



**Lukas Felderhoff**  
Space Systems Engineer  
lukas.felderhoff@iq-technologies.berlin



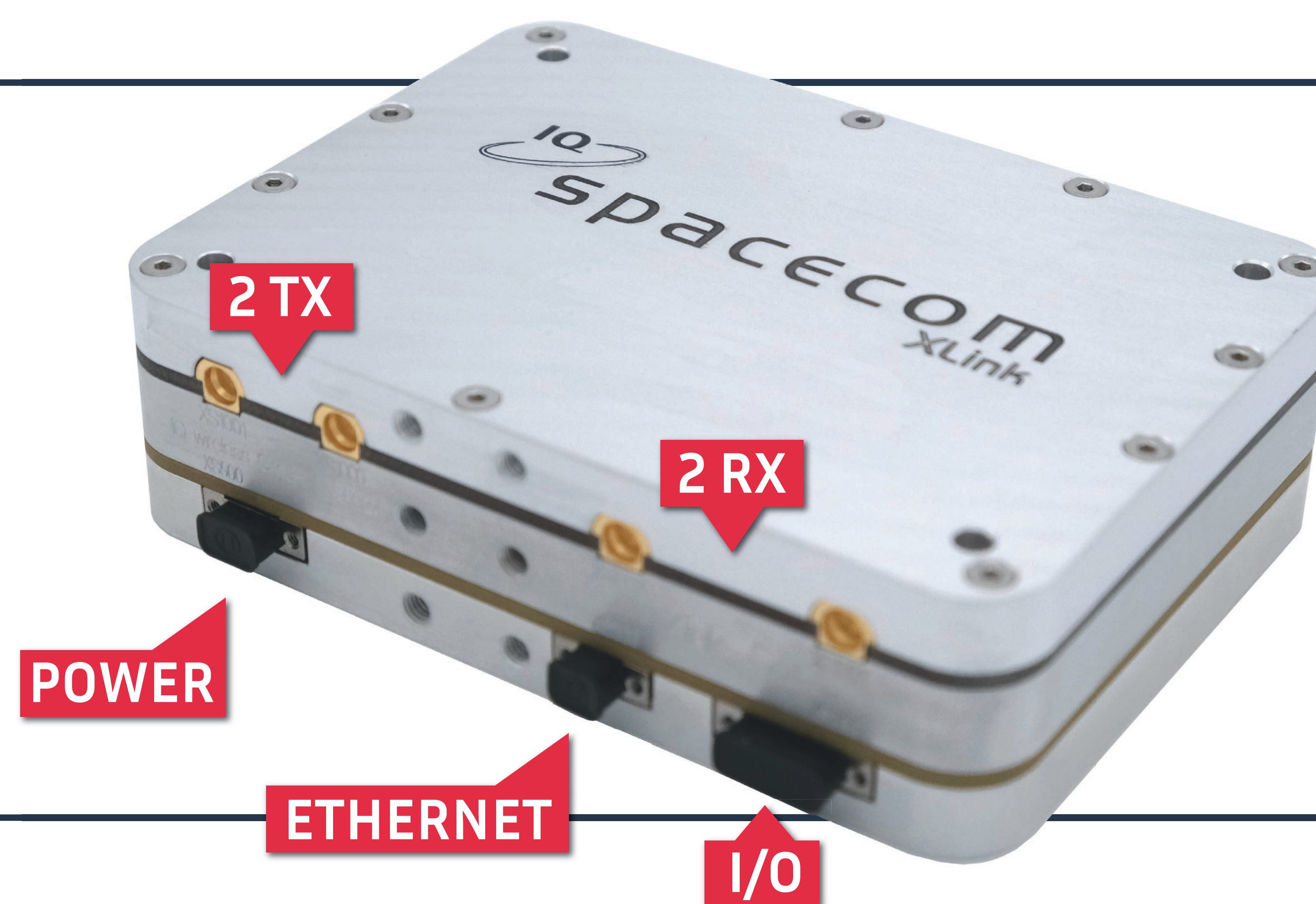
**Mathias Reibe**  
Head of Engineering / CTO  
mathias.reibe@iq-technologies.berlin

## PIONEERING MULTI-BAND COMMUNICATION FOR SMALLSATS: OVERCOMING TECHNICAL BARRIERS WITH INNOVATIVE SOLUTIONS

	<b>L-Band</b>		<b>S-Band</b>		<b>X-Band</b>		<b>Ka-Band</b>	
	1.518 GHz 1.675 GHz		2.025 GHz 2.290 GHz		7.145 GHz 8.500 GHz		25.5 GHz 27.0 GHz	

Communication links are required to be more flexible and more efficient. A **multi-band, multi-protocol, and multi-way communication architecture** for telemetry/telecommand (TM/TC) functionalities as well as high-speed-data-rate broadband payload transmission is shown. The focus is set on **hybrid configurations** such as S-Band transceivers paired with X-Band transmitters and combinations of S- and Ka-Band systems, which offer enhanced operational flexibility. Such solutions will be provided in a compact **single unit** for efficient communication.

- Low SWaP
- Highly reliable COTS Design
- CCSDS Protocol Compliant
- Suitable Patch Antennas
- TRL-9



### System Parameters

**Data Rate Tx:**  
2 kbps ... 200 Mbps

**Data Rate Rx:**  
2 kbps ... 4 Mbps

**Ultra Small Size:**  
90x65x25 mm<sup>3</sup>  
200 grams

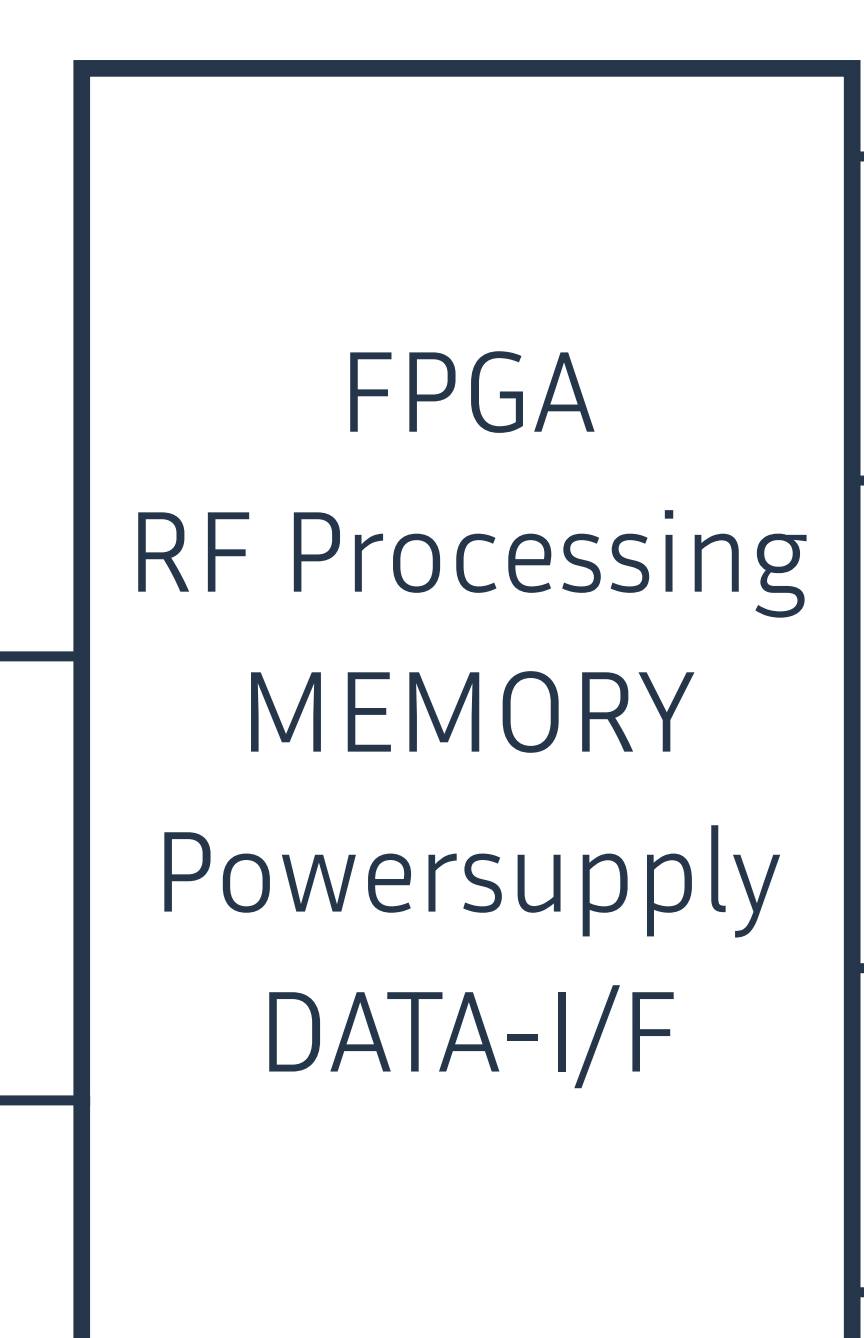
**Low Power Consumption:**  
11 W (Tx + Rx)

**DC Supply Voltage:**  
6 - 18 V / 28 V

**Linear RF Output Power:**  
2x up to +30 dBm

DATA I/O  
• Ethernet  
• SPI  
• UART  
• CAN  
DC-Power

#### SDR PLATFORM



#### RADIO FRONTEND

