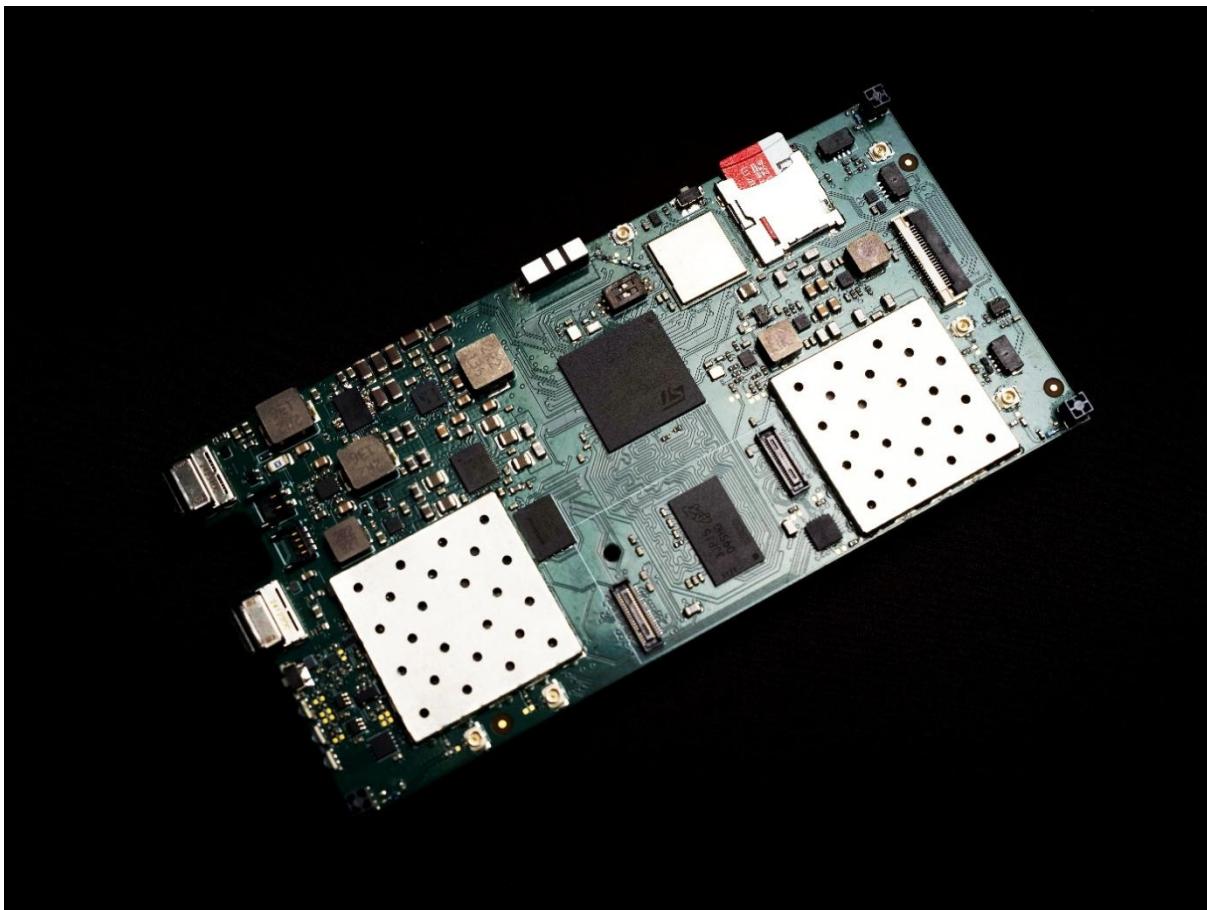


Kaonic 1S – Technical sheet



The Kaonic 1S is Beechat's flagship tactical MIMO SDR platform, scalable from individual units to national networks. Designed and manufactured in Europe with NDAA-compliant sourcing, it meets MIL-STD-461 EMI standards and integrates seamlessly with ATAK, MAVLink, and open protocols. The rugged, embedded Linux-based tactical radio enables secure, decentralised mesh networking in contested, infrastructure-free environments.

Kaonic key features

- Multi-band SDR with sub-GHz (868 / 902–928 MHz) and 2.4 GHz operation
- Frequency-agile, HopSync™ FH (LPI/LPD, zero sync overhead)
- Reticulum mesh protocol – up to 128 hops, end-to-end encrypted
- Spartan-7 FPGA plugin for advanced MIMO PHY and higher throughput
- VANTAGE AI/ML plugin and FRX frequency extender options
- Passive-cooled IP67-ready hardware platform

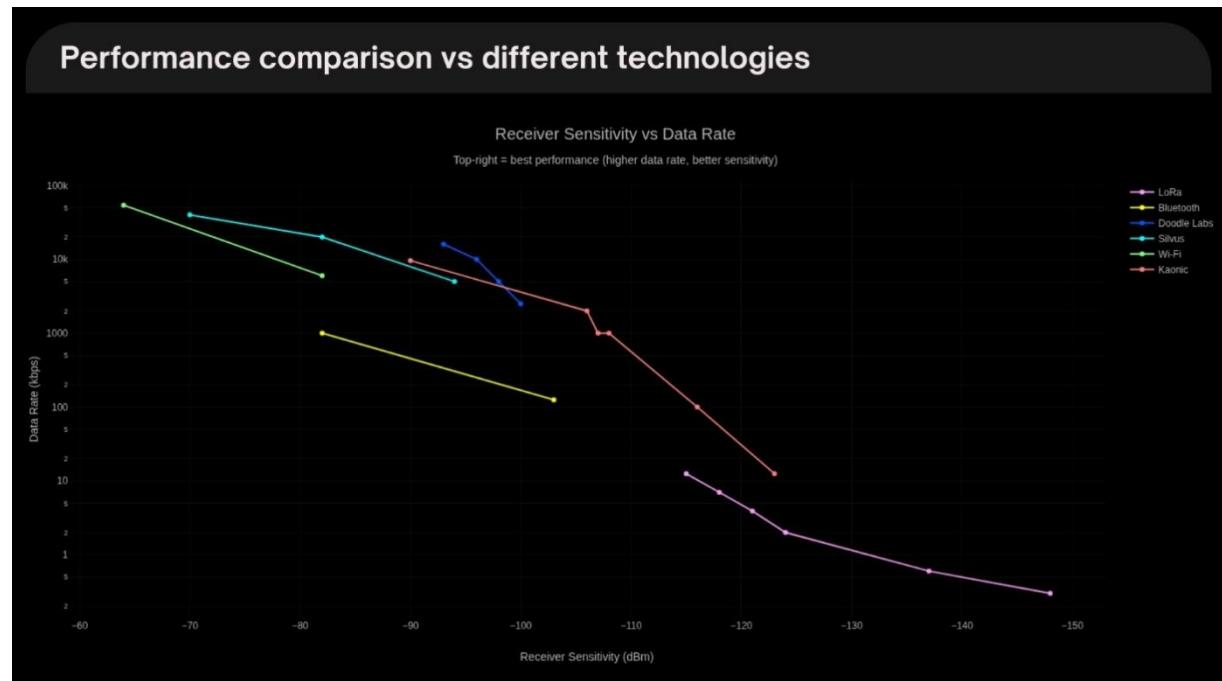
Kaonic applications

- UAS ISR data links and multi-node meshes
- UGV/robotics and autonomous systems
- Tactical off-grid communications
- Perimeter monitoring, SAR, and public safety
- OEM integration into unmanned and sensor platforms

RF Performance Specifications

Parameter	Min	Typical	Max
Operating Frequency	-	868 / 902–928 MHz / 2.4 GHz	-
Sensitivity	-	-123 dBm	-
Max. Throughput (int. baseband; 4 RF chains)	-	4.8 Mbps @ -92 dBm	-
Max .Throughput (with FPGA plugin)	-	14.4 Mbps @ -92 dBm	-
Per-channel RF Output	30 dBm @ MCS0	-	24 dBm @ MCS6
Max TX Power (sub-GHz)	-	1 W EIRP	-
Max TX Power (2.4 GHz)	-	250 mW	-

The chart below illustrates the relative performance of the Kaonic compared to similar radio devices



Electrical Specifications

Parameter	Min	Typical	Max
Supply Voltage Range (VDC)	5 V	-	15 V
Average Current – Idle	-	≈ 0.8 A	-
Power Consumption – RX	-	≈ 1.3 W	-
Power Consumption – TX	-	≈ 11.3 W	-

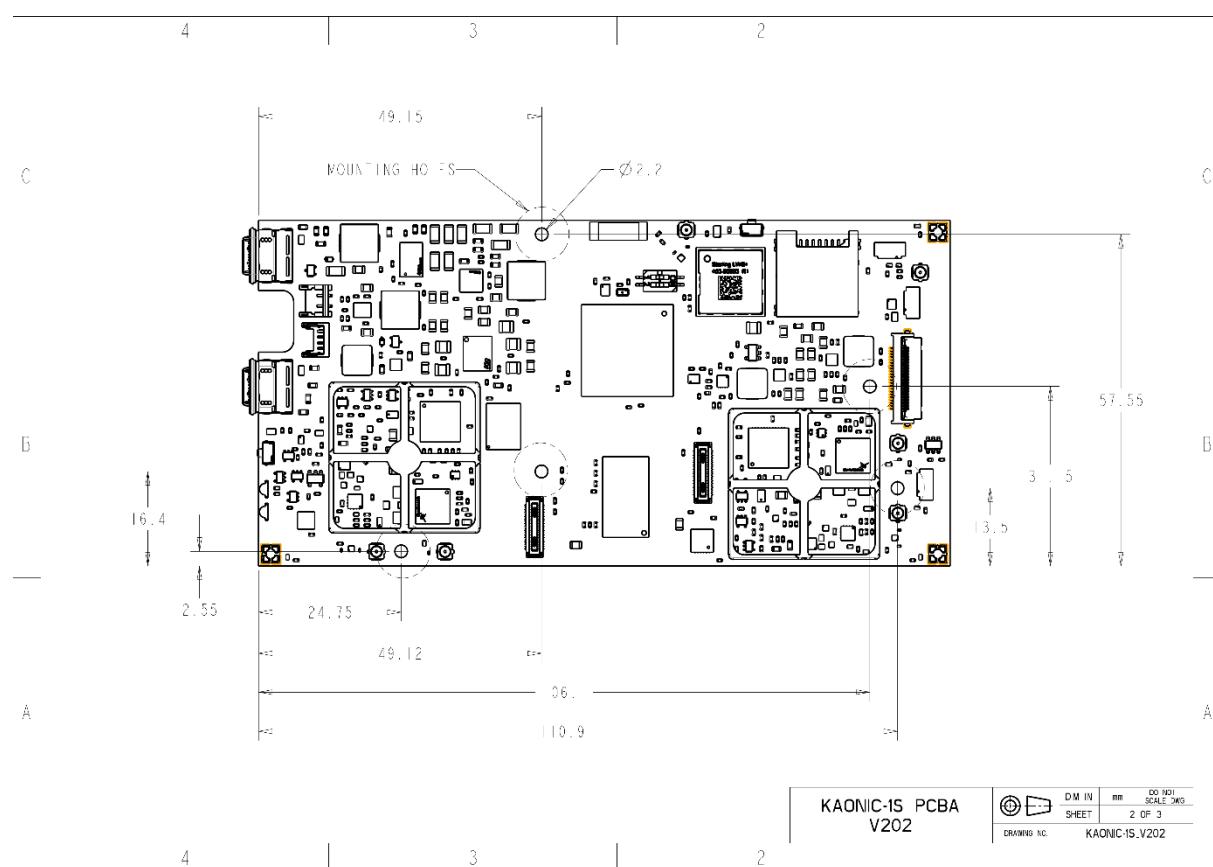
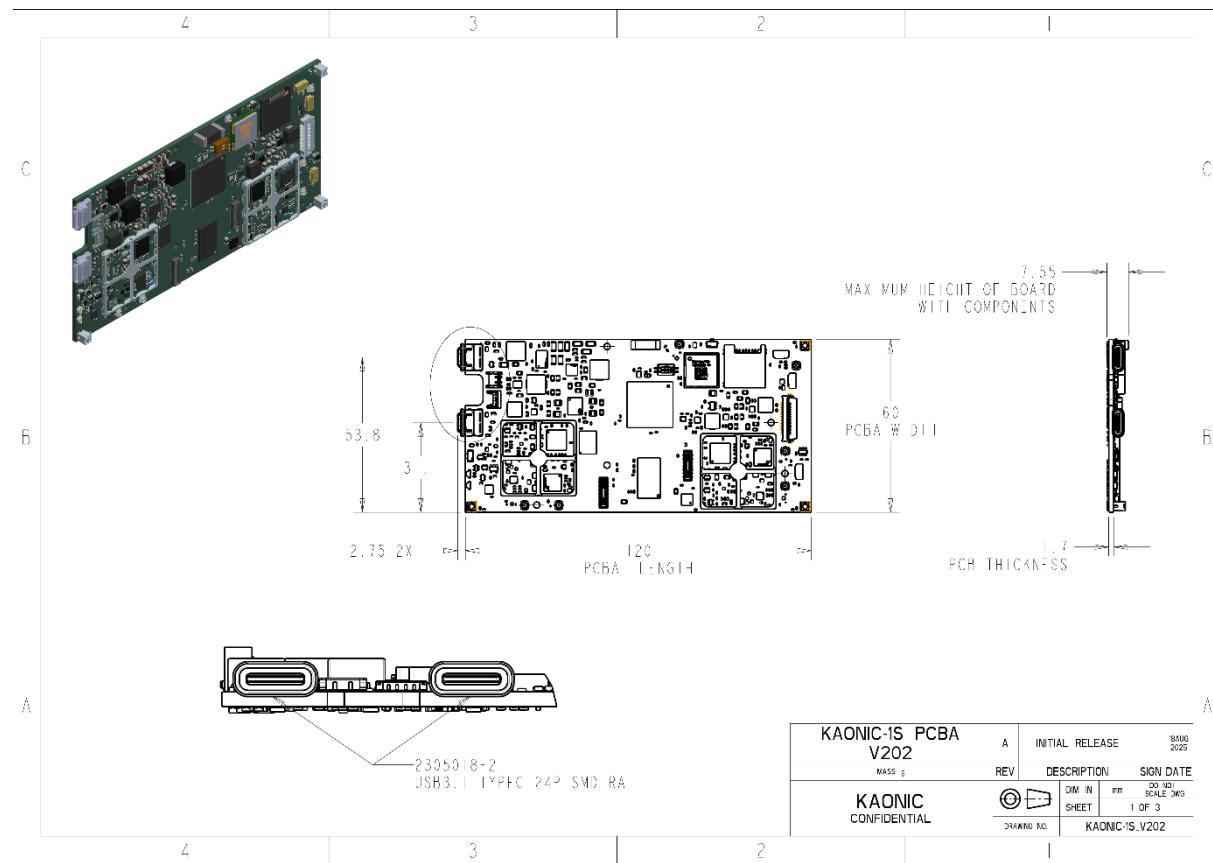
Environmental Specifications

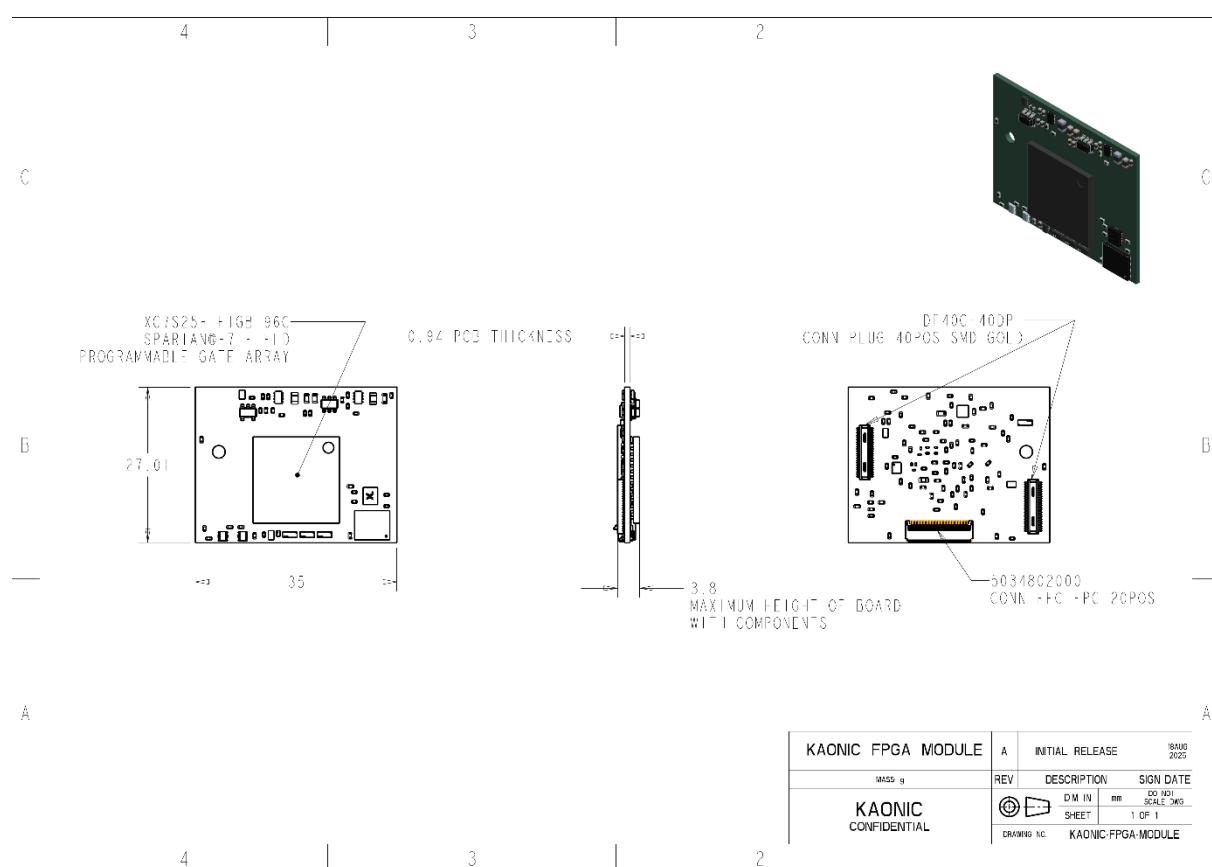
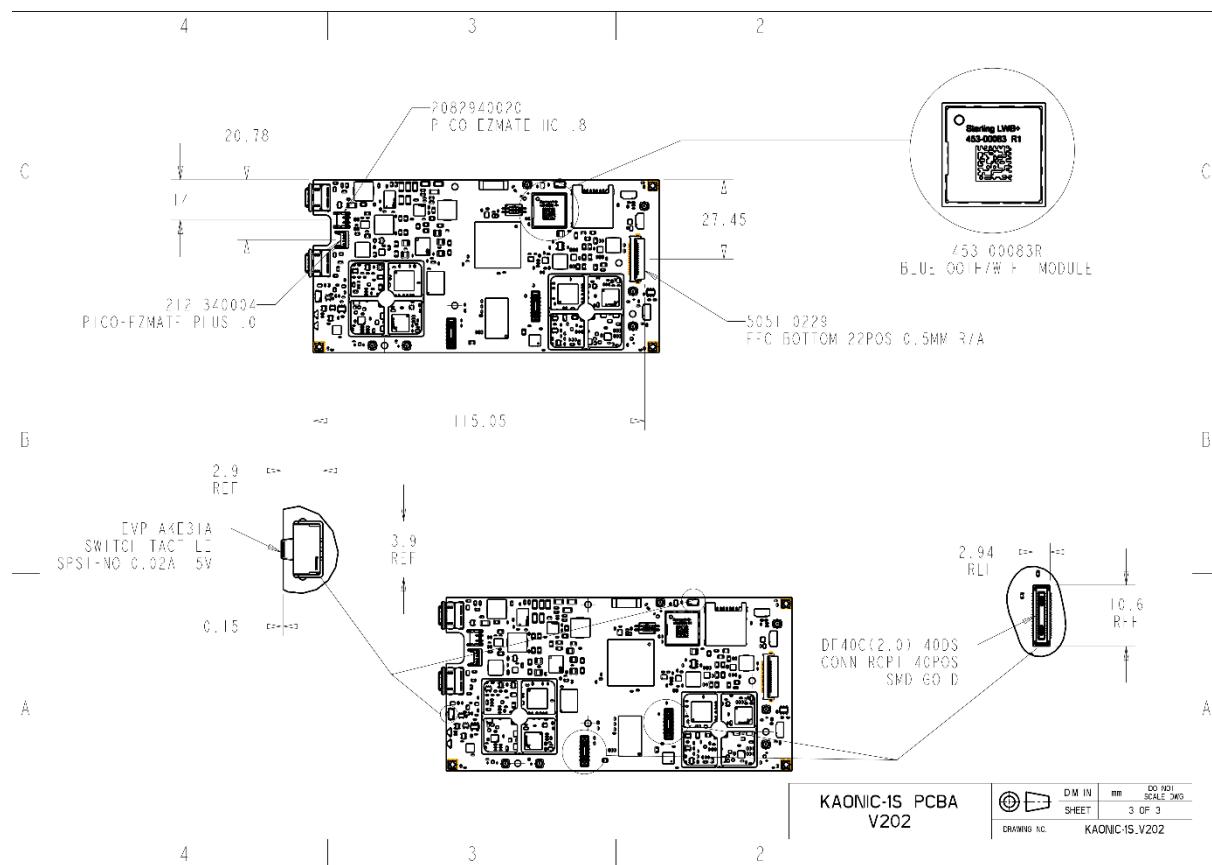
Parameter	Min	Typical	Max
Operating Temperature	-40 °C	-	+85 °C
Cooling	-	Passive	-

Mechanical Specifications

Parameter	Value	Unit	Notes
Dimensions (board only)	120 × 60 × 7.55	mm	L x W x H
Weight (board only)	84	g	-
RF Connectors	4 × u.FL (sub-GHz); integrated 2.4 GHz	-	-
DC Connector	Molex PICO-EZMate HC1.8	-	model 2082940020; mates with 2082982021

Mechanical drawings





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