

Spectrum analysers

Frequency band	Overview	Key specifications	Remote control /software	Device manuals and specifications
10Hz-13,6GHz (1 device)	Fast, wide-band spectrum analyser suitable for research.	Real-time bandwidth 40MHz. Resolution bandwidth (-3dB): 1Hz - 10MHz AM/FM demodulation	LAN/ (VPN- <i>Virtual Private Network</i>)	R&S FSV13 <i>Manual: Manual</i> <i>Specifications: Datasheet</i>
9kHz-3GHz (1 device)	Accurate spectrum analyser with lower bandwidth.	Resolution bandwidth (-3dB): 200Hz - 1MHz AM/FM demodulation	USB/ Remote control software, LabVIEW drivers.	R&S FS300 <i>Manual: Manual</i> <i>Specifications: Datasheet</i>
100kHz-3GHz (1 device)	Portable analyser for measuring signal spectrum and communication setups.	Resolution bandwidth (-3dB): 30Hz - 1MHz AM/FM demodulation	USB/ Saving data only, no remote control.	R&S FSH3 <i>Manual: Manual</i> <i>Specifications: Datasheet</i>
100kHz-3,6GHz (1 device)	Portable analyser for measuring signal spectrum and communication setups.	Resolution bandwidth (-3dB): 1Hz - 1MHz AM/FM demodulation	USB and LAN Remote control possible	Manual: Operating Manual Quick manual: Quick Start Guide Specifications: Datasheet
100kHz-1,6GHz (3 devices)	Spectrum analyser for measuring standard radio signals. VSWR bridge included.	Resolution bandwidth (-3dB): 100Hz - 1MHz AM/FM demodulation	LAN/ Remote control with web interface (java)	Hameg HMS1010 <i>Manual: Manual</i> <i>Specifications: Datasheet</i>

Antennas on the roof (~8m from ground):

ADS-B antenna: GP-1090

Wide band antenna (100MHz-3300MHz): ICOM AH8000.

Signal generators

Frequency band	Overview	Key specifications	Remote control /software	Device manuals and specifications
9kHz – 3,2GHz (1 device)	Vector signal generator capable of creating complicated wideband signals.	Integrated real-time function generator with sample rate of 100Ms/s. Modulation bandwidth with integrated source 30MHz, with external source 60MHz. Maximum output power 30dBm. Modulations: AM, FM, Pulse Mod, Phase Mod, I/Q Mod.	USB, LAN/ Remote control with web interface (java). Waveform composing software, LabVIEW drivers.	R&S SMBV100A <i>Manual:</i> Manual <i>Specifications:</i> Datasheet
9kHz-3GHz (1 device)	High frequency signal generator.	Maximum output power 13dBm. Modulations: AM, FM, Pulse Mod, Phase Mod, I/Q Mod.	USB/ Remote control software, LabVIEW drivers.	R&S SM300 <i>Manual:</i> Manual <i>Specifications:</i> Datasheet
35MHz (1 device)	Function generator with two independent channels. Usable for I/Q modulation source. (100Ms/s –Mega samples/sec)	Amplitude up to 10V (Vpp). Modulations: AM, FM, φM, FSK, PSK.	USB/ Remote control software, waveform composing software, LabVIEW drivers.	R&S AM300 <i>Manual:</i> Manual <i>Specifications:</i> Datasheet
1Hz-1,2GHz (3 devices)	High frequency signal generator.	Maximum output power 13dBm. Modulations: AM, FM, PM, FSK, PSK, GATE.	LAN/ Remote control with web interface (java)	Hameg HM8134-3 <i>Manual:</i> Manual
25MHz (3 devices)	Function generator with one output channel.	Amplitude up to 20V (Vpp). Modulations: AM, FM, PM, FSK, PWM.	LAN/ Remote control with web interface (java)	Hameg HMF2525 <i>Manual:</i> Manual

Ostilloscopes

Maximum Frequency	Remote control /software	Device manuals and specifications
40MHz (2 devices)	-	Tektronix TDS1001 <i>Manual:</i> Manual <i>Specifications:</i> Datasheet
70MHz (3 devices)	LAN	Hameg HMO722 <i>Manual:</i> Manual
200MHz (1 device)	-	Tektronix TDS2022 <i>Manual:</i> Manual <i>Specifications:</i> Datasheet
350MHz (1 device)	USB	Hameg HMO3522 <i>Manual:</i> Manual <i>Specifications:</i> Datasheet
300MHz/ 2.5GSa/s (1 device)	USB/LAN	Rohde&Schwarz RTB2004 Quick manual: GettingStarted Manual: Manual <i>Specifications:</i> Datasheet

Other

Soldering station (1 device)	Weller WR 3M
Power meter (1 device)	R&S NRP-Z
Multimeters (6 devices)	Mastech M64 (3 devices), Fluke 117 (1 device), Mastech MAS83L (2 devices)
Network tester (1 device)	Fluke NetTool

Selection of radio receivers	ICOM IC a110 (1 device), Danita 1340(1 device), Cobra19 dx (4 devices) EU Alan42 (4 devices).
Adjustable DC power supplies	HQ Power PS5005 0-50V, 0-5A (1 device), Manson EP-603 12V, 500mA (1device), MW2112 steps 3V 4,5V, 7,5V, 9V ja 12V max 2A (2 devices).
Antennas	Selection of VHF and WIFI antennas.