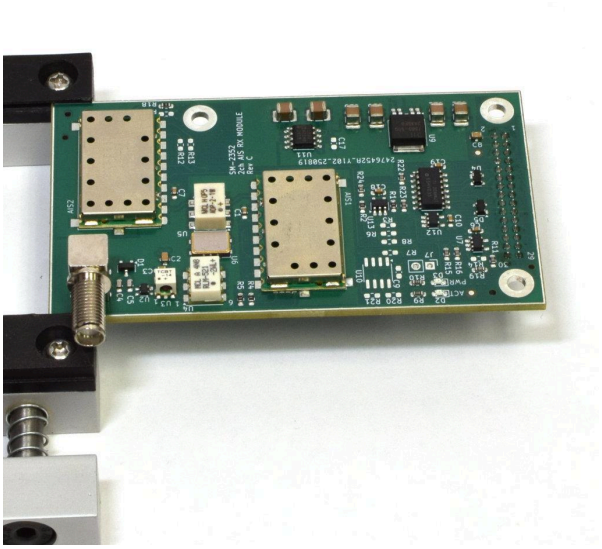
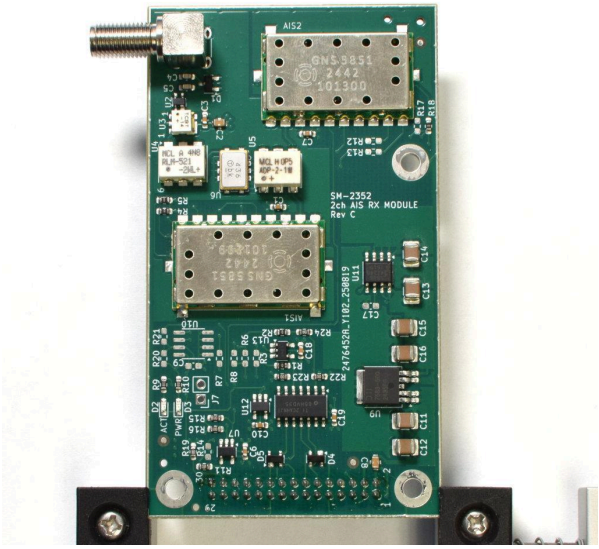
SM-2352 AIS Receiver Module Datasheet





Summary

The SM-2352 is a dual channel (A&B) AIS receiver with RS422 data output. It is designed to be integrated into a larger board stack or motherboard, easing integration of autonomous surface vessel electronics.

True dual channel reception is accomplished with dual internal radios and an internal amplification / filter / power splitter chain.

Features

- True dual channel / dual radio reception
- Internal RF amplifier
- SAW filter and power limiters for RF robustness from nearby transmitters
- RS422 output
- 6V - 30V operating voltage range

Orderable Part Numbers

MF	MPN	Note
Suburban Marine	SM-2352-C01	

Connectors

PCB Connectors

The following part numbers are currently used and are provided as an aid to integration. Parts may be substituted in future builds without notice.

Connector	MF	MPN
30 pin header, male	Samtec	TMM-115-03-S-D
RF	Molex	0732512200

Suggested Mating Connectors

The following part numbers are suggested mating connectors. Samtec provides several compatible mating connectors with different features and options. Most standard SMA connectors should be able to mate with the RF port.

Connector	MF	MPN
30 pin header, female	Samtec	CLT-115-02-S-D-A-K-TR
Board spacer, M3, threaded, 4mm stack height	Würth Elektronik	9774040360R

J3 Connector Pinout

Pin	Function
1, 2	VBUS in
3, 4, 5, 7, 8, 11, 13, 15, 17, 21, 22, 23, 25, 27, 29	GND
9, 10, 19, 20	PE
6	Internal +3V3 rail output

12	RS422 A
14	RS422 B
16	RS422 Z
18	RS422 Y
24	UART TX or I2C SDA option, 3V3 logic level NC by default
26	UART RX or I2C SCL option, 3V3 logic level NC by default
28	Frame indicator, positive pulse on AIS RX activity, referenced to internal +3V3
30	nRESET, internally pulled up with ~100kΩ||40kΩ||40kΩ to internal +3V3. May be pulled low externally to initiate reset.

RF Pinout

Pin	**Function**
Shield	Power Ground
Pin	RF

Indicator LEDs

Reference Designator	**Function**
D2	Frame indicator, blinks on AIS RX activity
D3	+3V3 good

Specifications

Electrical Specifications

Param	**Min**	**Typical**	**Max**	**Unit**
Input voltage	6.0		30.0*	V

Input current, typical		75**		mA
Output current, pin 6 +3V3 out			50	mA

* Extended input voltage up to 36.0V may be possible with operating temperature derating or external cooling of U9.
** Onboard regulators are linear, current draw approximately constant with input voltage.

RF Specifications

Param	Min	Typical	Max	Unit
Input power, max		-10*		dBmW
SAW filter center		162		MHz
SAW filter 3dB bandwidth	90	108		kHz
Sensitivity				dBmW
Internal gain between RF input and radio RX				dBmW
Impedance		50		Ohm

* Approx input power before which internal power limiters will activate, given internal gain. Max power before destruction TBD.

Mechanical Specifications

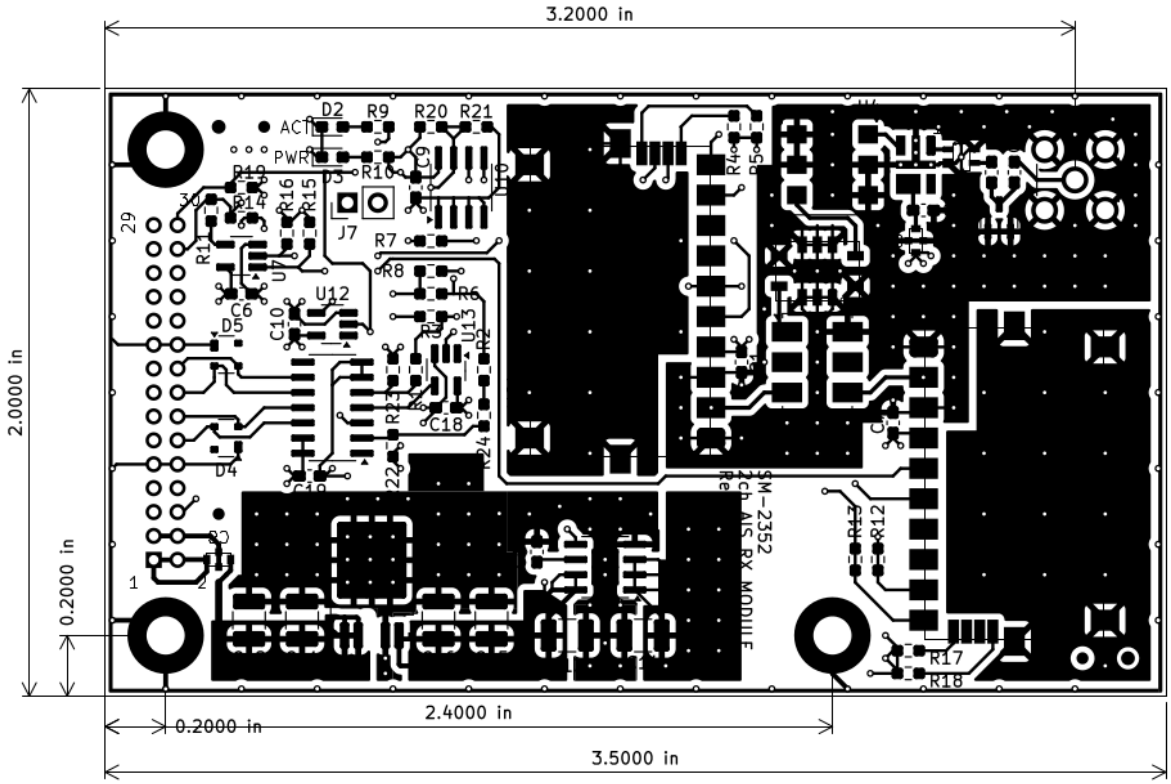
Param	Min	Typical	Max	Unit
Length				mm
Width				mm
Height				mm
Mass				g

Operating Specifications

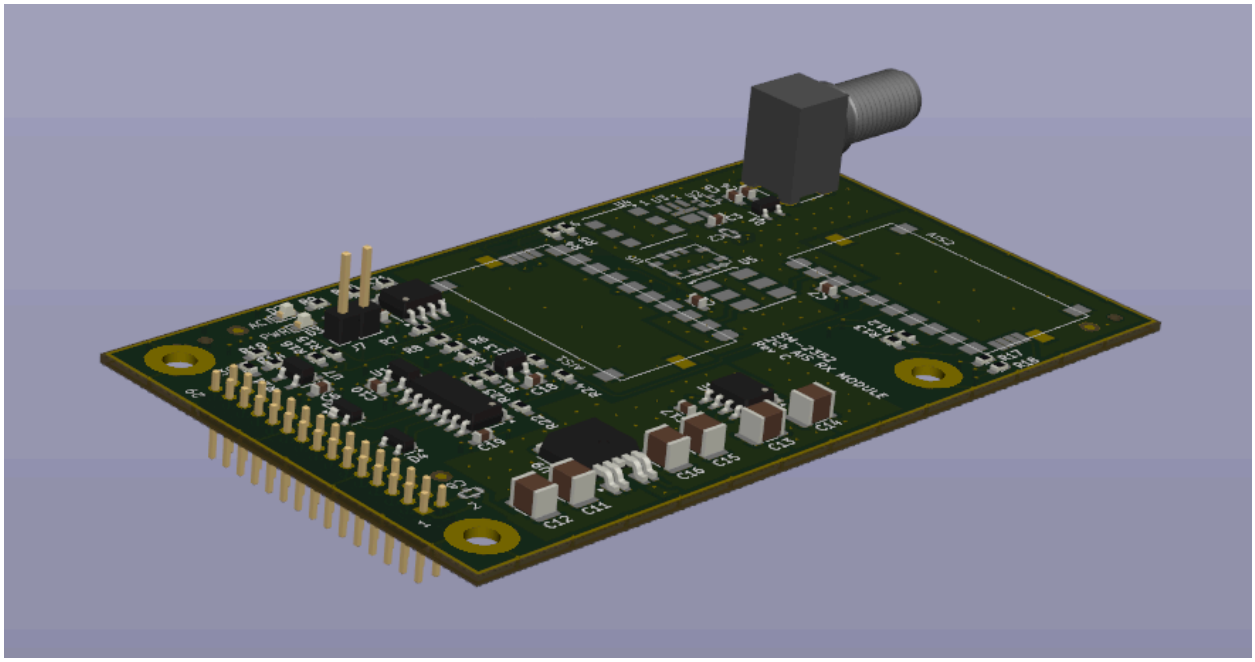
Param	Min	Typical	Max	Unit

Temperature	-40	20	70	degC
Humidity			Non-condensing	%RH
Pressure				bar

Mechanical Interface Drawing



Qty 3 through holes 3.2mm OD for M3 screw / standoff. Standoffs with height ~4mm required for TMM / CLT connector mate. All 3 mount holes and board edge connected to PE. J3 connector centered along Y axis and offset 0.2in from board edge.



References

TBD

Product Revision History

Date	Comments
SM-2352-C	Initial Release

Document Revision History

Date	Revision	Comments
20260205	-	Draft