



The SuperSting™ with Wi-Fi® is a portable resistivity, induced polarization (IP), and self-potential (SP) instrument with memory storage and user-defined measure cycles. It provides the highest accuracy and lowest noise levels in the industry. The instrument comes in two versions: the single-channel version R1 and the eight-channel version R8. The R8 measures up to 8 channels simultaneously for each current injection, making it up to 8 times faster than the R1 model. Both models exhibit the accuracy, reliability and ruggedness that all **Advanced Geosciences** instruments are known for.

The instrument uses a built-in power transmitter and can be used for traditional vertical electrical sounding (VES), mise-a-la-masse measurements, or multi-electrode electrical tomography in 2D, 3D and 4D (time lapse). Other applications include borehole-to-borehole tomography and underwater measurements in rivers, lakes, dams and the sea to investigate bottom conditions.

### Why Wi-Fi?

New mobility allows you to send data immediately to your processing center from the comfort of your vehicle up to 100 meters away (depending on terrain and atmospheric conditions). You no longer need to monitor imaging surveys from the instrument in the field.

Using **Android™ mobile 7-inch or 10-inch tablets or phones**, you can check the electrodes for contact resistance and at the same time control the **SuperSting**, review data in real time, and display pseudosections in stunning colors on Android tablets and phones with AMOLED screens.

### Accessories

- The SuperSting comes with a built-in 200 W transmitter. A series of external high-power, 5-15 kW, transmitters are available for deep IP surveys.
- AGI's **EarthMager** inversion software for 1D, 2D and 3D data processing.
- **SuperSting Remote** for resistivity, IP and SP time monitoring in remote & hard-to-access areas.
- Cables for land, borehole and underwater surveys.
- Electrode streamers for towed marine surveys.
- Stainless steel electrodes, non-polarizable electrodes.
- Manual single conductor cables on reel.

### Applications

- The 8-channel instrument is designed for large surveys when time is of the essence.
- The single-channel unit is designed for smaller surveys when speed of survey is less important.
- Used for resistivity and IP imaging in 2D, 3D and 4D.
- Borehole-to-borehole, and borehole-to-surface measurements.
- Underwater measurements in fresh and salt water.
- Deep IP mineral exploration using the external power transmitter **PowerSting** (5 - 15 kW).
- Ground water exploration.
- Geotechnical investigation for depth to bedrock, cavity detection, stratigraphy and more.

# SuperSting with Wi-Fi

AVAILABLE AS EIGHT- OR SINGLE-CHANNEL MEMORY EARTH RESISTIVITY, SP & IP METER

## TECHNICAL SPECIFICATION

### SuperSting:

<b>Measurement modes</b>	Apparent resistivity, resistance, induced polarization (IP), SP & battery voltage.
<b>Measurement range</b>	+/- 10Vp-p.
<b>Measuring resolution</b>	Max 30 nV, depends on voltage level.
<b>Screen resolution</b>	4 digits in engineering notation.
<b>Transmitter</b>	200 W internal transmitter; external 5 kW, 10 kW and 15 kW transmitters are also available (see separate brochure for specifications).
<b>Output current</b>	1 – 2,000 mA continuous, measured to high accuracy.
<b>Output voltage</b>	800 Vp-p, actual electrode voltage depends on transmitted current & ground resistivity.
<b>Input channels</b>	Two models are available; 8 channel & single channel.
<b>Input gain ranging</b>	Automatic, always uses full dynamic range of receiver.
<b>Input impedance</b>	>150 M $\Omega$
<b>SP compensation</b>	Automatic cancellation of SP voltages during resistivity measurement. Constant & linearly varying SP cancels completely.
<b>Type of IP measurement</b>	Time domain chargeability (M), six time slots measured & stored in memory.
<b>IP current transmission</b>	ON+/OFF/ON-/OFF.
<b>IP time cycles</b>	0.5 s/1 s/2 s/4 s/8 s.
<b>Measure cycles</b>	Running average of measurement displayed after each cycle. Automatic cycle stop when reading errors fall below user-set limit or user-set max cycles are done.
<b>Resistivity time cycles</b>	Basic measure time is 0.2/0.4/0.8/1.2/3.6/7.2 or 14.4 s as selected by user via keyboard. Auto-ranging & commutation adds about 1.4 s.
<b>Signal processing</b>	Continuous averaging after each complete cycle. Noise errors calculated & displayed as percentage of reading. Reading displayed as resistance ( $\Delta V/I$ ) & apparent resistivity ( $\Omega m$ ). Apparent resistivity is calculated using user entered electrode array coordinates.
<b>Noise suppression</b>	Better than 100 dB at $f > 20$ Hz. Better than 120 dB at power line frequencies (16 2/3, 20, 50 and 60 Hz) for measurement cycles of 1.2 s & above.
<b>Total accuracy</b>	Better than 1% of reading in most cases (lab measurements). Field measurement accuracy depends on ground noise & resistivity. The instrument will calculate & display running estimate of measuring accuracy.
<b>System calibration</b>	Calibration is done digitally by the microprocessor based on correction values stored in memory.
<b>Supported configurations</b>	In manual mode; resistance, Schlumberger, Wenner, dipole-dipole, pole-dipole, pole-pole. In automatic mode; any configuration can be programmed.
<b>Operating system</b>	Stored in re-programmable flash memory. New version can be downloaded from the AGI web site & stored in the flash memory.
<b>Data storage</b>	Full resolution reading average & error are stored along with user entered coordinates & time of day for each measurement. Data is automatically stored in a job oriented file system.
<b>Data display</b>	Apparent resistivity ( $\Omega m$ ), current intensity (mA), & measured voltage (mV) are displayed & stored in memory for each measurement. Data can also be displayed on an Android device in real time as bright color pseudosections, IP curves, transmitter/receiver plot, contact resistance measurements & more.
<b>Memory capacity</b>	Virtually unlimited data storage in real time on controlling Android device. The internal SuperSting memory can store more than 79,000 measurements (resistivity mode) & more than 26,000 measurements in combined resistivity/IP mode.
<b>Data transmission</b>	Data can be instantaneously transferred from the Android device by email or by file transfer from the Android device USB port. RS-232C channel available to dump data from the instrument to a Windows type computer on user command.
<b>Automatic multi-electrodes</b>	The SuperSting is designed to run dipole-dipole, pole-dipole, pole-pole, gradient, Wenner and Schlumberger surveys including roll-along surveys completely automatically with the patented (Pat.# 6,404,203) Dual Mode Automatic Multi-electrode system or a passive electrode cable system. The SuperSting can run any other electrode array by using user programmed command files. These are ASCII files that can be created using a regular text editor. The command files are uploaded to the SuperSting RAM memory & can at any time be recalled & run as a survey.
<b>User controls</b>	20 key tactile, weatherproof keyboard with numeric entry keys & function keys. On/off switch. Measure button, integrated within main keyboard. LCD night light switch (push to light).
<b>Display</b>	Keyboard and LCD are mirrored to an Android™ device using Wi-Fi® technology for easy remote control of the SuperSting. Graphics LCD display (16 lines x 30 characters) with nightlight. Android mobile phone screen & 7" or 10" Android tablet bright color AMOLED display.
<b>Power supply, field</b>	12V or 2x12V DC external power, connector on front panel. Optional AC/DC power supply & motor generator.
<b>Power supply, office</b>	DC power supply.
<b>Operating time</b>	Depends on survey conditions & size of battery used. Internal circuitry in auto mode adjusts current to save energy.
<b>Operating temperature</b>	-20 to +50°C when controlled by your Android device (phone or tablet). The instrument LCD screen fades out at -5°C, but the instrument continues to function normally controlled by your Android phone, kept warm in your pocket.
<b>Weight</b>	10.9 kg (24 lb.)
<b>Dimensions</b>	Width 184 mm (7.25"); length 406 mm (16") & height 273 mm (10.75").

### SuperSting Manager App:

<b>Device</b>	Used with various Wi-Fi capable Android devices such as mobile phones, 7-inch & 10-inch tablets. Recommended for tablets; the App may not render properly on all handset devices.
<b>Minimum Android™ version</b>	API 9, Gingerbread 2.3 or above.
<b>Functions</b>	All functions performed using the SuperSting's keypad can be performed using the App's GUI with the exception of baud rate setting.
<b>Real time quality assurance</b>	Color pseudo-section plot, transmitter/receiver pair plot, IP curve plot, contact resistance test results, real time data review.
<b>Data storage</b>	Data storage on Android devices is typically in Gigabyte range, meaning essentially unlimited storage space is available.
<b>Data transfer</b>	Data transfer by email or by file transfer from the Android device USB port.
<b>Wi-Fi range</b>	Up to 100 m, depending on terrain & atmospheric conditions.

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