

**SkyWay-EM All Indoor RF unit (RFU)**  
Two transceivers can be housed in a single RFU.



**SkyWay-EM Signal Processing unit (SPU).** Two radio modems can be loaded into a single SPU.

## Technical Summary

- Frequency Bands: 6 – 11 GHz
- Channel BW
  - 7, 14, 28, 56 MHz (ETSI)
  - 10, 20, 30, 40 MHz (FCC)
- Tx Power: up to 35.5 dBm
- Up to two Gigabit Ethernet Interfaces
- Modulation: QPSK to 256 QAM
- TDM Interfaces: 2 T1/E1 included. Expandable to 63 ports.
- Power Consumption: 130W, typical.
- Dimensions: 3U for RFU, 1U for SPU
- Voltage input: 20 to 60V with automatic polarity detection
- LED Displays for power and hardware status.

Solectek Corporation  
6370 Nancy Ridge Dr. Suite 109  
San Diego, CA 92121  
858.450.1220  
sales@solectek.com  
www.solectek.com

## Feature Summary

- All indoor RF transceiver unit (RFU) and signal processing unit (SPU).
- Highly configurable and field upgradable
- Both RFU and SPU are based on modules for easy replacement
- Supported modes: 1+0, 1+1 MHSB, 2+0, 2+2, and 4+0
- Data throughput up to 1 Gbps
- High output power, factory tuned for each RFU
- Up to 34.5 dBm (standard), 35.5 dBm (high power version)
- Consistent, stable output power
- Independently programmable Tx and Rx channel configuration
- Adaptive Modulation (ACM) and Transmit Power Control (ATPC)

## Product Description

The SkyWay EM Series is designed to complete Solectek's licensed microwave product portfolio for the long-haul, high-capacity backbone application with Tx power output to industry-leading 35.5 dBm at 6 GHz.

With all indoor active electronics modules, on-going maintenance will be easy and cost effective. There is no costly and time consuming tower climb need for repair work or product upgrade. All equipment is rack-mounted for easy replacement.

By using branching units (BU) that are built into each RFU, up to four transceiver units can share a single waveguide and antenna installation. This is highly advantageous because in long-haul applications, antenna/waveguide cost and installations carry significantly more costs than shorter-hop edge links.

In addition, highly efficient branching units use the combination of circulators and filters to provide ample isolation among the channels. This integrated system approach eliminates the guesswork involved in aggregating multiple links at the same installation site.

The radio transceiver allows for one type for each frequency band and the channel selection can be programmed in the field. The Tx and Rx channel centers can be independently assigned. Likewise, the SPU is also based on modular cards, which can be independently replaced or upgraded in the field. This modular RFU/SPU design makes local sparing of individual component much easier and cost-effective.

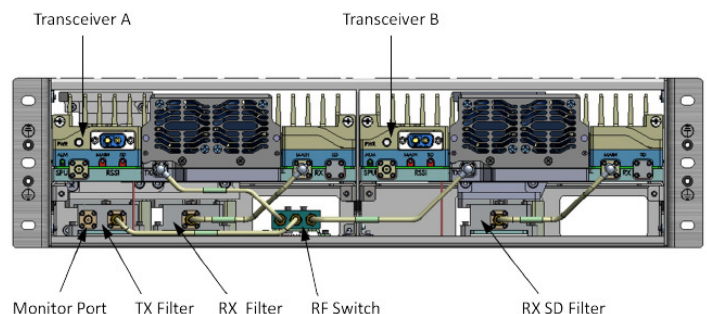
Solectek can provide a complete link solution that includes waveguides and antennas as well as installation services and tower works.

	6L GHz	6U GHz	7 GHz (Future)	8 GHz (Future)	11 GHz
Frequency Range	5.925 – 6.425	6.425 – 7.125	7.125 – 7.775	7.725 – 8.275	10.7 – 11.7
Tx Power (dBm) (Normal version, Higher output power available)	32.5 @ 256QAM 33.5 @ 128QAM 34.5 @ 32QAM 35.5 @ QPSK	32.5 @ 256QAM 33.5 @ 128QAM 34.5 @ 32QAM 35.5 @ QPSK	31.5 @ 256QAM 32.5 @ 128QAM 30.5 @ 32QAM 31.5 @ QPSK	31.5 @ 256QAM 32.5 @ 128QAM 34.0 @ 32QAM 35.0 @ QPSK	29.0 @ 256QAM 30.0 @ 128QAM 31.5 @ 32QAM 32.5 @ QPSK

System	
Duplex Mode	FDD / Full-Duplex
Modulation Mode	QPSK, 16QAM, 32QAM, 64QAM, 128QAM, 256QAM
Modes of Operation	Fixed Modulation (Default) ACM (adaptive coding & modulation) ATPC (adaptive transmit power control)
Channel Bandwidth	
CEPT/ETSI	7, 14, 28, 56 MHz
ANSI/FCC	10, 20, 30, 40, 50 MHz
Data Throughput	1 Gbps (40 MHz, 256QAM, 11 GHz) 800 Mbps (30 MHz, 256QAM, 6 GHz)
RF Sensitivity	-80dBm @16QAM, -75.5dBm @32QAM -74dBm @64QAM, -71dBm@128QAM -68dBm @256QAM <sup>(2)</sup>
QoS	802.1p/q, jumbo frame support, Prioritization (Port-based, VLAN, DiffServ),
Protocol Support	<ul style="list-style-type: none"> <li>Transparent MAC layer bridging</li> <li>Transparent VLAN (802.1q)</li> </ul>
Management	<ul style="list-style-type: none"> <li>HTTP web server, SSH &amp; Telnet</li> <li>SNMP V2 (Private &amp; Enterprise MIBs)</li> <li>Solectek EMS Support</li> </ul>
Latency	~ 200 microseconds
Power Consumption	130W for 1+0, 250W for 2+0, typical Configuration Dependent
MTBF	30 years
Compliance	FCC part 101, Canada SRSP ETSI EN302 217-2-2

Mechanical and Environmental	
Configuration	Indoor rack mounts for RFU and SPU
Size	RFU: 17 x 11 x 5.25 in SPU: 17.5 x 9.4 x 1.75 in
Weight	SPU: 7.5 lbs (3,4 kg), fully loaded RFU: 26 lbs (11.8 kg), 1+1
Temperature	-5 to 45C, indoor
Power	-48V DC, nominal RFU: 20 to 60 V, either polarity SPU: -38 to -56V
Interface	
Data	2 x GigE (RJ-45), up to 63 T1/E1
Power	Connectorized, both RFU and SPU
RFU - SPU cable	Coax, SMA on RFU, TNC on SPU

Notes: 1. Tx output power – based on VHP models. Tx output levels of Standard power models are typically 1-2 db lower than VHP models.  
2. Rx Sens – based on 11GHz, 30MHz channel



Typical RFU Front Panel View for 1+1 Space Diversity application. Two transceiver units are populated along with an RF switch between them.