Slink/ Slink-Phy

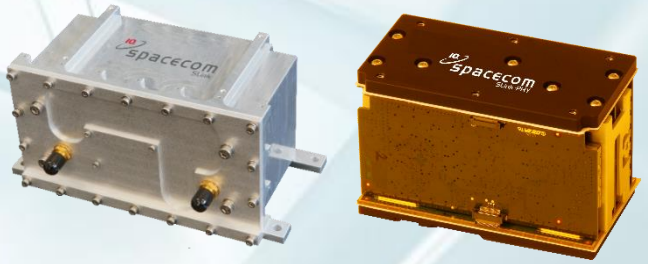
S Band Transceiver for Small Satellites

06-19

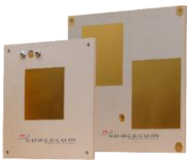
Highlights

- **High-speed data links from/to LEO**
- **Micro, nano or pico satellite usage**
- **Bidirectional communication links**

Sat2Gnd / Telemetry	**up to 20 Mbps**
Gnd2Sat / Telecommand	**64 kbps+**
ISL	**64 kbps**



The **Slink/ Slink-Phy** transceiver system provides a huge payload data downlink for micro, nano or pico satellite applications and the benefit of an additional data uplink for telecommand.
It is designed as a highly integrated S Band transceiver system with outstanding technical performance and versatile configuration options. The radio system can be adjusted in a frequency band between 2.200 and 2.290 GHz for downlink (Sat2Ground) and between 2.025 and 2.110 GHz for uplink communication links (Ground2Sat), e.g. for telecommand purposes. An adaptation for various data rate requirements is possible.
Slink/ Slink-Phy provides the physical layer (RF link) in an Open Systems Interconnection model (OSI). It is fully transparent to higher layer protocols and is alternatively realized specifically or according to CCSDS recommendations. For this reason, standard satellite ground station transceiver equipment can be used for bidirectional radio communication with the satellite.
For customer specific applications, a correspondent transceiver ground station equipment is available. The payload and TM/TC data are provided transparently as UDP data via Ethernet 100/10BaseT interface.



Features

- Fully featured and transparent bidirectional S band transceiver
- ISL Mode available
- Flight grade tested design
- Compact case and low power consumption
- Extra flat patch antenna design matched to customer specific requirements
- Low cost COTS design
- Short delivery time

Key Specifications

S band TX operation:	2.200-2.290 GHz
S band RX operation:	2.025-2.110 GHz
Operational mode:	FDD / Full duplex
Data rate Ground2Sat: Modulation BPSK	64 kbps+
Data rate Sat2Ground:	Up to 20.0 Mbps
Data rate ISL	Up to 64 kbps
Linear RF output power:	up to +30 dBm
automatic Doppler shift compensation in RX:	up to 65 kHz
Low power consumption:	13 W max (RX+TX) 3 – 4.5 W RX only
DC supply voltage:	7 – 18 V
Data & control interface:	SPI / RS422
Low mass:	420 / 190 grams
Ultra small volume	
TRL:	9

	SLink	Slink-Phy
Tx Frequency Band	2.200-2.290 GHz	
Data Rate (Tx Payload Data)	0.6 – 4 Mbps (Up to 20 Mbps Customer specifically)	
Tx RF Bandwidth	Depends upon Data Rate and Modulation scheme	
RF Power Output (@RF port)	+27 dBm (optionally up to +30 dBm)	
Tx Modulation Scheme	BPSK, QPSK, 8PSK	
Operational Mode	FDD / Full duplex / Half duplex	
FEC Mode	Convolutional Code, r=0.5/0.75, BCH Code (64,56)	
Rx Frequency Band	2.025-2.110 GHz	
Data rate (Rx Payload Data)	64 kbps+	
Rx RF Bandwidth	100 kHz	
Rx Modulation Scheme	BPSK	
Automatic Doppler Removal	up to 65 kHz	
RF Connector Type	SMA, 50 Ω	UMP/SMA, 50 Ω (pigtail cable)
Data Interfaces	SPI (RS422)	
Connector Type	2 x DSub15	Picoblade 10-pins (Power) Hirose DF9-25S (Data)
DC supply	7 – 18 V	
DC Power Consumption	<13 W TX+RX, <4.5 W Rx only	
Mechanical Dimensions	65 x 65 x 137 mm³ (w/o connector)	50 x 55 x 94 mm³ (w/o connector)
Mass	420 grams (including housing)	190 grams (w/o cooling IF)
Temperature Range	-20°C … +50°C	
TRL	9	

SLink & SLink-Phy Product Specification

Optional equipment

- **SLink** transceiver ground station equipment (19” rack, 2HU transceiver with data interface)
- TX/RX S band patch antennas for satellite transceiver app. (single and dual patch)
- Customer-specific designs and turn-key solutions

Product specification may be subject to change without notification.