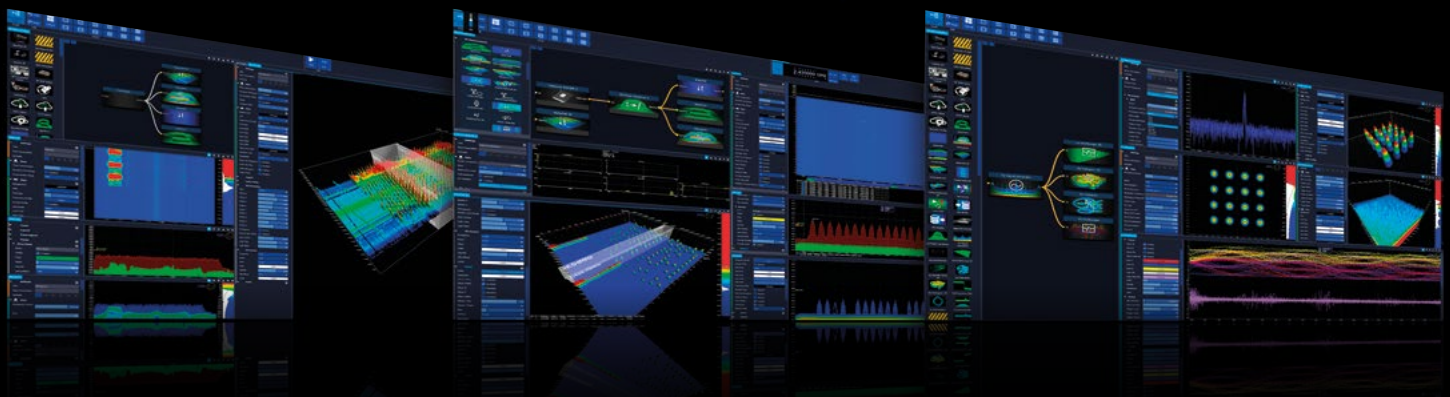
SPECTRAN® V6

BEYOND REALTIME

REALTIME SPECTRUM ANALYZER PLUS



7.2 GHz USB Real-Time Spectrum Analyzer & Vector Signal Generator



- ✔ RF Frequency range of **75 MHz to 6 | 7.2 GHz**
- ✔ Continuous 490 MHz true I/Q streaming
- ✔ Simultaneous measurement of multiple bands
- ✔ Dual USB 3.0 streaming
- ✔ RTSA-Suite PRO software
- ✔ 245 MHz vector signal generator

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MADE IN GERMANY

Highlights

- ✔ Radio Frequency range of **75 MHz to 6 | 7.2 GHz**
- ✔ World's first, dual USB true I/Q streaming spectrum analyzer – ***up to 784 MBytes/s***
- ✔ Scans 6 GHz in less than 5 ms (1 THz/s)
- ✔ Instantaneous bandwidth (complex I/Q) of up to 490 MHz
- ✔ I/Q vector signal generator bandwidth of up to 120 MHz
- ✔ FFT-based POI up to 97 ns
- ✔ I/Q-based POI up to 10 ns
- ✔ Extraordinary dynamic range with a 16-Bit ADC at 2GSPS
- ✔ Sample rate of 500 MSPS (16 Bit Dual 256 MSPS I/Q-Data)
- ✔ FPGA: 930 GMAC/s
- ✔ FFT rate: 960 Million FFT-points/s (120 Million FFTs/s)
- ✔ Full MATLAB support
- ✔ Fully automatic pulse classification (decodes Wifi, BT, GSM, DECT, QPSK, QAM etc.)
- ✔ Stackable accessories
- ✔ Compact and lightweight
- ✔ Includes "RTSA-Suite PRO" spectrum analysis software with regular updates
- ✔ Made in Germany



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Introduction

Fast, compact and powerful

Aaronia presents the SPECTRAN® V6 PLUS, a real-time, high-performance, spectrum analyzer and monitoring receiver designed to capture even the shortest signal transmissions. Its scanning speed and recording time are unrivaled. The analyzer scans 6 GHz in less than 5 ms, making it the world's fastest USB spectrum analyzer.

Perfect for any RF problem

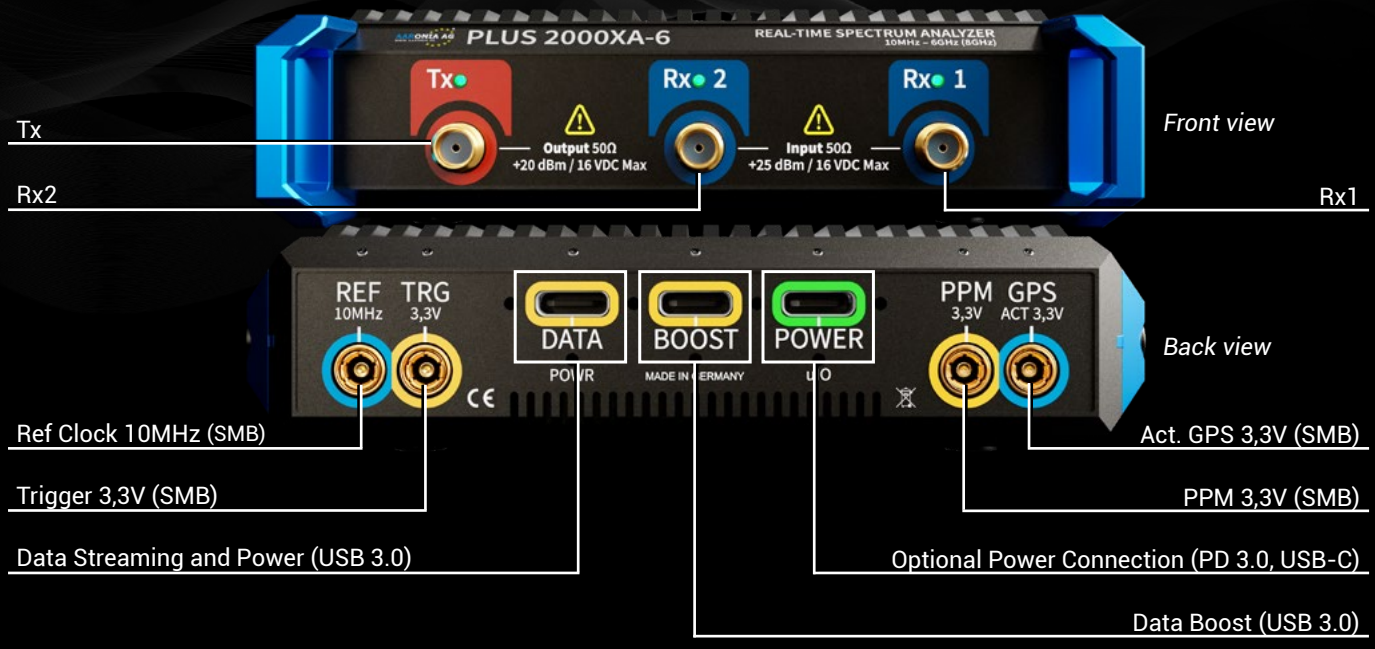
This spectrum analyzer enables you to conquer almost any challenge. Whether it's spectrum monitoring, RF and microwave measurements, Interference hunting, EMC testing or Wi-Fi and wireless network measurements, the SPECTRAN® V6 PLUS is the ideal spectrum analyzer for making reliable and fast measurements.

Compact and lightweight

With a weight of only 850g, the V6 is ideal for measurements in both the field and in the lab. The included analysis software, RTSA-Suite PRO, transforms the V6 PLUS into a fully-featured benchtop spectrum analyzer. The V6 PLUS offers a solution for almost every application.

Made in Germany

The SPECTRAN® V6 PLUS spectrum analyzer and vector signal generator is designed and assembled in Germany, guaranteeing the highest quality standards.

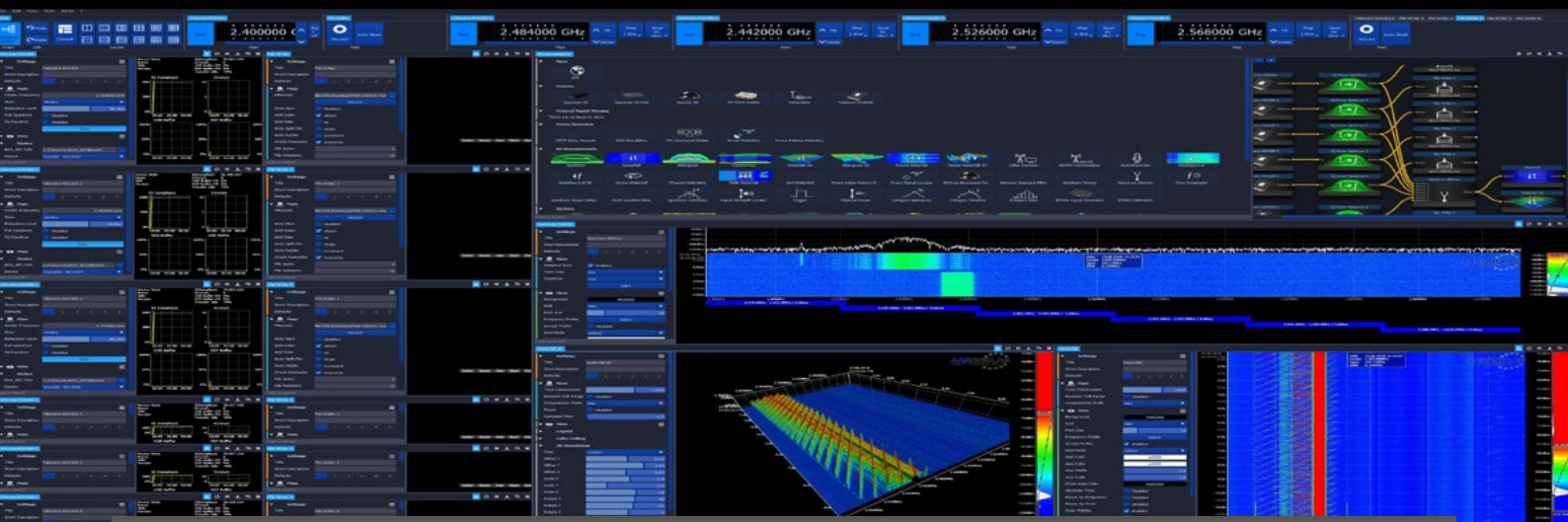


- Real-time USB IQ-streaming
- Ultrawide frequency range from 75 MHz up to 7.2 GHz
- Compact size: 210 x 115 x 30 mm
- Weighs only 850 g
- Included PC software
- Tough, high quality aluminum case
- 50 Ohm RF input and output (SMA)
- Stackable

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RTSA-Suite PRO

World's most powerful RTSA software with endless possibilities!



Aaronia's RTSA-Suite PRO is an extremely powerful and flexible tool with an intuitive and highly customizable user interface. Our node-based software enables users to identify, capture, demodulate and track any signal, and offers a multitude of ways to graphically display the signal detection.

RTSA-Suite PRO – Layout

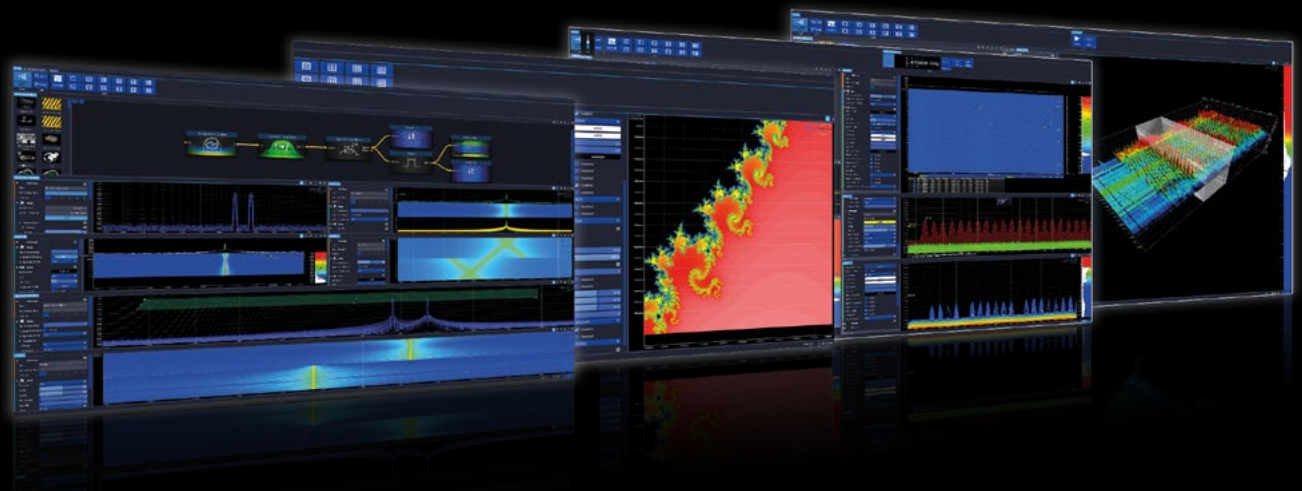
An amazing block solution offers a convenient configuration to match any requirement!



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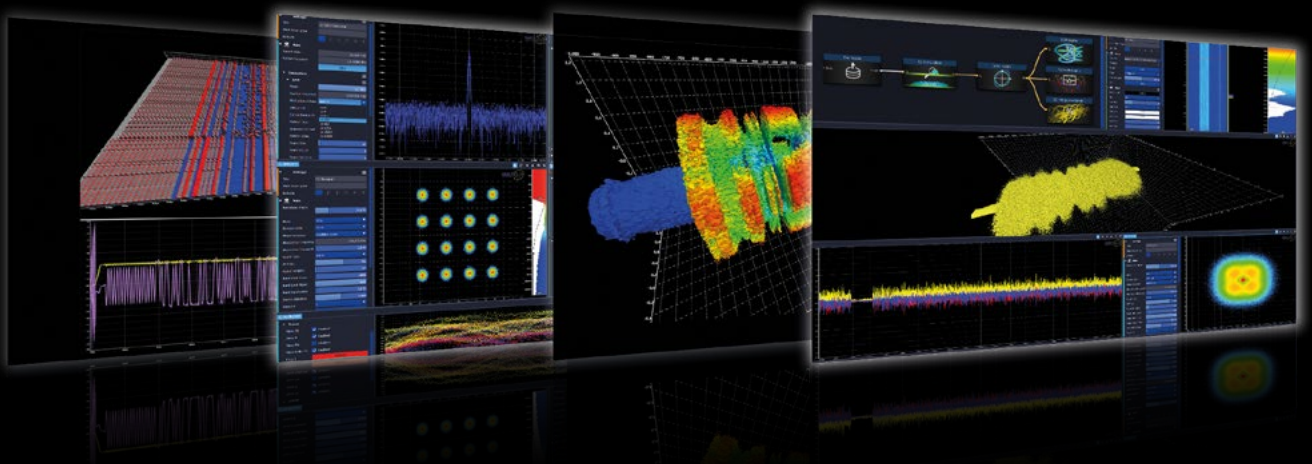
Multiple 2D/3D Spectrum Analysis

Trigger Block *Powerful Script Block* *Various Demodulations* *3D/4D Waterfall*



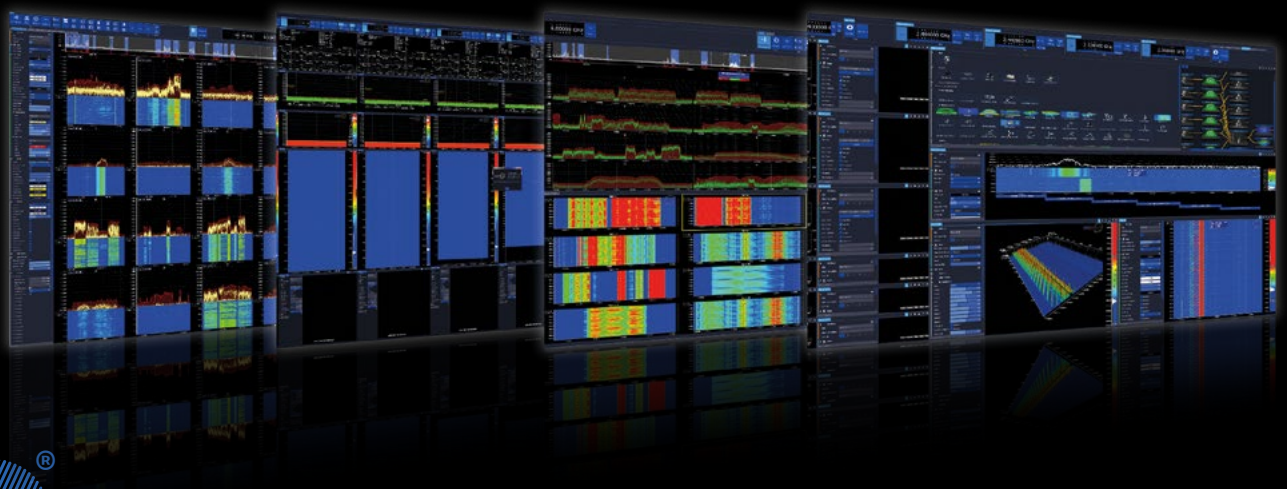
2D/3D IQ Streaming and Decoding

DECT Decoding *Software IQ Generator* *3D IQ Display* *DAB IQ Demodulation*



Multi Unit Stitching and Multi Frequency Monitoring

Multi Frequency Monitoring *Multi Waterfall* *V6 full Frequency Monitoring* *Multi-Unit Stitching*



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WORLD of SPECTRAN® V6 PLUS

Model	RTBW	Speed	I/Os
V6 PLUS 250XA-6*	80 MHz (opt. 120 MHz) I/Q	300/440 GHz/s	1 Rx (opt. 1 Tx)
V6 PLUS 500XA-6*	80 MHz (opt. 120 MHz) I/Q	300/440 GHz/s	1 Rx & 1 Tx
V6 PLUS 2000XA-6*	160 MHz (opt. 490 MHz**) I/Q	730/1100 GHz/s	2 Rx & 1 Tx

* All models are available in OEM versions with e.g. reduced size and weight

Options	Comment
120 MHz I/Q RTBW	V6 PLUS 250XA-6 & V6 PLUS 500XA-6 only
245 / 490 MHz I/Q RTBW**	V6 PLUS 2000XA-6 only
120 MHz Tx	V6 PLUS 250XA-6
WiFi6E Extention 7.2 GHz	Extended frequency band including WiFi6E
Ultra Low Noise Preamp	**Additional 20 dB of gain** (Add 2 for V6 PLUS 2000XA-6)
OCXO Timebase	**5 ppb**, ultra high vibration resistance (±0.1 ppb/g)
Internal GPS	Incl. spoofing detection and active GPS antenna with SMB cable

Accessories

RF over Fiber (Rx/Tx) Set

Converts an RF signal into a laser signal for lossless streaming of data over long distances through a fiber optic cable.



Splitter/Combiner

External, 4 or 6-way, low-loss, splitter/combiner can stitch multiple V6 units together to expand its real-time bandwidth.



26800 mAh Power Pack

External Power Pack with 26800 mAh capacity. Extends the battery runtime by up to 4-5 hours. Strongly recommended for outdoor operation. Stackable.



HyperLOG PRO Antennas

Directional measuring and direction finding antennas with a wide frequency range of 380 MHz to 40 GHz.
Active and passive versions available.



BicoLOG Antennas (20MHz – 3GHz)

Broadband Biconical Antennas for EMC Pre-compliance Tests. Perfect for in-house compliance testing of various EMC standards. With high bandwidth and a gain of up to 41dBi (active).



IsoLOG 3D Mobile (9 kHz – 7.2 GHz)

Compact and lightweight, battery-powered 3 axis antenna with isotropic reception behaviour.
Contains loop and dipole antenna elements and multiple amplifier stages.



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Analyzer Specifications

Specifications	SPECTRAN® V6 PLUS
Frequency range	**75 MHz to 6 | 7.2 GHz**
Real-time bandwidth Rx	Up to 490 MHz I/Q – via 2 x USB
Real-time bandwidth Tx	120 MHz I/Q
POI	Up to 97 ns (FFT-based), 10 ns (direct I/Q-based)
Max. power Rx	+23 dBm
Max. power Tx	+20 dBm
DANL (internal pre-amp on)	Typ. -170 dBm/Hz
Amplitude accuracy (typ.)	Typ. +/- 0.5 dB (compensated by FIR filter)
USB streaming connection	One or two USB 3.0 (USB 3.1 Gen1; USB 3.2 Gen1)
USB bandwidth (2 x USB 3.0)	Up to 784 MBytes/s sustained throughput to PC
Frequency reference accuracy	0.5 ppm (5 ppb via OCXO option)
Min.. RBW (resolution bandwidth)	5 Hz @32k FFT, 1.25 Hz @128k FFT, 157 mHz @1M FFT, 613 µHz @268M FFT
Max. RBW (resolution bandwidth)	200 MHz
Measurement units	Over 20 (e.g. dBm, dBµV, V/m, A/m, W/m², dBµV/m, W/cm²)
Detector	Min, Max, AVG, Peak, QPeak
Attenuator range	50 dB / 70 dB (0.5 dB steps)
Traces	Over 20 (e.g. ACT, AVG, MAX, MIN, QPEAK)
Measurement modes	True IQ or Power/Frequency data
Trigger	Cursor, Measurement, Density
ADC	Dual 2GSPS 16 Bit
DAC	2GSPS 14 Bit (16 Bit via oversampling)
GPS	GPS/QZSS, GLONASS, BeiDou and Galileo (concurrent reception)
GPS synchronisation	+/- 10ns timestamping in each data packet
External frequency reference input	Typ. 10 MHz, max. 3.3VRMS into 50 Ohm (SMB-connector)
FPGA	XC7A200T-2
DSP processing	930 GMACs
SDRAM	2 GB
Temperature range (operation)	0 °C to +50 °C (extended -40 to +75 °C)
Dimensions	210 x 115 x 30 mm
Weight	850 g
Power	USB 3.2 Gen 1 Type-C PD 3.0
Power consumption	Typical 15 W
Country of origin	Germany
Recommended calibration interval	2 years

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References

Selected Aaronia Clients

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Government, Military, Aeronautic, Astronautic

- NATO, Belgium
- Department of Defense, USA
- Department of Defense, Australia
- Airbus, Germany
- Boeing, USA
- Bundeswehr, Germany
- NASA, USA
- Lockheed Martin, USA
- Lufthansa, Germany
- DLR, Germany
- Eurocontrol, Belgium
- EADS, Germany
- DEA, USA
- FBI, USA
- BKA, Germany
- Federal Police, Germany
- Ministry of Defense, Netherlands

Research/Development, Science and Universities

- MIT – Physics Department, USA
- California State University, USA
- Indonesian Institute of Sciences, Indonesia
- Los Alamos National Laboratory, USA
- University of Bahrain, Bahrain
- University of Florida, USA
- University of Victoria, Canada
- University of Newcastle, United Kingdom
- University of Durham, United Kingdom
- University Strasbourg, France
- University of Sydney, Australia
- University of Athens, Greece
- University of Munich, Germany
- Technical University of Hamburg, Germany
- Max Planck Inst. for Radio Astronomy, Germany
- Max Planck Inst. for Nuclear Physics, Germany
- Research Centre Karlsruhe, Germany

Industry

- IBM, Switzerland
- Intel, Germany
- Shell Oil Company, USA
- ATI, USA
- Microsoft, USA
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- Audi, Germany
- BMW, Germany
- Daimler, Germany
- Volkswagen, Germany
- BASF, Germany
- Siemens AG, Germany
- Rohde & Schwarz, Germany
- Infineon, Austria
- Philips, Germany
- Thyssenkrupp, Germany
- EnBW, Germany
- CNN, USA
- Duracell, USA
- German Telekom, Germany
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- NBC News, USA
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- VIAVI, Korea
- Wilkinson Sword, Germany
- IBM Deutschland, Germany
- Nokia Siemens Networks, Germany

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