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# DATA SHEET



## AWM666V RX

### 5.8 GHz Wideband FM Receiver

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Approve	Approve	QA	E/E



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### Revision History

Version	Item	Change	Reason	Date

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## 1. Descriptions:

Airwave 5.8GHz Audio/Video wireless RF module contains one Transmitter and one Receiver. Using of the most popular 5.8GHz ISM band and being designed with high reliability, Airwave RF module is compliance with the criteria of FCC and R&TTE which can transmit/receive a wide band audio & video signals up to 300 feet in open area. AWM666V RX module uses down conversion concept to convert the 5.8GHz RF Signal to 480 MHz IF signal, and then obtain base band via PLL FM demodulation IC by Airwave AWI5822.

## 2. Feature:

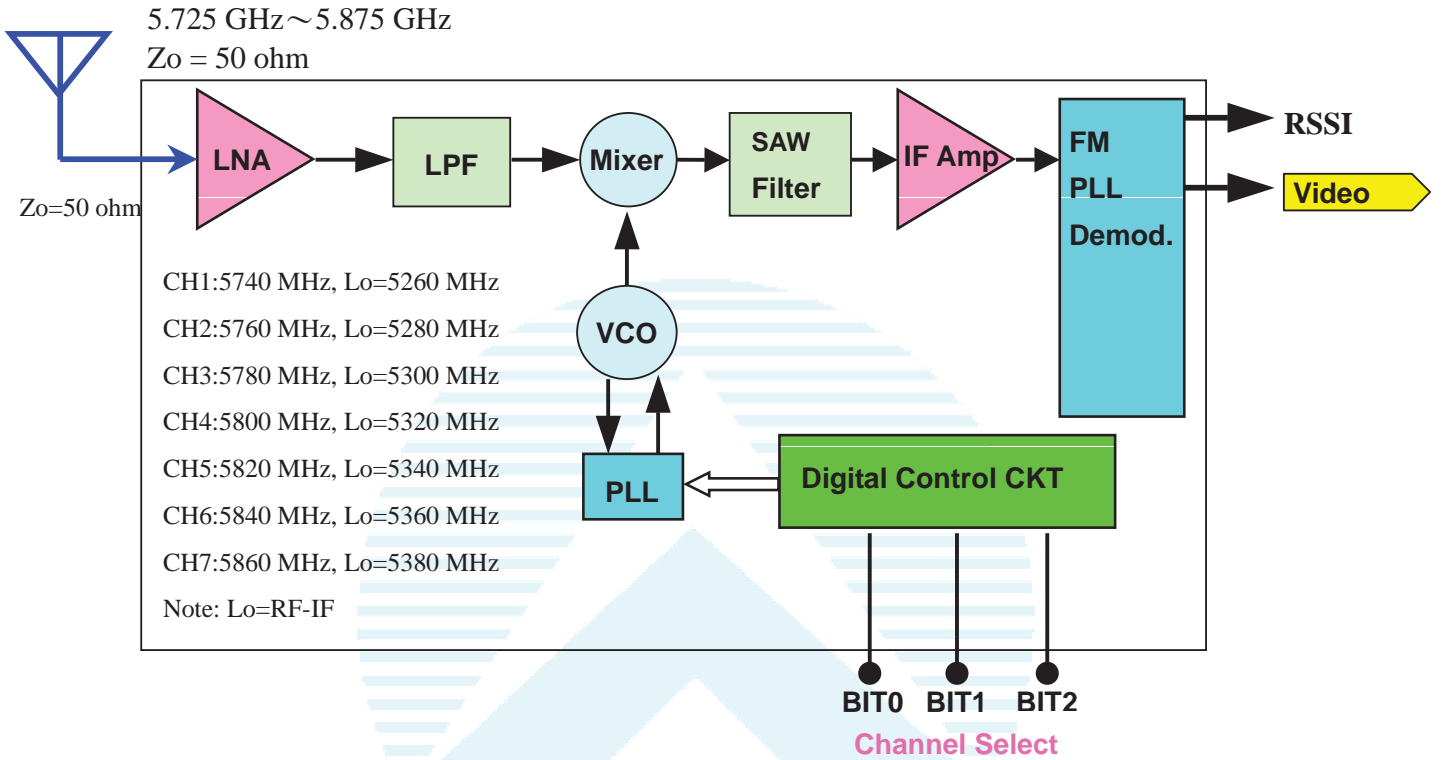
- Worldwide 5.8GHz ISM band (5725 MHz~5875 MHz).
- Conform to R&TTE & FCC stipulation.
- Compatible with both NTSC and PAL video formats.
- Compact size and low power consumption.
- Highly efficient FM-FM modulation/demodulation scheme.
- Integrating Video input and output into one module base band PCB.
- Provide with 7 selectable channels.
- Received signal strength indicator (RSSI).

## 3. Application:

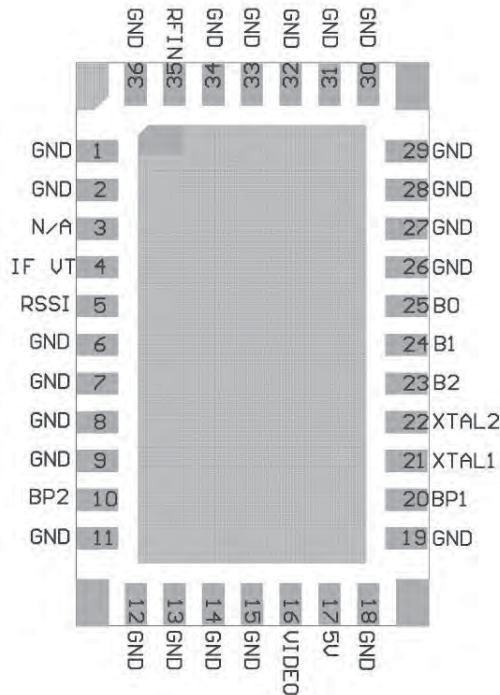
- AV Sender
- Baby Monitor
- Surveillance
- Wireless Camera

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**4. Function block:**



**5. PIN define**



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**6. PIN descriptions:**

PIN	NAME	Descriptions
1	GND	Ground.
2	GND	Ground.
3	N/A	Not connect
4	IF_VT	480MHz VCO Tuning Voltage Control Input : Typical range of Vt is 0.9~1.3V
5	RSSI	Inversely proportional input signal strength : Typical range of Vt is 0.3~1.9V
6	GND	Ground.
7	GND	Ground.
8	GND	Ground.
9	GND	Ground.
10	BP2	Bypass capacitor. (22 uf /16V)
11	GND	Ground.
12	GND	Ground.
13	GND	Ground.
14	GND	Ground.
15	GND	Ground.
16	Video	Video signal output.
17	5V	DC +5V power supply in
18	GND	Ground.
19	GND	Ground.
20	BP2	Bypass capacitor. (1000 uf /16V)
21	XTAL2	External crystal connection pin 1
22	XTAL1	External crystal connection pin 2
23	B0	Channel select.
24	B1	Channel select.
25	B2	Channel select.
26	GND	Ground.
27	GND	Ground.
28	GND	Ground.
29	GND	Ground.
30	GND	Ground.
31	GND	Ground.
32	GND	Ground.
33	GND	Ground.
34	GND	Ground.
35	ANT	RF received signal input
36	GND	Ground.

Channel selection are seven channels by Pin23, Pin24and Pin 25 for dip SW mode As shown below :

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Table1:

Pin25 B2	Pin24 B1	Pin23 B0	Descriptions	Receiver Frequency
0	0	0	Pin 27, Pin 28, Pin 29 connect to GND.	5740MHz (CH1)
0	0	1	Pin 27 and Pin 28 connect to GND, Pin 29 OPEN.	5760MHz (CH2)
0	1	0	Pin 27 and Pin 29 connect to GND, Pin 28 OPEN.	5780MHz (CH3)
0	1	1	Pin 27 connect to GND, Pin 28 and Pin 29 OPEN.	5800MHz (CH4)
1	0	0	Pin 28 and Pin 29 connect to GND, Pin 27 OPEN.	5820MHz (CH5)
1	0	1	Pin 28 connect to GND, Pin 27 and Pin 29 OPEN.	5840MHz (CH6)
1	1	0	Pin 29 connect to GND, Pin 27 and Pin 28 OPEN.	5860MHz (CH7)

**Channel setting voltage**

High voltage	2.5V ~ 3.6V
Low voltage	< 1.0V

**Minimum settling time****< 50ms****AIRWAVE TECHNOLOGIES INC.**

**7. Absolute maximum ratings:**

RF/ DC Parameters	Min.	Typ.	Max.	Unit
Storage Temperature Range	-25	-	85	°C
Supply voltage	4.5	-	5.5	V

The maximum rating must not be exceeded at any time. Do not operate the device under conditions outside the above.

**8. DC/AC Electrical characteristic:**

(VCC=DC +5V, 25°C)

RF/ DC Parameters	Min.	Typ.	Max.	Unit
Supply voltage	4.95	5	5.05	V
Supply current	190	200	210	mA
RF Input Level	-85		-10	dBm
Operating temperature	-10	-	60	°C
Operation Frequency Range	5725		5875	MHz
Channel Selection	PLL Synthesizer, 7CH (See Tab1)			
Channel Frequency	CH1 : 5740 MHz, CH2 : 5760 MHz CH3 : 5780 MHz, CH4 : 5800 MHz CH5 : 5820 MHz, CH6 : 5840 MHz CH7 : 5820 MHz.			
Video-Audio Modulation/Demodulation Type	FM-FM			
<b>Video</b>				
Output Signal Level	1V <sub>P-P</sub> , typ. (+/-0.2Volt)			
Frequency Response	+/-5 dB, max. 50Hz~5.5MHz			
S/N Ratio (100KHz, 1V <sub>P-P</sub> Sine Wave)	40dB, min.			
<b>RSSI</b>				
RSSI output voltage (RF input -30dBm~-90dBm)	0.3~1.9V			
<b>Module Flatness (Difference between max. and min. PCB heights above a flat surface)</b>				
PCB bending	0.35mm, max.			

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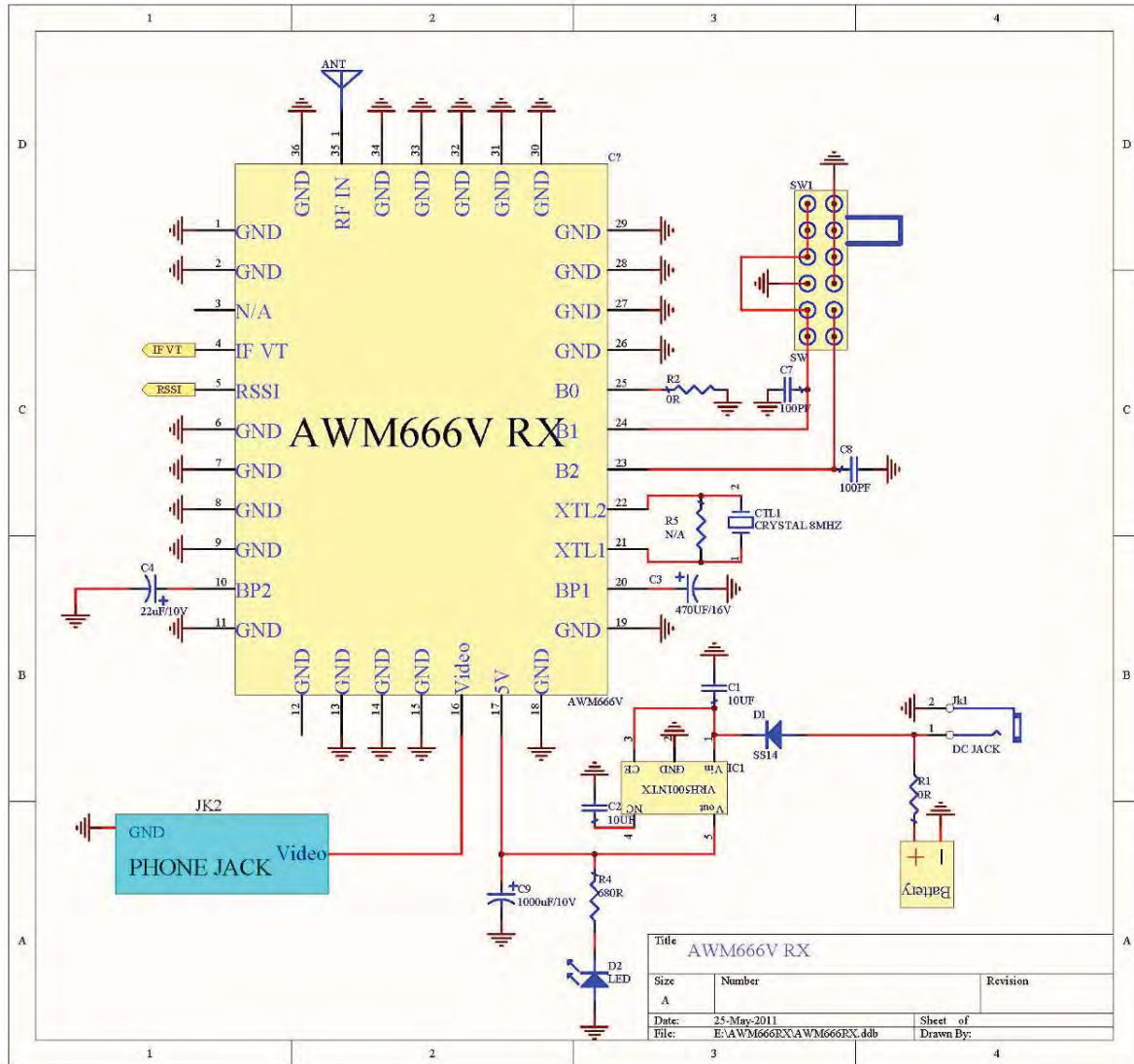


**9. BOM of Demo Board****AWM666V RX Demo Board part list**

Part Type & Description	Quantity	Designator	Notes
0402, 0R	1	R2	
0603, 0R	1	R1	
0402, 100PF	2	C7 C8	
0805, 10UF	2	C1 C2	
E/CAP 22UF(10V)	1	C4	
E/CAP 470UF(10V)	1	C3	
E/CAP 1000UF(10V)	1	C9	
AT-39, CRYSTAL 8MHZ	1	CTL1	友桂
SWITCH(SK24D02G6)(DC 50V 0.3A/2P4T)	1	SW1	
VRH5001NTX(SOT23-5)	1	IC1	ANASEM
STERO PHONE JACK(TSH3724)	1	JK2	
POWER JACK DS-413	1	JK1	
AWM666VV	1	M1	AIRWAVE

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### 10. Demo Board circuit schematic



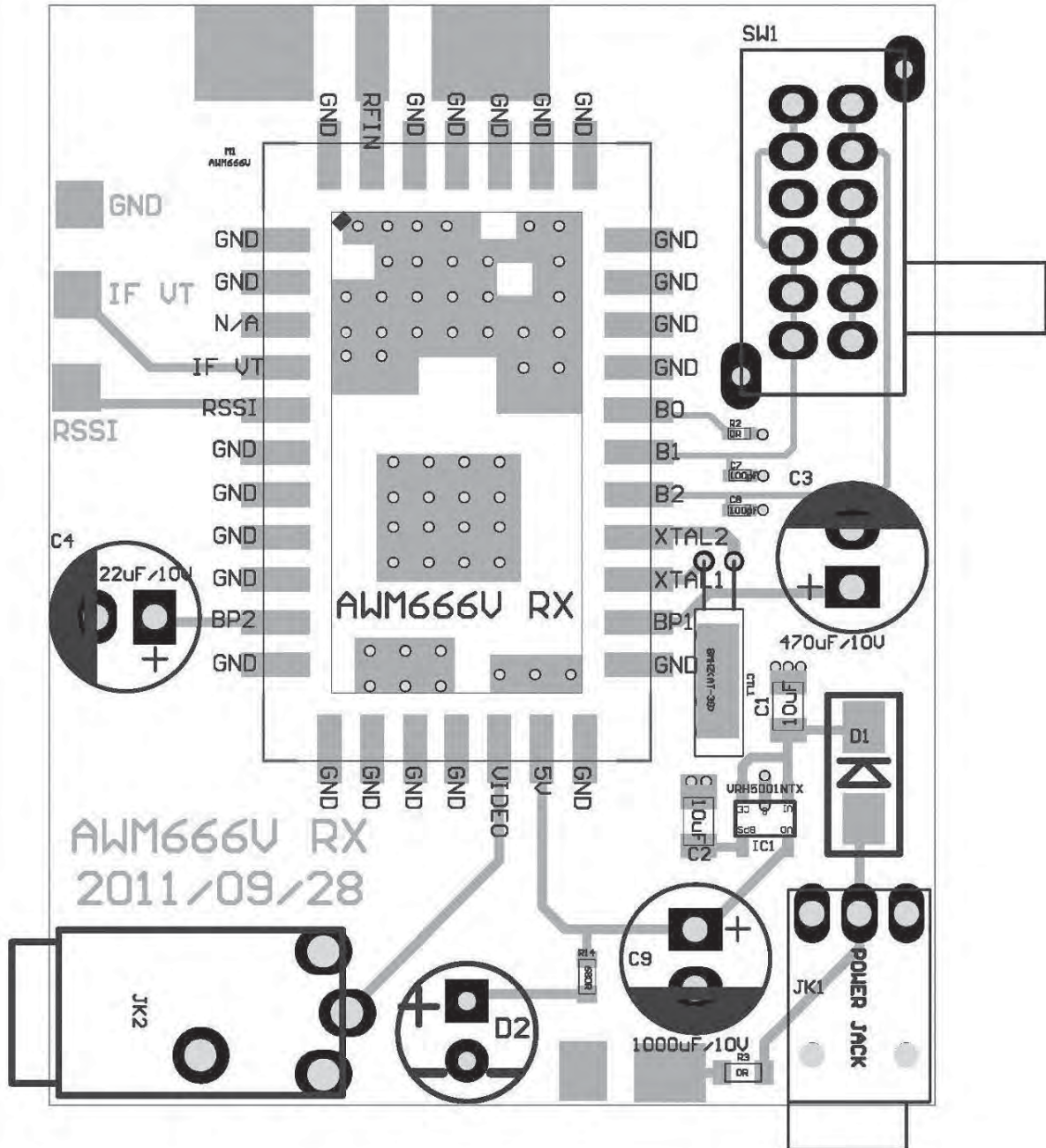
Notes :

Very low noise voltage regulator, such as 7805 or VRH5001NTX\_SOT23-5 is required for IC1 ;otherwise a bypass with a value of at least 1000uF must be used for C9

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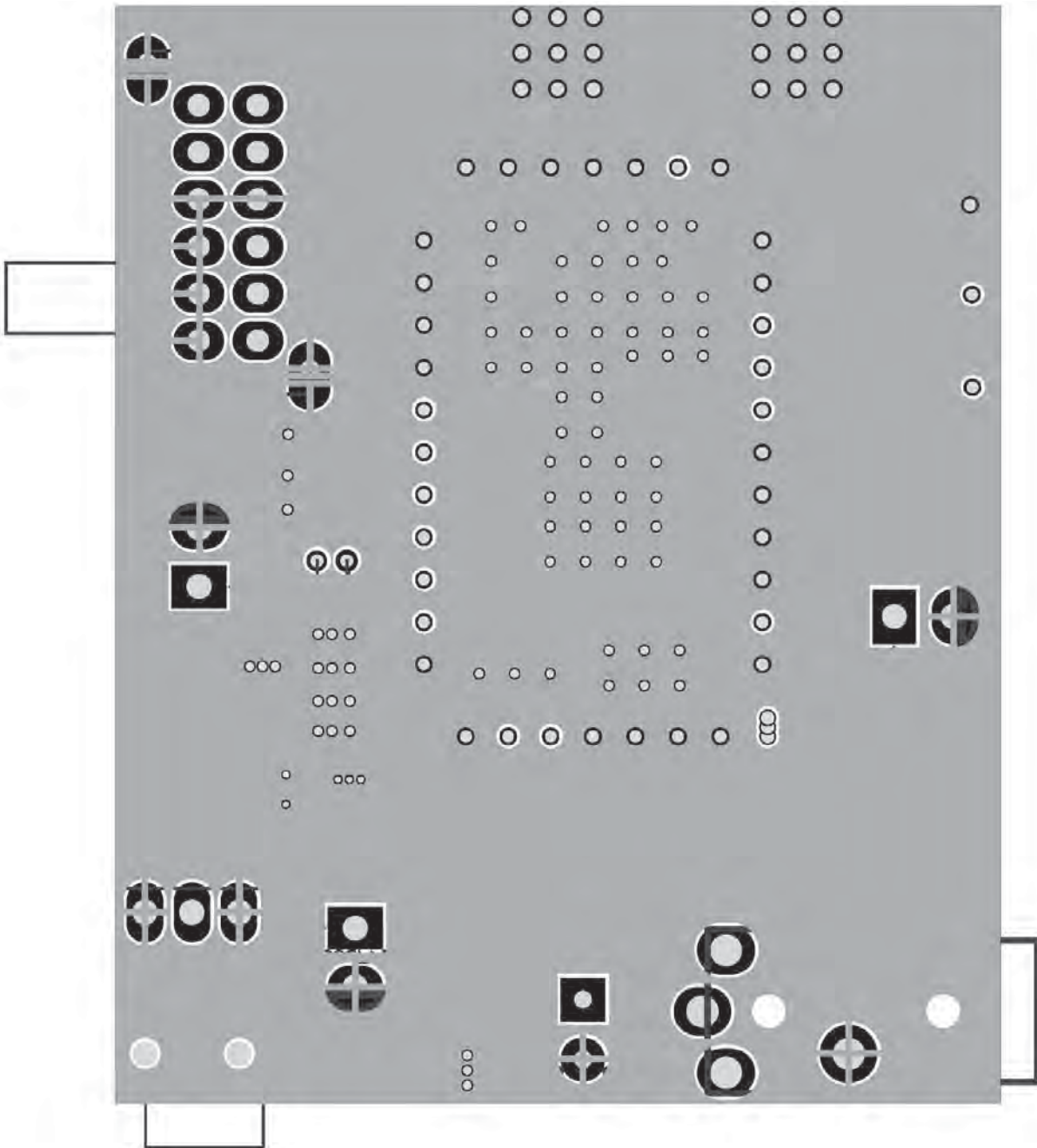
### 11. BB PCB layout design guide

#### a. Top View of demo board PCB



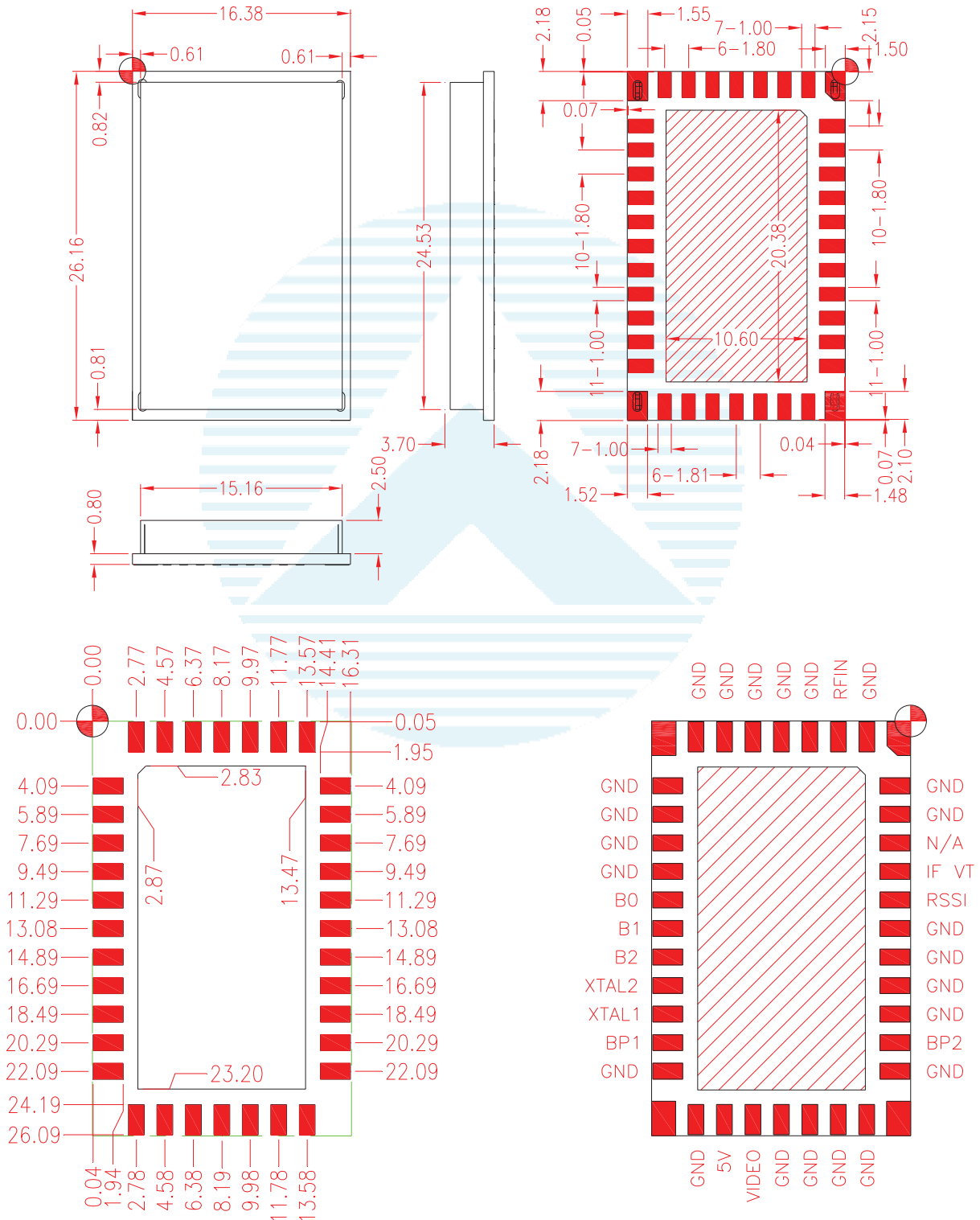
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**b. Bottom View of demo board PCB**



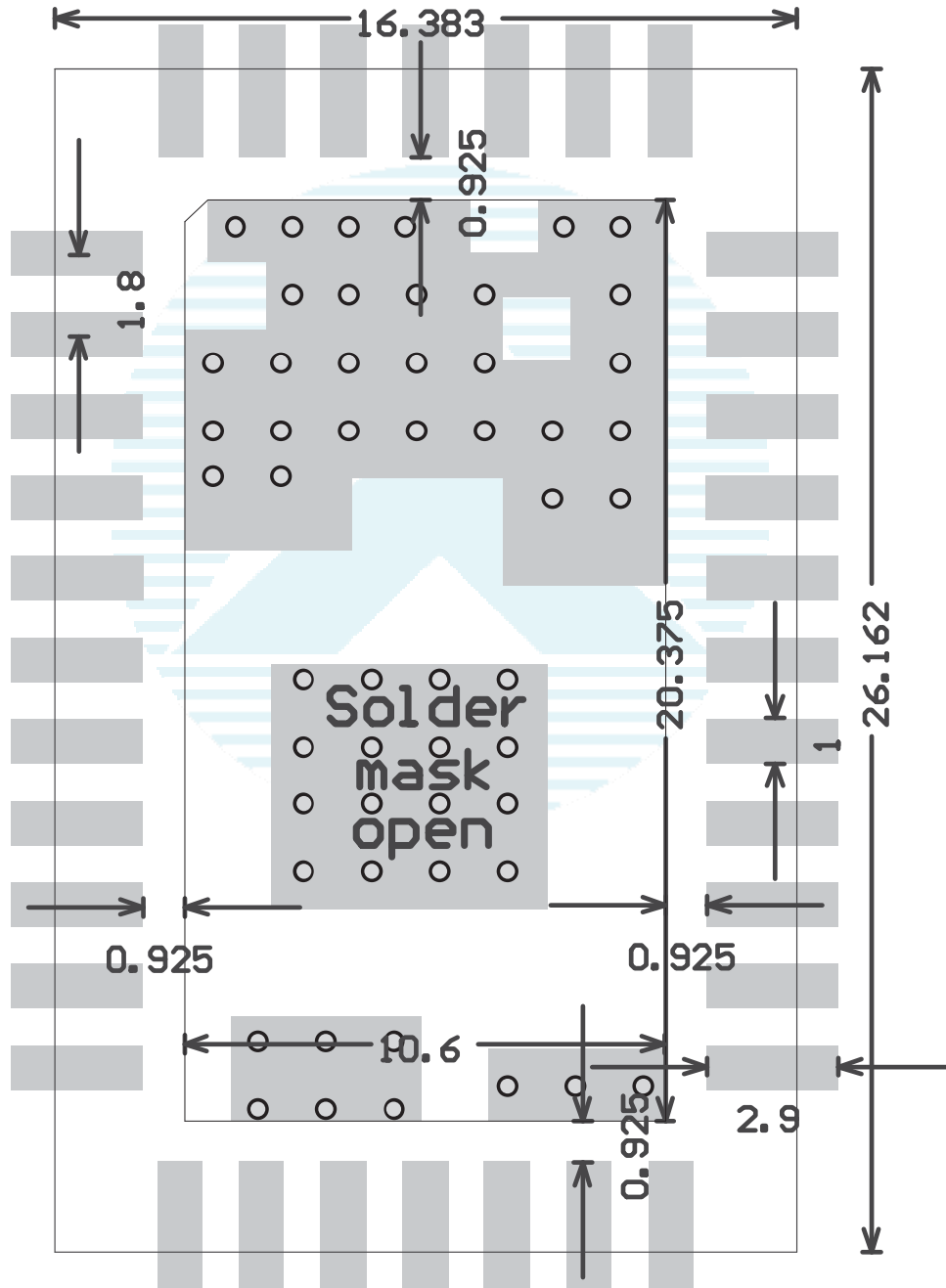
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**12. AWM666V RX Dimension: (Unit:mm)**



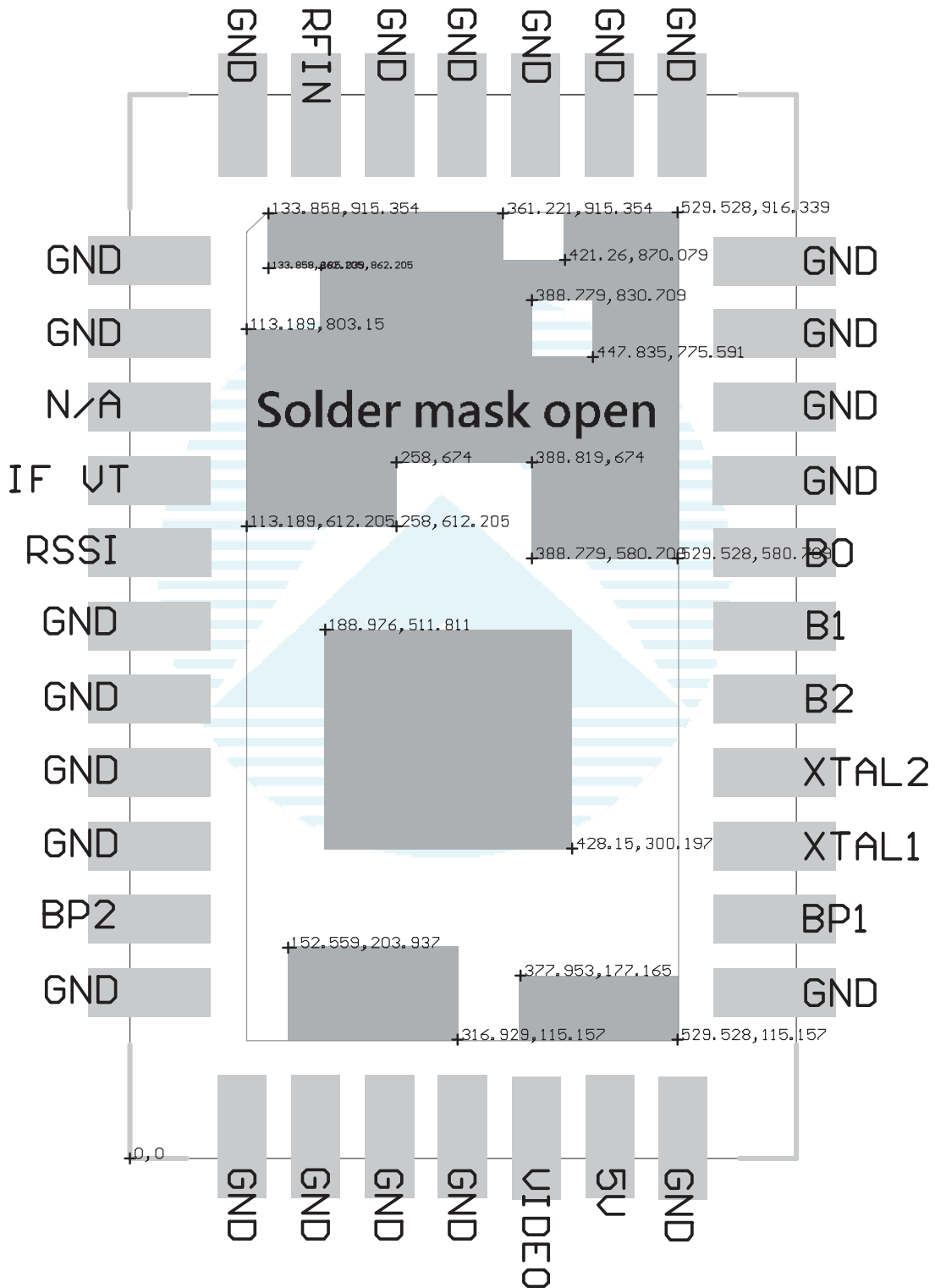
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### 13. Recommended BB PCB layout for AWM666V RX



Unit: mm

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Unit: mm

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