

SM-2353 Ethernet AIS Receiver Datasheet

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Summary

The SM-2353 is a dual channel (A&B) AIS receiver with RS422 and ethernet data output.

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

Schematic available upon request.

Features

- True dual channel / dual radio reception
- SAW filter and power limiters for RF robustness from nearby transmitters
- 10/100 Ethernet, IPV4, DHCP
- Desktop case option
- 9 - 36V operating voltage range

Orderable Part Numbers

MF	MPN	Note
Suburban Marine	SM-2353-B01	xPort Edge

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
Power	Phoenix Contact	MC 1,5/ 3-GF-3,5 1843800
RS422	Phoenix Contact	MC 1,5/ 5-GF-3,5 1843826
RF	Molex	0732512410

Suggested Mating Connectors

The following part numbers are suggested mating connectors. Phoenix Contact 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
Power	Phoenix Contact	MC 1,5/ 3-STF-3,5 18470681
RS422	Phoenix Contact	MC 1,5/ 5-STF-3,5 1847084

Power Connector Pinout

Pin	Function
1	Protective Earth

	<p>PE is not internally tied to Power Ground by default, but a solder jumper can be closed to short internally.</p> <p>Internal RF power limiting diodes shunt to Power Ground.</p> <p>Should be connected to system PE ground externally.</p>
2	Power Ground
3	Vin (9V-36V, 24Vtyp, 4W max)

RS422 Connector Pinout

Pin	Function
1	Power Ground
2	RS422 Y
3	RS422 Z
4	RS422 B
5	RS422 A

RF Pinout

Pin	Function
Shield	Power Ground
Pin	RF

Indicator LEDs

Left LED

Pin	Function
Left Top Green	RF Power

Left Top Red	RF Reset
Left Bottom Green	Ethernet Power
Left Bottom Red	Ethernet Reset

Right LED

Pin	Function
Right Top Green	N/C
Right Top Red	AIS Frame Detect
Right Bottom Green	N/C
Right Bottom Red	N/C

Ethernet Gateway

Ethernet / IP services are provided by a Lantronix xPort module. Several different options are available depending on the assembly option ordered.

Rev B Option 01

Lantronix xPort EDGE - XPE200100B

xPort EDGE features IPV6 and encryption (SSL) support.

The internal AIS module outputs NMEA data at 115,200 baud, the XPort UART must be set to 115,200 baud without reconfiguration of the internal AIS module.

Specifications

Electrical Specifications

Param	Min	Typical	Max	Unit
Input Voltage	9	24	36	V
Input Power, typical RX+Ethernet up @ 24 Vin				W

Input Power, max SMPS, 36Vin, 5V/05A out			4	W
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RF Specifications

Param	Min	Typical	Max	Unit
Input Power, max		-10*		dB
SAW filter center		162		MHz
SAW filter 3dB bandwidth	90	108		kHz
Sensitivity				dB
Internal gain between RF input and radio RX				dB
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, enclosed				mm
Width, enclosed				mm
Height, enclosed				mm
Mass, bare board				g
Mass, enclosed				

Operating Specifications

Param	Min	Typical	Max	Unit
Temperature		20	85	degC
Humidity				%RH

Pressure				bar
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References

TBD

Product Revision History

Date	Comments
SM-2353-B	Initial Release

Document Revision History

Date	Revision	Comments
20260113	-	Draft