SVALE SV-S2 spectrum surveillance station specifications

RF frontend

RF input frequency range:	30MHz - 3GHz (option: 6GHz)
Frequency reference accuracy:	
Initial:	±25 ppm + aging (-10 °C to 55 °C ambient, after 20 minute warm up), aging: <±4 ppm/year
Impedance:	50 Ω
Tuning frequency resolution:	1 Hz
RF input VSWR (typical):	≤ 2:1 (reference level ≥ +10 dBm)
Survival RF input level:	±40 VDC; +23dBm @ reference level ≥ –10 dBm
Maximum RF input operating level:	+15dBm The maximum level at the RF input for which the instrument will meet its measurement specifications.
Amplitude accuracy:	<±3.0 dB
IF bandwidth:	20MHz standard (40MHz optional)
Maximum settling time:	1 second
Displayed Average Noise Level (DANL):	-160dBm/Hz ... -150dBm/Hz @ ref = -50 dBm, input terminated with 50 Ω load
Phase noise:	-127dBc/Hz ... -108dBc/Hz (@ 1 GHz CW signal at 0 dBm)
RBW range:	10 Hz to 10 MHz
SFDR:	≤ -50 dBc(@ signals 10 dB below ref. level of -30 dBm, span ≤ 40 MHz)
TOI:	+14 dBm at reference level -10 dBm, -30 dBm at reference level -50 dBm
SHI:	+55 dBm ... +60dBm (@10 MHz - 3.1GHz / reference level = 0 dBm) +10 dBm, (@10 MHz - 3.1 GHz, ref. level = -40 dBm) <+5 dBm @ 1850-2330 MHz

Communications, control and storage

Internal storage:	256GB SSD (option: 1TB SSD)
Control and data interface:	Internal 4G or Ethernet 100Mbps (front panel)
Instrument tasking:	SVALE API via TCP/IP
Internal antenna rotator controller:	controlled via SVALE API, AZ and EL control, supported rotators: Yaesu G5500 (option: as per customer request)
Internal isotropic antenna control:	EMF measurement support via native interface

S2 housing

Front connectors and controls

- RF IN: 1 x N female / 50 ohms
- GPS aux: N female
- AZ/EL control: HRS circular outdoor graded connector
- Ethernet: Amphenol modular outdoor graded connector
- Ant. control: Multicomp circular outdoor graded connector
- AC/DC power: Binder circular outdoor graded connector
- LEDs: 1 x multicolor led for power, online, measuring and error status

Power supply 24-32V AC, max. 2A or 24V DC max. 2.5A (Power in: 230VAC adapter, option: solar panel)
Operating temperature range –25 °C ... +50 °C
Storage temperature range –30 °C to +70 °C
Relative humidity 0% ~ 90%, non-condensing
Protection class IP65
Physical dimensions: 380 mm x 170 mm x 140 mm
Weight: <5kg, 4.6kg typical

Antenna specifications

Supported antenna types:

- omni directional 30MHz-3GHz (option: up to 6GHz)
- LPDA 30MHz-3GHz (option: up to 6GHz)
- Discone 30MHz-3GHz
- SV-IS1 isotropic antenna 30MHz-3GHz (option: up to 6GHz)

Software specifications

Minimum controller host requirements

CPU:	Intel Core i3
RAM:	4 GB
GPU:	OpenGL 2.0
HDD/SDD:	300 MB free space + additional free space for storing measurement results
OS:	Win 10 64 bit

Recommended controller host requirements

CPU:	Intel Core i5
RAM:	8 GB
GPU:	OpenGL 2.0
HDD/SDD:	300 MB free space + additional free space for storing measurement results
OS:	Win 10 64 bit

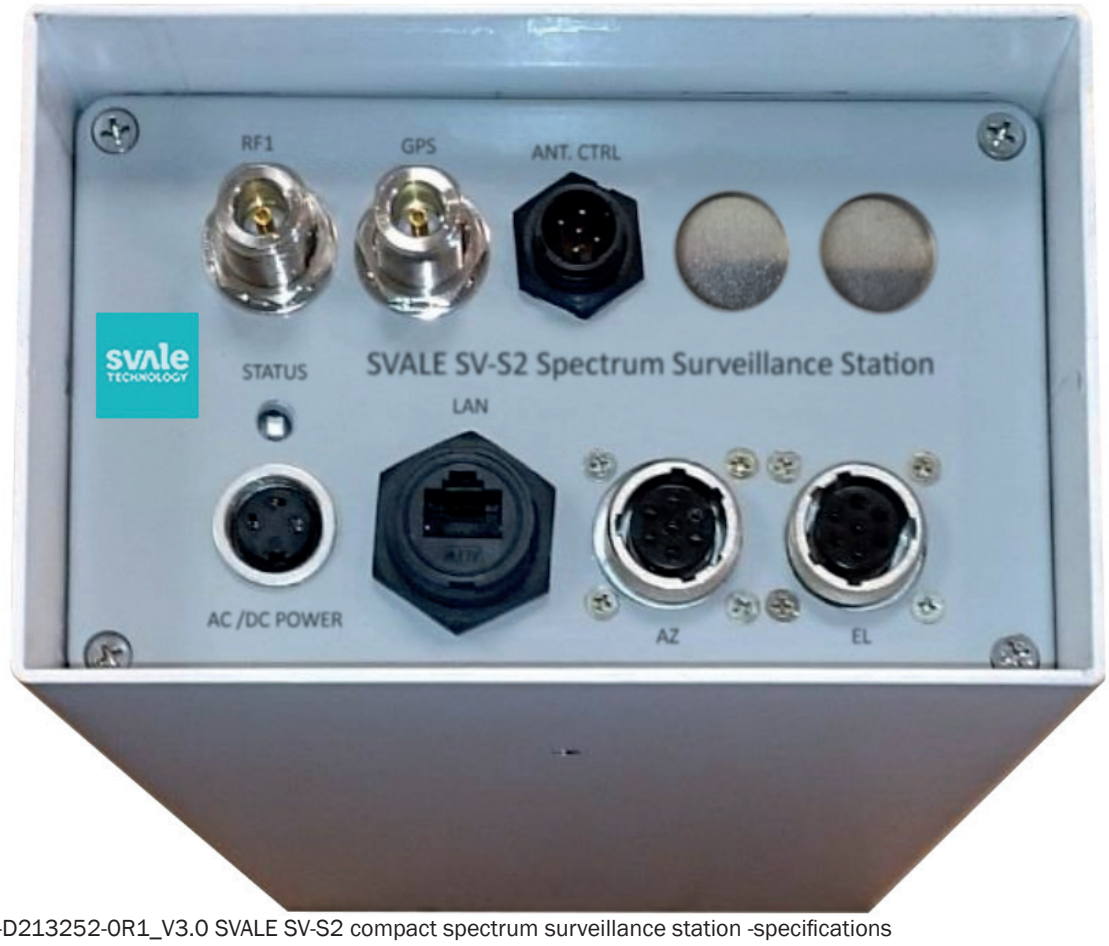
Desktop UI software functions

Manage SV-S2 stations
Configure and schedule measurements
Load and retrieve configurations and measurement results
Display results in spectrogram, waterfall display, field strength - time display, map display to show drive test results

SVALE API tasking interface functions

Configure and schedule measurements
Load and retrieve configurations and measurement results
Supported measurement types:

- streaming measured spectrum data over LAN
- streaming measured IQ data over LAN
- recording spectrum- and IQ data locally, based on predefined scheduling.



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