

Backhaul Markets & Applications

- Wireless Carrier / ISP
- Video Surveillance networks
- Campus / Building-to-building connectivity
- Leased line replacements
- Metro / Core backbone



**SkyWay Excel Series
Unlicensed Backhaul**

Product Summary

The SkyWay Excel Series, Solectek's third-generation OFDM Broadband wireless product line, represents a quantum leap forward in meeting the ever-increasing capacity and distance needs for backhaul across unlicensed spectrum.

Outperforming others in the market, the Excel Series is capable of delivering up to 100Mbps of usable throughput at best-in-class distances. This extraordinary capability is possible through the use of an outdoor grade, purpose-built radio system featuring a highly efficient media access control (MAC) layer and radio transceiver operation with up to 2 stream, 2x2 MIMO (multiple input, multiple out) capability.

Technology Summary

The RF packet transport system of the Excel Series is designed from the ground up for optimized, outdoor use. SkyWay Excel features a high capacity MAC, capable of delivering up to 100 Mbps of usable IP capacity and, unlike competing solutions, preserves performance across long distances. Tuned frame aggregation in conjunction with Solectek's HyperARQ™ intelligent packet retransmission makes the most of the Excel architecture and the limited spectrum.

With the ability to respond to changing RF conditions, the Excel's automodulation system provides an intelligent solution to simultaneously maximize system capacity and link reliability.

Quality of Service (QoS) features within the SkyWay Excel architecture allow tagged voice and video traffic to take priority over general data packet transfer, providing reliable, real-time capability even under congested link conditions. Priority privileges for marked frames are maintained from port to port: Ethernet through RF.

With security always a critical consideration, the SkyWay Excel Series delivers 128 bit AES encryption / decryption at line speed. The AES algorithm was selected to be the standard encryption method of the US Government by the National Institute of Standards and Technology (NIST). In addition, the Excel Series provides up to two levels of AAA protection through the configurable use of 802.1x/Radius and RF MAC authentication.

SkyWay Excel is available in two Series, each offering distinct levels of performance. The Excel 100 Series delivers best-in-class MIMO speed and distance performance with up to 100 Mbps of usable bandwidth at 10 miles (16km). For applications requiring less capacity, the Excel 50 Series is a non-MIMO version offering up to 50 Mbps of usable capacity while featuring all of the advanced features that the 100 Series offers.

Further enhancing deployment flexibility, SkyWay Excel is offered with several antenna options -- an integrated panel antenna, or a connectorized version complete with N-type RF connector(s). Antennas, surge suppressors, cables and other accessories are also available directly from Solectek.

SkyWay Excel Specifications

Models XL5800, XL5802, XL5810, XL5812

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System	XL5800	XL5802	XL5810	XL5812
Operating Mode	TDD/Half-Duplex			
Throughput	Up to 50 Mbps Usable Throughput		Up to 100 Mbps Usable Throughput	
Link Range ¹	up to 10 miles	up to 20 miles, Antenna dependent	up to 10 miles	up to 20 miles, Antenna dependent
Radio				
Frequency	5.350-5.850 GHz ²			
RF Power	Up to 100 mW		Up to 200 mW	
RF Channel Width	20 MHz		20, 40 MHz	
MIMO	SISO only		2 x 2, up to 2 streams	
Modulation				
Settings	OFDM-QAM64, QAM16, QPSK, BPSK			
Modes	Manual, Auto			
FEC	1/2, 2/3, 3/4			
Media Access	Prioritized CSMA			
Antenna	Integrated, 23 dBi	Single N-type Connector	Integrated, 23 dBi	Dual N-type Connectors
Networking				
Ethernet	10 / 100Base-T, Auto-Negotiating, Full/Half Duplex. Max 100m separation between radio and shelter / closet.			
QoS	<ul style="list-style-type: none"> Proprietary frame aggregation HyperARQ™ intelligent packet correction Line speed packet inspection of 802.1p tags 4 Queue prioritization engine RF MAC prioritization 			
Protocol Support	<ul style="list-style-type: none"> Transparent MAC layer bridging Transparent VLAN (802.1q) 			
Management	<ul style="list-style-type: none"> HTTP Web Server Telnet SNMP v1, v2c with Private MIB NTP for server-based, time-of-day support Filterable Event Log 			
Security	<ul style="list-style-type: none"> Line-speed 128bit AES encryption 802.1x/Radius authentication MAC access control authentication 			
Electrical				
Voltage	38.4-57 VDC			
Dissipation	9.6W (avg), 16.8W (pk)			
PoE	Custom PoE Injector, included			
AC-DC Power Supply				
Voltage	100-240 VAC / 50-60 Hz, included			
Efficiency	>85%			
AC Power Cord	3 prong, IEC 320 C13, country specific			
DC plug	Barrel-type, 5.5 x 2.5 x 9.0mm			

Mechanical	Integrated	Connectorized
Radio Dimensions excluding mounting kit	15" x 15" x 4.5" (38 x 38 x 11.5cm)	9" x 9" x 3" (23 x 23 x 7.5cm)
Radio Weight including mounting kit	6.5 lbs (3kg)	5.5 lbs (2.5 kg)
Material	A380 Aluminum	
Finish	Powdercoat. PANTONE 1C, DUPONT	
Network Ports	RJ45 via Environmental Seal, included	
Antenna Ports	none	Ntype (1 or 2)
Mounting Kit		
Dimensions, L x H	6.5 x 3.0" (16.5 x 7.5cm)	
Degrees of Freedom	3 (Elevation, Azimuth, Rotation)	
Adjustment Range	Elevation: +/- 75 deg (external antenna option) Azimuth: +/- 90 deg Polarization: 360 degrees	
Mast Mount Usage	Mast Diameter Range: 0.75-3.0"	
Wall Mount Usage	4 x Clamp through-holes	
Environmental		
	Outdoor Radio	Indoor Injector
Operating Temperature	-30° to +60°C	0° to +40°C
Storage Temperature	-40° to +85°C	-40° to +85°C
Humidity	5-95% condensing	20-80% non-condensing
Ingress Protection	NEMA4 / IP67	IP42
Regulatory		
FCC	CFR47, Part 15	
IC	RSS-210	
EU/CE	TBD	

Notes:

¹ 20 MHz, QAM 16- ½, 2 streams

² Varies by Country

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