Site Vantage®
132-960MHz
SV1396

Site Vantage® features enhanced and modern hardware and software architecture designed to support new innovative RF monitoring capabilities. These include, but are not limited to, fast monitoring of forward and reflected transmitted power per channel, measuring Tx to Rx antenna isolation, and monitoring Rx RSSI levels for 80 channels or more. Site Vantage® also boasts a broadband monitoring capability, allowing for RF monitoring in dual or multiband sites using a single device.

With three separate forward and reflected paired power inputs, as well as three separate receive monitoring inputs, the Site Vantage® enables monitoring of multiple transmit combiners and antennas, while also supporting Rx diversity systems or a standalone monitoring antenna, all within one device.

The advanced architecture paves the way for the addition of even more advanced software features in the future, enabling automated periodic RF site maintenance and facilitating remote troubleshooting and fault finding.

Whilst Site Vantage® is compatible with the existing Site Alarm Module (SAM), it also features on-board analogue and digital Inputs as well as Alarm outputs.

Furthermore, the Graphical User Interface (GUI) has been completely overhauled to enhance the user experience through ease of setup and improved data visualisations.

The optional API feature enables live measurement values to be pushed from multiple Site Vantage units to a central database or server over WebSocket protocol in real time.

Key Features:

- Enables remote and automated RF site monitoring and fault finding to minimise on-site maintenance and operational costs.
- Non-intrusive and channelised monitoring of Tx forward and reflected power, VSWR as well as per timeslot Rx RSSI and Rx Noise Floor in multi-channel, digital and analogue LMR systems.
- Advanced RF tests including Tx to RX antenna isolation measurement, RX system characterisation, and Tx carrier rejection measurement.
- Broadband operation supporting frequencies from 132 to 960MHz.
- Fast channel scan rates.
- Three paired FWD and REV inputs and three Rx inputs.
- Broad input voltage range from 12 to 60VDC.
- Advanced cyber security features.
- Supports https and SNMP v3 protocols.
- Integrated Analogue/Digital Inputs and Alarm Relay Outputs.
- Hardware is ready for future advanced RF monitoring software features.
- Onboard RF Auxiliary and Signal Generator ports for easier on-site troubleshooting and advanced remote tests and fault finding.
- Roadmap optional features include Receive Antenna VSWR, Receiver De-sense Detection and Spectrum Analyser.
- Optional WebSocket API feature to send live measurement data from multiple units to a central server in real time.

Australian Provisional Patent Application Number 2024903312 and international patents pending

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Technical Specifications

Model Number		SV1396
Frequency range *MHz*		132-960
Maximum number of monitored channels		80
Available Tx FWD and REV power monitoring input ports		3
Measured RF parameters		Tx forward power per channel Tx antenna VSWR and return loss per channel Rx level per channel and per timeslot Rx composite level Rx noise floor per channel
Supported RF tests		Tx to Rx antenna isolation Rx system characterisation Tx carrier rejection
Rx monitoring port input range *dBm*		-125 to -50
Channel measurement bandwidths **kHz**		6.25, 12.5, 20 and 25
Supported radio protocols		FM (12.5 and 25kHz), P25 (Phase I and II), DMR, TETRA, LSM, dPMR
RF measurement accuracy (typ.) *dB*		±1 (subject to calibration)
Conducted emissions		Complies with FCC part 15 (15.207)
Radiated emissions		Complies with FCC part 15 (15.209)
RF termination connectors		Tx (FWD & REV) Ports: 4.3-10(F), Rx Ports: BNC (F) Test, 10MHz REF and Sig Gen Ports: BNC(F)
Signal generator port configuration range		90 to 960MHz, -10 to +10dBm
Auxiliary port		Can be mapped to any of the Rx, Tx FWD or Tx REV ports
Communication interface port		1 x front mounted, and 2 x rear mounted TCP/IP ethernet ports (RJ45)
Site Alarm Module (SAM) interface		Rear mounted DB9(M)
Programmable inputs and outputs		4 x Inputs (Digital, voltage and temperature sensor inputs) 4 x Alarm / Logic relay outputs
Visual alarm notification		Front panel mounted LED
Configurable alarms		Summary Fault/ Tx FWD power / VSWR / RSSI (Ant Isolation)
Alarm reporting		SNMP v1, v2c and v3 Relay outputs
API Protocol		WebSocket (Licensed)
Power supply		12-60VDC or 100-240VAC with optional plug-pack
DC power connector		Polarised 2-pin Phoenix connector
Power consumption (typ.) *W*		35
Mounting		1RU 19” rack mounting
Net dimensions (incl connectors) *mm* / *in*	H	43.6 / 1.71
	W	483 / 19
	D	239.7 / 9.43
Net weight (maximum) *kg* / *lb*		4.2 / 9.25
Environmental rating		IP20
Operational temperature range *°C* / *F*		-30° to +60° / -22° to 140°
Compliance		FCC Part15 IEC 61000.6.1, IEC 610006.33, IEC/EN 62368-1 AS/NZS 62368.1:2022, AS/NZS CISPR32 :2015 AMD 1:2020 RoHS

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Transmit Antenna Line Coupler Specifications

Model Number		SPxxxx-y440-zFF1RU		
Model Number Frequency Derivative (SPxxxx)		SP1318-2440-zFF1RU	SP3855-4440-zFF1RU	SP7496-4440-zFF1RU
Frequency Range MHz		130-180	380-550	746-960
Insertion Loss (max) dB		0.05dB		
Input and Output Return Loss (min) dB		20		
VSWR (max)		01:01.2		
Coupling Loss dB		40dB (+/- 0.7)		
Directivity dB (min)		27		
Input Power (max) W		750		
Peak Instantaneous Power (max) kW		16 (+72dBm)		
PIM 3rd OIP - 2 x 43 dBm carriers (min) dBc		-140dBc		
Connectors - "To Antenna" / "From Combiner"	SPxxxx-y440-DFF1RU	7/16 DIN(f)		
	SPxxxx-y440-43FF1RU	4.3-10(f)		
Connectors - FWD and RFL coupling ports		N(f)		
Mounting		1RU 19” rack mounting		
Net Dimensions mm / in	H	43.60 / 1.71		
	W	483 / 19		
	D	77 / 3	135 / 5.31	
Operational temperature range		-30° to +60° / -22° to 140°		
Compliance		RoHS		

Receive Antenna Line Coupler Specifications

Model Number		SPxxxx-4440-NNLP1RU		
Model Number Frequency Derivative (SPxxxx)		SP1318-4440-NNLP1RU	SP3855-4440-NNLP1RU	SP7496-4440-NNLP1RU
Frequency Range MHz		130-180	380-550	746-960
Insertion Loss (max) dB		0.5	0.3	0.5
Input and Output Return Loss (min) dB		19		
VSWR (max)		01:01.3		
Coupling Loss dB		40dB (+/- 1)		
Input Power (max) W		50		
Directivity (min) dB		27		
Impedance Ohm		50		
Connectors		N(f)		
Mounting		1RU 19” rack mounting		
Net Dimensions mm / in	H	43.60 / 1.71		
	W	483 / 19		
	D	53 / 2.08	51.4 / 2.02	
Operational temperature range C / F		-25° to +65° / -13° to 149°		
Compliance		RoHS		

SV1396 Ordering Information

RFI Model Number	Description
SV1396	Site Vantage®

Optional Feature Licenses

RFI Model Number	Description
SVLIC-API-PER	Site Vantage Perpetual License – API Feature
SVLIC-API-ANN	Site Vantage Annual License – API Feature (12 month validity)
SVLIC-API-TRI	Site Vantage Trial License – API Feature (7 day validity)

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Antenna Line Couplers

RFI Model Number	Description
SP1318-2440-43FF1RU	Transmit Antenna Line Coupler,130-180MHz, 40dB, 4.3-10 (F) In /Out, N(F) Coupling Ports, 750W, 1RU
SP3855-4440-43FF1RU	Transmit Antenna Line Coupler,380-550MHz, 40dB, 4.3-10 (F) In /Out, N(F) Coupling Ports, 750W, 1RU
SP7496-4440-43FF1RU	Transmit Antenna Line Coupler,740-960MHz, 40dB, 4.3-10 (F) In /Out, N(F) Coupling Ports, 750W, 1RU
SP1318-2440-DFF1RU	Transmit Antenna Line Coupler,130-180MHz, 40dB, 7/16 DIN (F) In /Out, N(F) Coupling Ports, 750W, 1RU
SP3855-4440-DFF1RU	Transmit Antenna Line Coupler,380-550MHz, 40dB, 7/16 DIN (F) In /Out, N(F) Coupling Ports, 750W, 1RU
SP7496-4440-DFF1RU	Transmit Antenna Line Coupler,740-960MHz, 40dB, 7/16 DIN (F) In /Out, N(F) Coupling Ports, 750W, 1RU
SP1318-4440-NNLP1RU	Receive Antenna Line Coupler,130-180MHz, 40dB, N(F) All Ports, 50W, 1RU
SP3855-4440-NNLP1RU	Receive Antenna Line Coupler,380-550MHz, 40dB, N(F) All Ports, 50W, 1RU
SP7496-4440-NNLP1RU	Receive Antenna Line Coupler,740-960MHz, 40dB, N(F) All Ports, 50W, 1RU

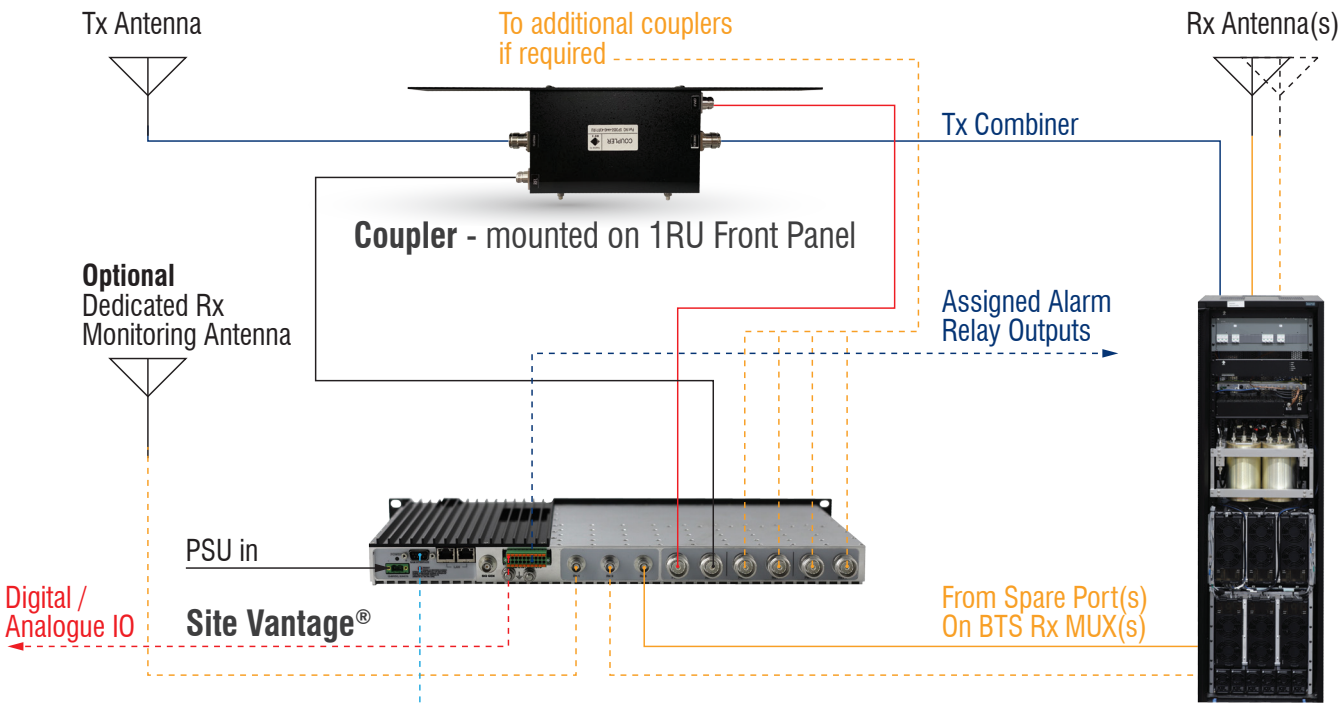
Optional Site Alarm Module

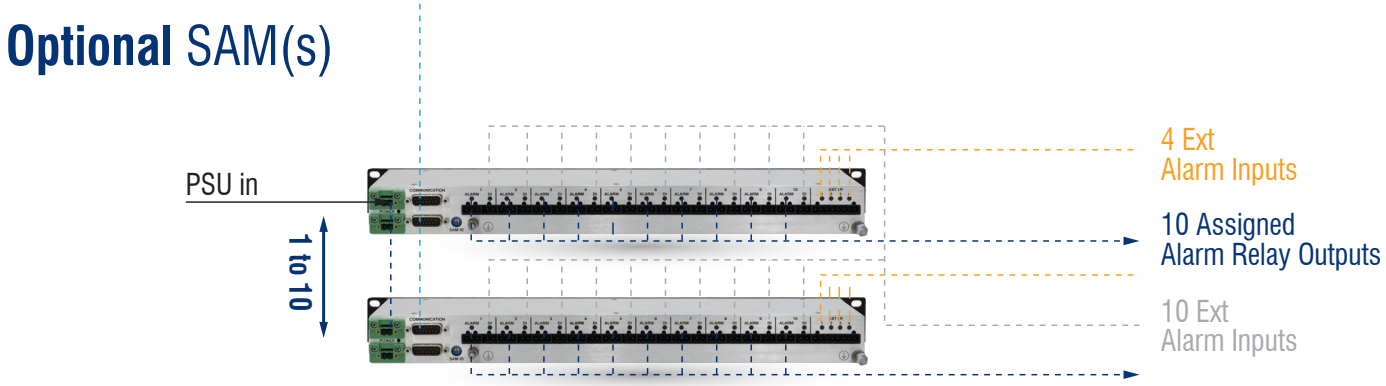
RFI Model Number	Description
SAM0000	Site Alarm Module, 9-36 VDC
SAM0000-48	Site Alarm Module, 36-60 VDC
SAM0000-TS	Site Alarm Module, Temperature Sensor c/w 15ft / 5m cable
SAM0000-CK	Site Alarm Module, Connector Kit, 10 x 2way / 10 x 3way / 1 x 8way connectors

Accessories

RFI Model Number	Description
ASM0048AU-AC	Plugpack 90-264VAC 48VDC c/w 6ft/1.8m AU IEC Power Cable
ASM0048US-AC	Plugpack 90-264VAC 48VDC c/w 6ft/1.8m US IEC Power Cable

Application Diagram





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