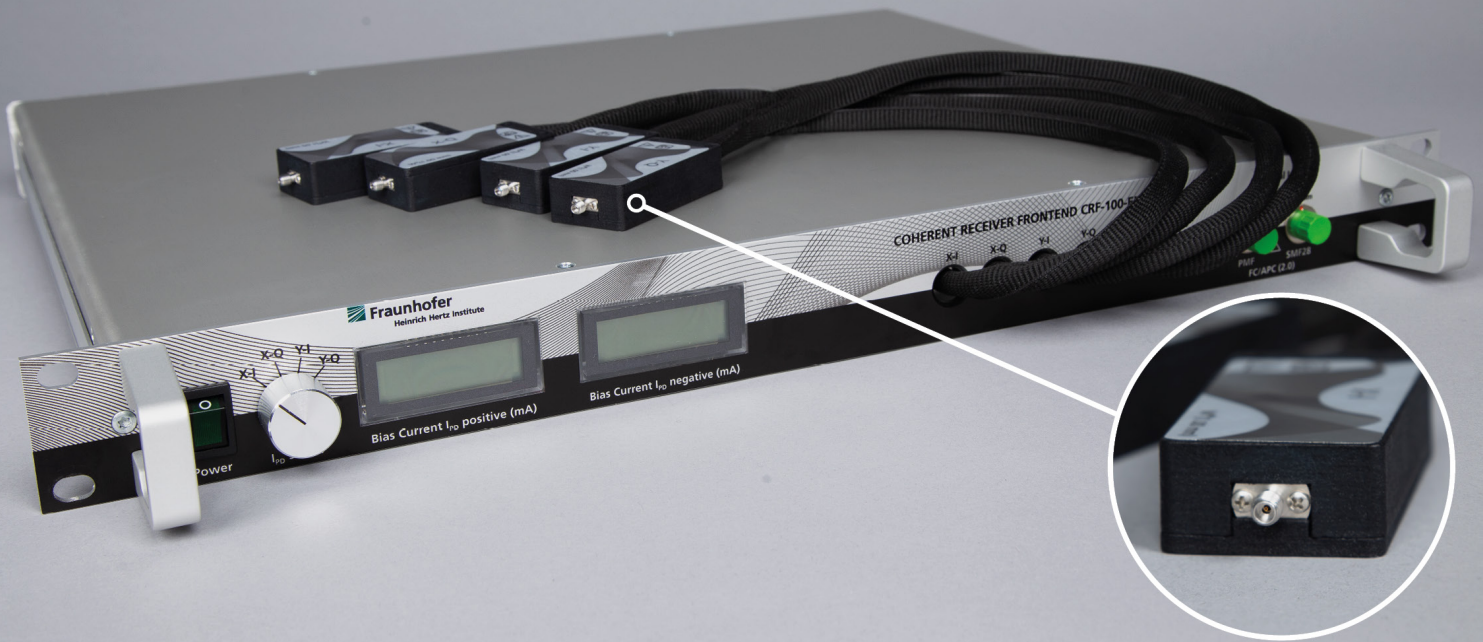


100 GHz COHERENT RECEIVER FRONTEND



AT A GLANCE

Optical coherent receiver in a compact 19"-chassis with 100GHz bandwidth

Optional LO Laser for C- or L-Band included

Coherent detection of high-speed optical dual-polarization m-PAM and m-QAM signals

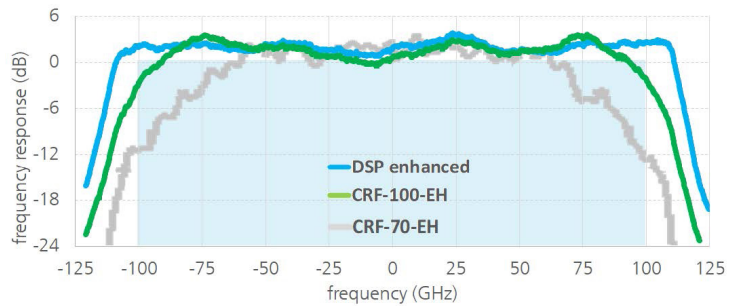
Applications

- 100 GHz Coherent optical receiver in a compact 19"-chassis
- 4 optical extender heads for direct connection to high-bandwidth oscilloscopes
- 1 mm (W) connector, ruggedized version on request
- Coherent receiver with integrated PBS, 4 BPD and optical 90° hybrid
- Coherent detection of high-speed optical QPSK and m-QAM signals
- Simultaneous polarization diverse coherent detection of I/Q
- Optical inputs for local oscillator and data signal
- C+L-band operating λ range

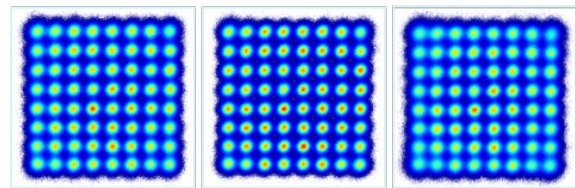
Technical Background

- Test and measurement up to 100 GHz
- Development of multi-Terabit transmission systems and components
- Polarization-diverse detection of highspeed signals with various modulation formats (m-PAM, m-QAM, 4D)
- Coherent receiver frontend for single-mode optical data transmission
- O/E converter for detection of arbitrary optical waveforms
- High-resolution optical spectrum-measurements

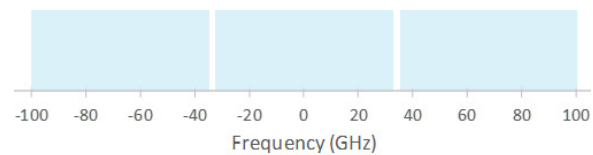
	CRF - 100 - EH
Operating wavelength range (nm)	C-band / L-band (1520 – 1625)
3dB cut-off frequency (GHz)	100
Average CRF responsivity (Sig mA/W)	> 40
Common mode rejection ratio (dB _c)	< -20(DC)
Imbalance I _{sig} and I _{LO} (dB _o)	< 2 (DC)
Phase deviation (deg)	< +/- 8.0
Optical Return Loss (dB _o @1550nm)	> 35
Polarization extinction ratio for Sig & LO (dB _o)	> 20
Internal local oscillator laser	Optional
Optical extender head	Yes
Optical connectors	FC/LC/E2000-APC
HF-connectors	female W®
Dimensions (W x H x D in mm)	482 (19") x 45 x 460



200 GHz Detection Bandwidth



Joint Detection of 2.3 Tb/s Superchannel



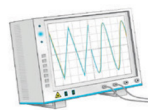
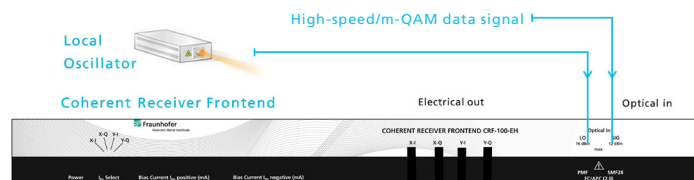
3 x 64-Gb/s 64-QAM

Dr. rer. nat. Colja Schubert
 Photonic Networks and Systems

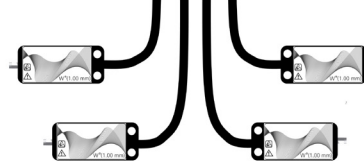
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Real-time Oscilloscope



Typical setup using the 100 GHz coherent receiver frontend

Analog-to-Digital Converters for real-time processing

