Preliminary Rev0.1 2006/8/28

Features

- Proprietary audio compression/decompression(LDAP) for wireless transmission
- Low audio latency(~3.8ms in total)
- Highly Robust Forward Error Correction (FEC)
- 8 frequency channels
- RF channel data rate:1.152 Mbps
- 16-Bit ID codes to provide TX / RX pairing
- Auto channel scanning mechanism provided
- Optimized auto muting mechanism for received corrupted data by the receiver
- High Sensitivity of typically –85dBm
- High Output Power of typically +8.5dBm
- RoHs Compliant
- Stereo $\Delta\Sigma$ ADC
- 48kHz Audio Sampling rate
- High S/N ratio of typically 82 dB
- Both S/PIDF Data and Analog Audio Input Formats

Applications

- Low Cost/High Performance Wireless Audio
  - Wireless Surround Rear Speakers
  - High Performance Digital Audio Link
  - Wireless Headphone/Earphone
  - Wireless USB Transmitter
  - Wireless Skype phone
- FCC CFR47,Part 15,ETSI EN 300 328,EN 300 440 and ARIB STD-T-66 Compliant Radio

General Description

The RF module transmitter employed GFSK modulation to deliver high-speed data rate up to 1.152Mbps.

The RF module receiver with –85dBm or better sensitivity allows system to achieve at least 300 feet transmission for line-of-sight application in open site.

Tx Module Absolute Maximum Ratings

Parameter	Condition	Min.	Typ	Max	Units
Supply voltage	Vs	3.0	3.3	3.6	V
Storage temperature	Tstg	-40	25	+125	℃
Operating temperature	To	0	25	+55	℃

Rx Module Absolute Maximum Ratings

Parameter	Condition	Min.	Typ	Max	Units
Supply voltage	Vs	3.0	3.3	3.6	V
Storage temperature	Tstg	-40	25	+125	℃
Operating temperature	To	0	25	+55	℃
Input RF level	Prf			+10	dBm

Generral

Parameter	Condition	Min.	Typ	Max	Units
Audio latency			3.8		ms
Tx,Rx pairing	ID Code		16		bit
S/N ratio			82		dB

Tx Module

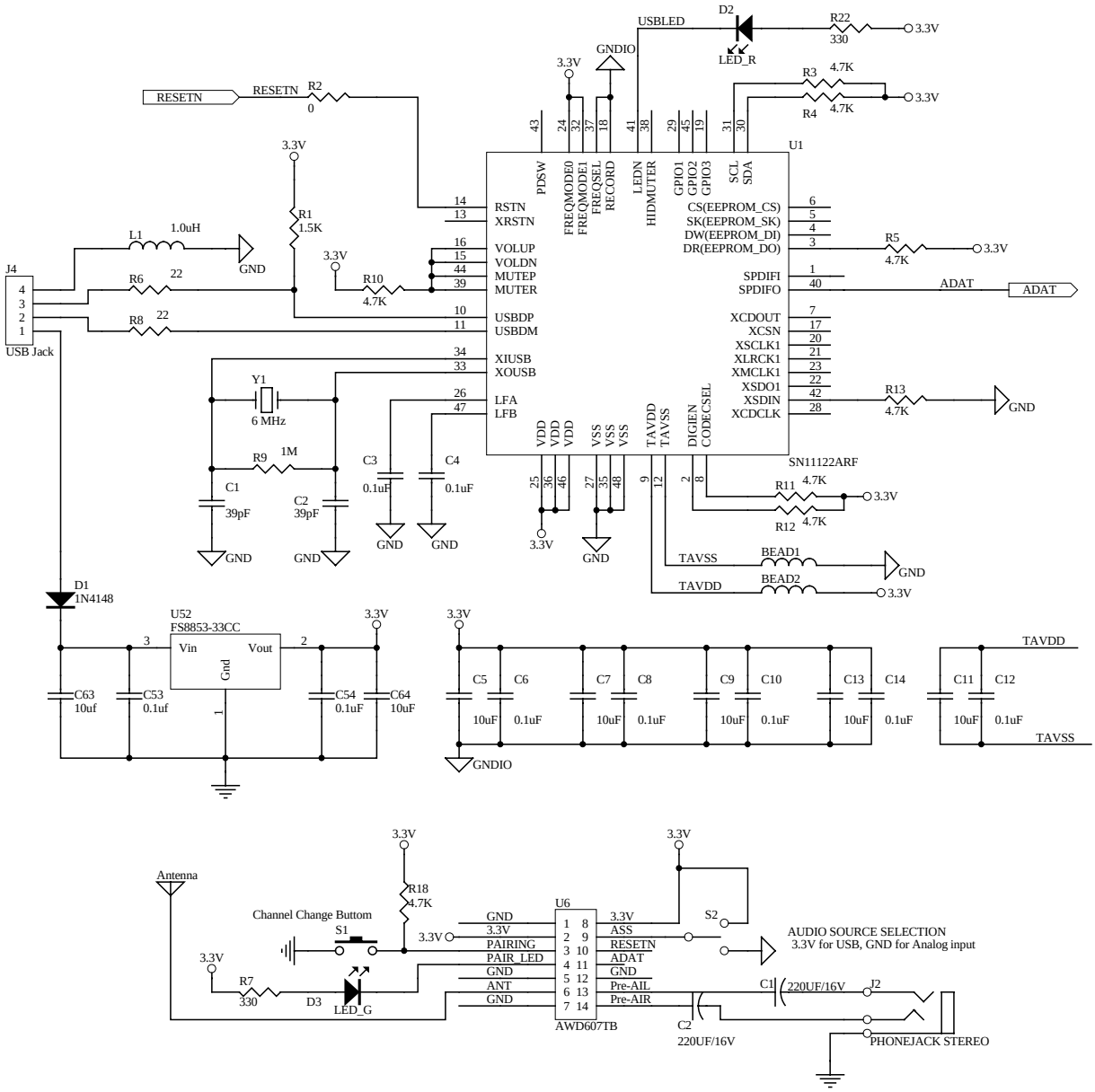
Parameter	Condition	Min.	Typ	Max	Units
Supply voltage	Vs	3.0	3.3	3.6	V
Supply current			89		mA
Operating Frequency		2400		2483.5	MHz
Transmission Power		8	8.5	9.5	dBm
Modulation Type	GFSK				
Channel Frequency	Peak power position under no Data in.	-0.1	2401.920 2412.288 2422.656 2433.024 2448.576 2458.944 2469.312	+0.1	MHz

			2479.680		
Channel Spacing			10.368		MHz
Frequency Deviation			+/-0.1		MHz
Audio Input Level	peak to peak value		2.0		V
Audio Input Impedance			20k		Ohm
Data Rate			1.152		Mbps
Audio Sampling Rate			48		KHz
Pairing LED voltage	Pull High Resistor				
Tx/Rx Pairing setting	tact switch		3.3		V
Reset pin	tact switch				

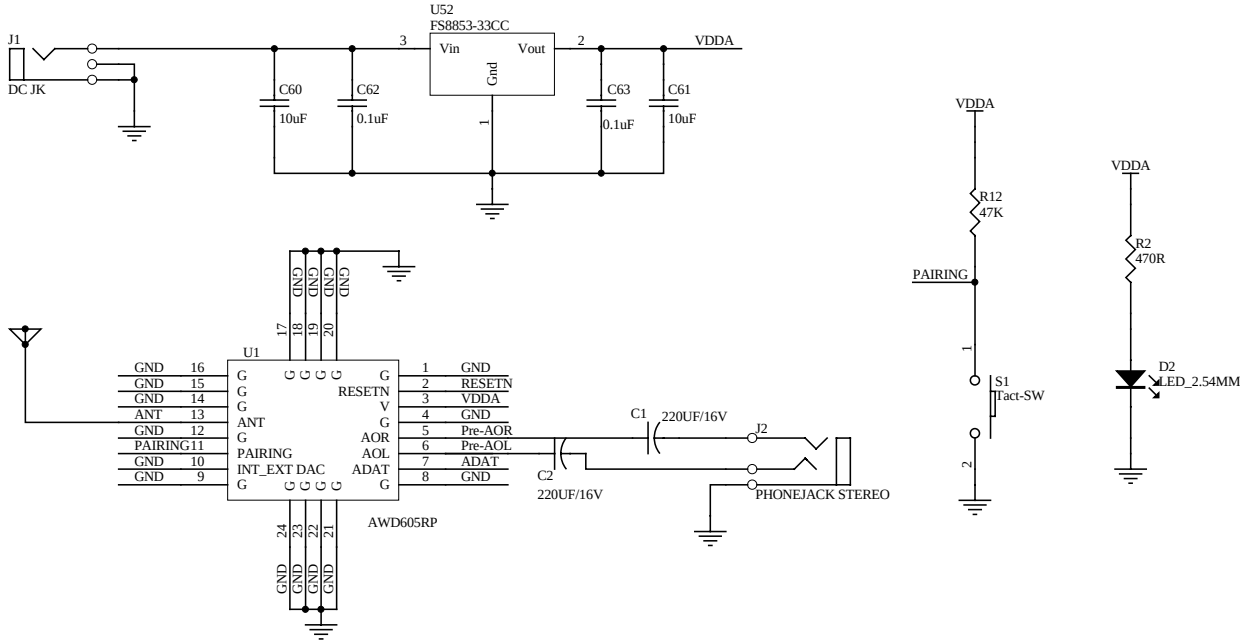
Rx Module

Parameter	Condition	Min.	Typ	Max	Units
Supply voltage	Vs	3.0	3.3	3.6	V
Supply current			99		mA
Operating Frequency		2400		2483.5	MHz
Rx Sensitivity	BER=1e-3 when 1.152Mbps input		-85		dBm
Image Rejection	Relative to 2.4-2.4835GHz power	47			dBc
Audio Output Level			2.6		Vpp
Audio Output Impedance			16		Ohm
Audio frequency response	3dB bandwidth	20		20k	Hz
Data Rate			1.152		Mbps
Adjacent channel rejection	+/- 5MHz offset the central frequency		>45		dB
Tx/Rx Pairing setting	tact switch				

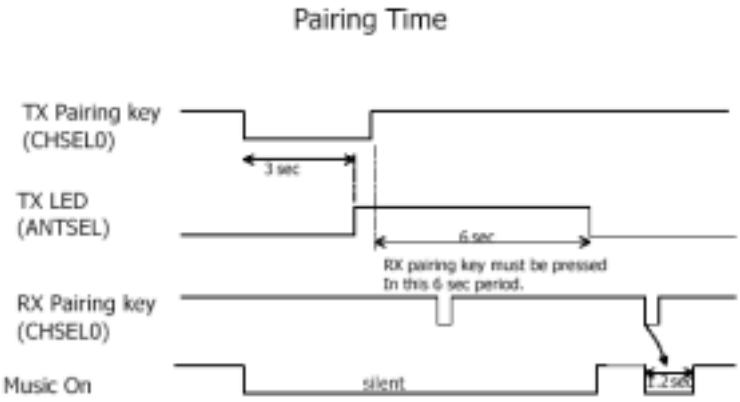
AWD60XT Module Reference Design for USB or Analog Audio application



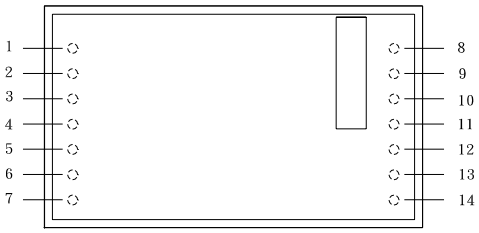
AWD605R Module Reference Design

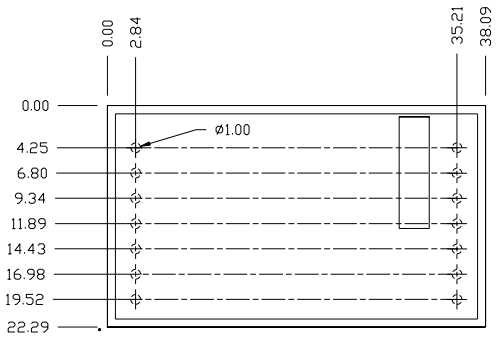


TX / RX Pairing



TX Module Pin Assignment





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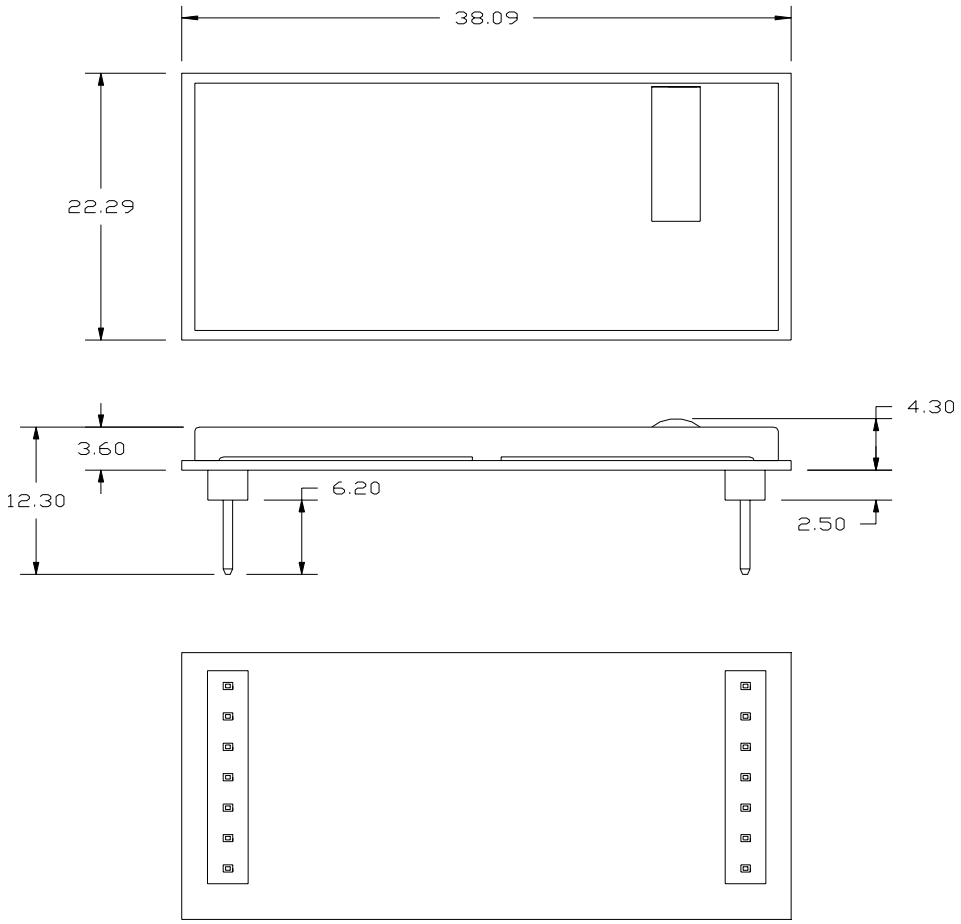
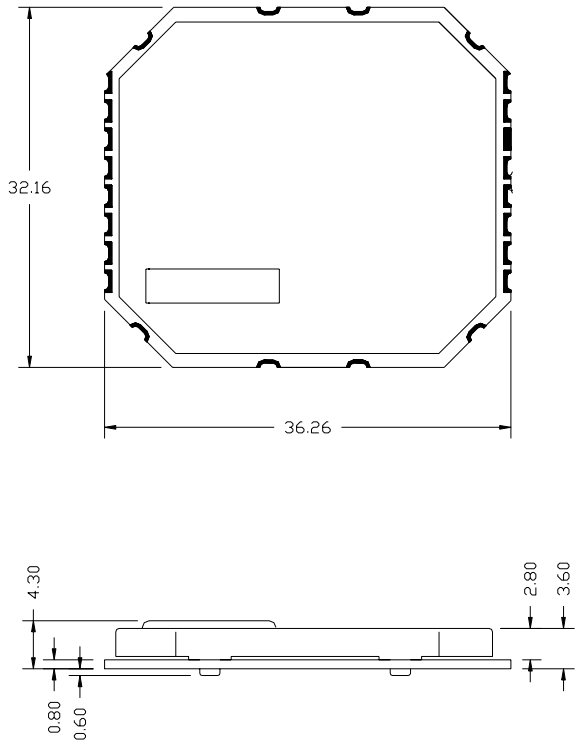
Unit : mm Tolerance : +/- 0.2 mm

Pin No	Name	Functional Grouping	IO Type	Description
1	GND	Ground	NA	Ground
2	3.3V	Power	Input	3.3V Power Supply
3	Pairing	Control	Input	pull-low continuously for over 3 seconds to enter into PAIRING mode and AWD605RP can perform the PAIRING process within 6 seconds.
4	Pairing LED	Signal	Output	PAIRING state indicate
5	GND	Ground	NA	Ground
6	ANT	RF	Output	2.4GHz antenna
7	GND	Ground	NA	Ground
8	3.3V	Power	Input	3.3V Power Supply
9	ASS	Control	Input	Audio Source Selection: 3.3V for USB, GND for Analog input
10	RESET	Control	Input	Reset
11	ADAT	Signal	Input	SPDIF audio data input
12	GND	Ground	NA	Ground
13	AIL	Signal	Input	Lch Analog Input Pin
14	AIR	Signal	Input	Rch Analog Input Pin



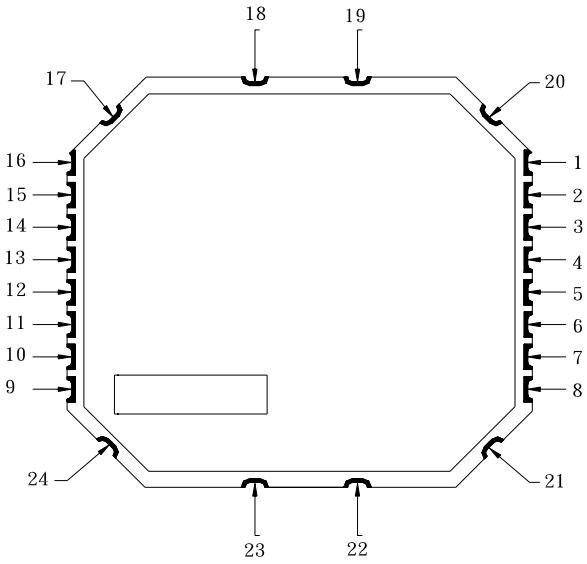
Unit : mm Tolerance : +/- 0.2 mm

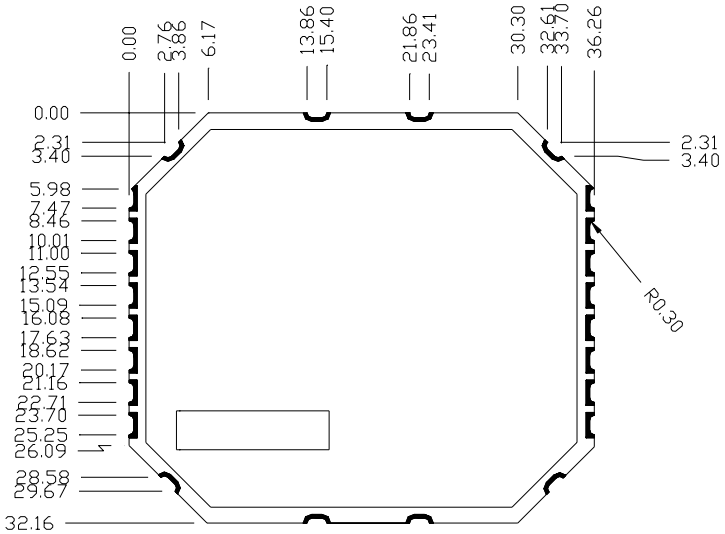
RX Module Pin Assignment



Unit:mm Tolerance:± 0.2

Pin No	Name	Functional Grouping	IO Type	Description
1	GND	Ground	NA	Ground
2	RESETN	Control	Input	Reset
3	3.3V	Power	Input	3.3V Power Supply
4	GND	Ground	NA	Ground
5	AOR	Signal	Output	Rch Analog Output Pin
6	AOL	Signal	Output	Lch Analog Output Pin
7	NC		NA	NA
8	GND	Ground	NA	Ground
9	GND	Ground	NA	Ground
10	GND	Ground	NA	Ground
11	Pairing	Control	Input	After continuously pulling-low for over 3 seconds on AWD607TP, AWD605RP enters into PAIRING mode and the PAIRING process can be performed for the next 6 seconds.
12	GND	Ground	NA	Ground
13	ANT	RF	Input	2.4GHz antenna
14	GND	Ground	NA	Ground
15	RSSI	Signal	Output	Received signal strength indicator output
16	GND	Ground	NA	Ground





Unit:mm Tolerance:± 0.2

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses
and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1 This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority
to operate this equipment.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed
and operated with minimum distance 20cm between the radiator & your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

" This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance. "