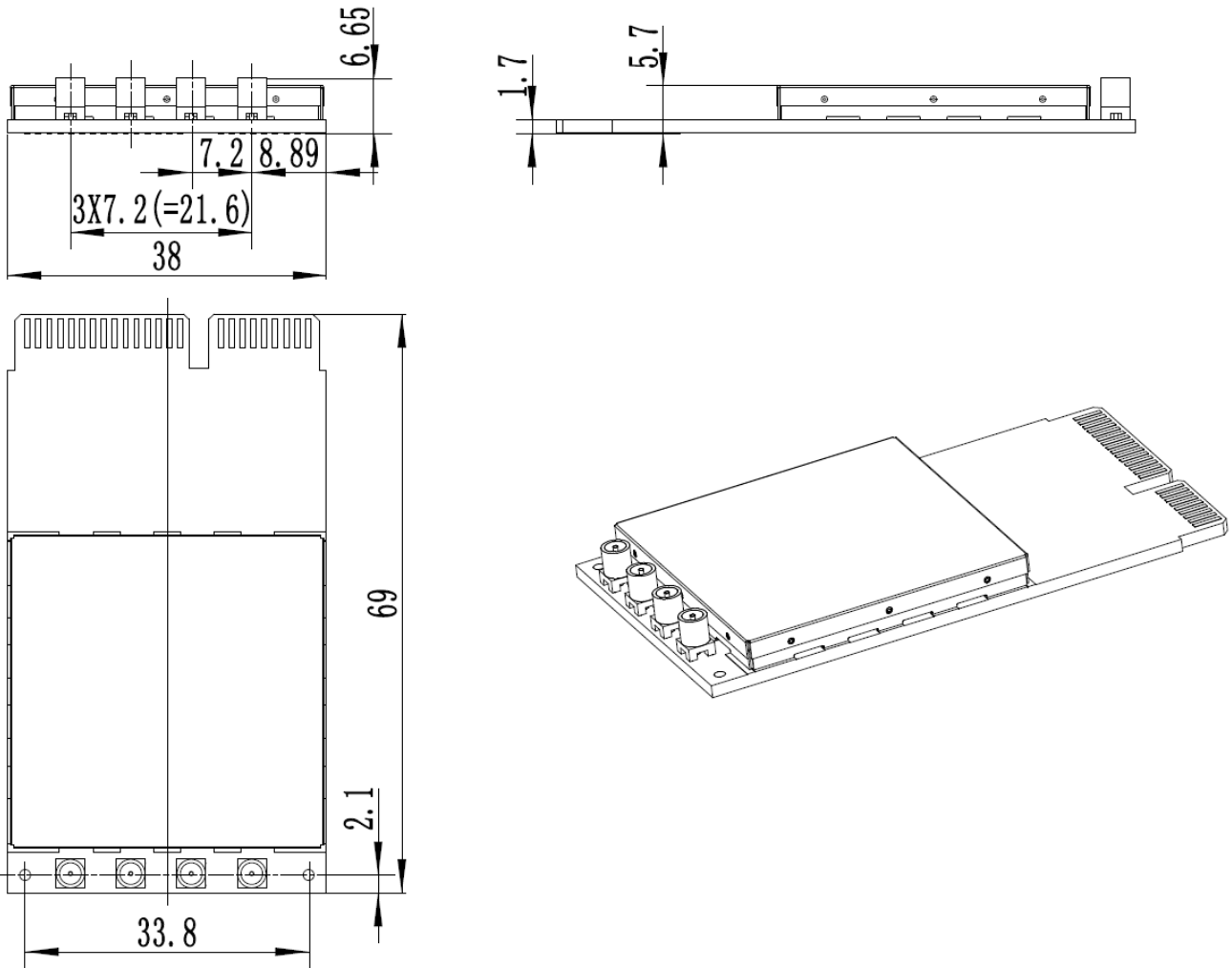
**◆ FDD&TDD Mode switch**

Duplexing Mode	FDD_TDD_SEL
FDD	1
TDD	0

**◆ Reference Selection switch**

Reference Source	REF_SELECT
External Reference	1
Internal Reference	0

**OUTLINE DIMENSIONS:**



**SAMTEC MEC6-150-02-L-D-RA1**

