



# SKS50 Datasheet

## 5G signal strength sensor



The module measures the signal strength from the current 5G cell by the incorporated 5G modem Thales Cinterion ENS22. The modem connects to the cell network via NB-IoT.

Parameters	Specifications
Measured Parameters	For the connected cell: Cell data EARFCN and PCI Signal data RSRQ, RSRP, RSSI and SNR
Frequency bands	(1800MHz), B5(850MHz), B8 (900MHz), B20 (800MHz), B28 (700MHz) The active bands depend on the carrier network and the antenna.
Antenna	SMA connector. A roughly omnidirectional whip antenna is included.
Accuracy	Uncalibrated
Sampling frequency	Values are updated about every 2.5 seconds (ca 0.4 Hz). The value is by default registered at 1 Hz.
Operating Temperature	-40°C ~ +85°C
Supply Voltage	5 – 15 V <sub>DC</sub>
Power Consumption	Peak 70 mA Average 15 mA
Communication	Sparvio SSP
Size	60 mm x 30 x 20 mm without antenna or the antenna connector
Weight	20 gram without antenna

### Usage

Insert a SIM card before turning on the system.

A fixture is included to mount the module to a pole fixed on top of a drone. Note that signal strength depends highly on the antenna characteristics and mounting. Nearby structures may attenuate or amplify the signal in certain directions. The fixture positions the antenna away from the pole, to reduce any signal attenuation in line from the antenna to the pole.



Example of mounting on a pole

The module will automatically connect to the cell network and report the signal strength when connected to a Sparvio system via the blue “SSP” cable.

Multiple SKS50 modules can be combined in the same system, as can all other Sparvio modules.

### LED signals

The following describes the LED of the “SKD1” circuit board, the one with a SSP connector.

When SKS50 is booting, the LED will flash red-green-blue. Afterwards, while ENS22 is being started, the LED will be solid blue (5s), and flash green when startup is complete. If initializing ENS22 fails (for example no SIM card is inserted), the LED will then turn red. If initialization is successful the LED will flash blue each time it receives data from ENS22 when not connected to a cell, and flash green when connected to a cell (and therefore receiving data.)

Under some circumstances ENS22 might be restarted (currently if initialization failed because of some other reason than the SIM card). In such cases the LED will repeat the pattern of solid blue (5s) followed by green flash.

### Sparvio background

The Sparvio system provides a modular, plug-and-play solution for measuring various quantities for UAVs, other environmental studies, lab experiments and education. The system is designed to start immediate measurements without any further integration.