

ExcelAir® 70

Fixed Broadband Wireless Access System

3.4 to 3.6 GHz



Description

REMEC ExcelAir® 70 is a scalable, point-to-multipoint fixed broadband wireless access solution, offering service providers quick-to-market deployment of high-speed data and multi-media services for their SME, SOHO and residential customers. ExcelAir 70 provides a highly expandable fixed wireless platform for the simultaneous delivery of IP-based rich applications and circuit based voice and data connectivity services. These multi-service capabilities enable faster capital cost recovery and earlier profitability essential to achieving operators specific business case objectives.

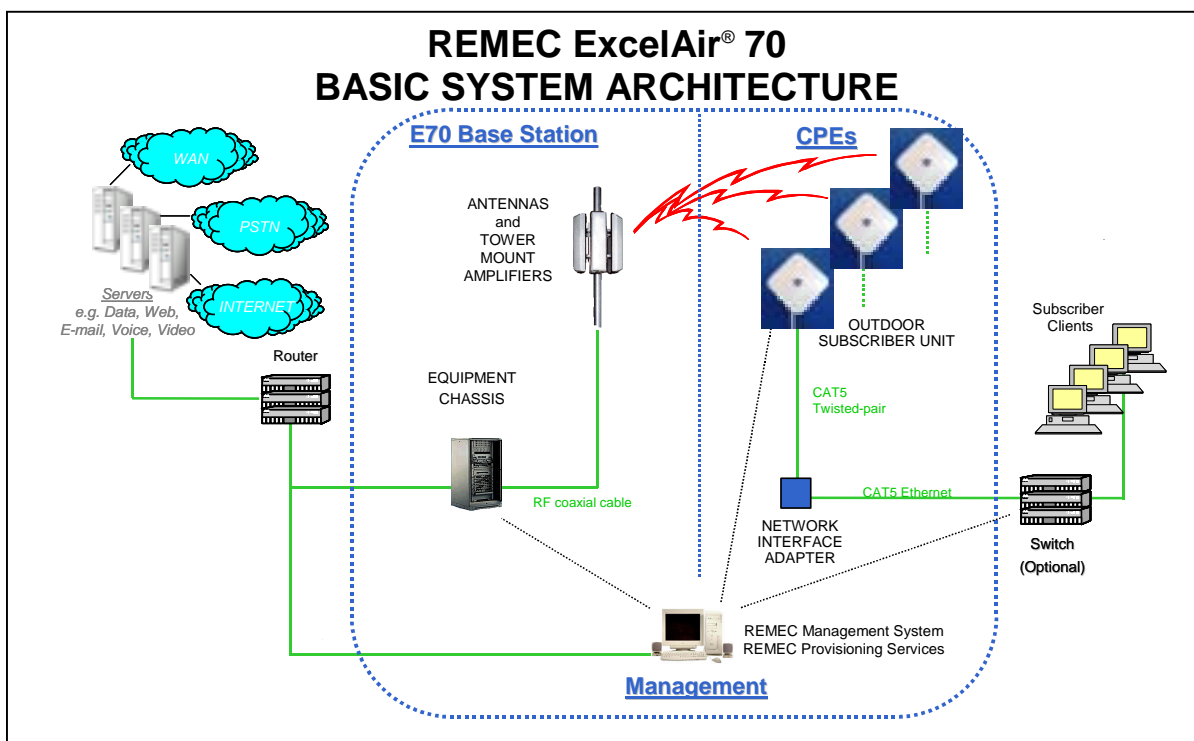
ExcelAir 70 operates over licensed 3.4-3.6 GHz frequency range, and features a standards-based architecture with a low market entry cost. ExcelAir 70 offers optional REMEC EMS management, EPS provisioning, as well as installation utilities, ensuring long-term carrier-grade availability, manageability and performance. Available in tower-mount or rooftop configurations, the system can provide up to 360° coverage utilizing from 1 to 6 sectors, and can be deployed in either single cell or multi-cell schemes. With its flexible, modular architecture, REMEC ExcelAir 70 is the perfect solution for markets requiring inexpensive broadband connectivity with carrier-grade reliability and performance and “pay as you grow” scalability.

FEATURES	BENEFITS
Flexible and scalable architectures <ul style="list-style-type: none"> • 1 to 6 sector cell configurations • Single cell or multi-cell Deployment capabilities 	<ul style="list-style-type: none"> • Low market entry cost • Efficient, “invest where your customers are” deployment Capabilities to target varying subscriber densities • Faster Return on Investment (ROI) • Capital efficient, “pay-as-you-grow” expandability
Standard-based system <ul style="list-style-type: none"> • IP, Ethernet, DOCSIS SNMP, TMN 	<ul style="list-style-type: none"> • Seamless, industry-standard, network capability • Protection against hardware/technology obsolescence • Leverage proven technologies and economies of scale
SectorShape™ Antennas	<ul style="list-style-type: none"> • Efficient spectrum utilization through frequency reuse
Comprehensive solution	<ul style="list-style-type: none"> • End-to-end wireless access system. Ethernet to Ethernet. • Fully managed system • Full services and support offering
REMEC ExcelAir® Management System (REMEC EMS)	<ul style="list-style-type: none"> • Compatible wireless/wireline network manageability • Improved network operational efficiencies • Support for our QoS and SLA guarantees • Carrier-grade availability, manageability, performance • Graphical utilities simplify system installation and diagnosis
REMEC ExcelAir® Provisioning Services (REMEC EPS)	<ul style="list-style-type: none"> • Allows for rapid, wide-scale deployment of subscribers. • Enables "differentiated" services plans. • Scales readily with system growth.
Single, efficient multi-service platform	<ul style="list-style-type: none"> • Support any data/voice traffic mix • Low latency, toll-quality voice services (requires voice gateway)

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Base Station Specifications

Operating Frequency Band Plans	See Table
Passband (Tx, Rx)	32 MHz min.
Access Method	TDMA/FDD
Tx/Rx Separation	100 MHz typ., 50 MHz min.
Modulation supported	Forward Path: 64QAM, 16QAM, or QPSK Return Path: 16QAM or QPSK
RF Channel Sizes	1.75 MHz to 7 MHz
Controllable Physical Layer	Symbol rate, spectrum inversion, forward and return path frequency, modulation, and transmit power level
Forward Error Correction	Reed Solomon
Antenna Gain	17 dB nominal
Antenna Polarization	Vertical and Horizontal
Antenna 3 dB Azimuth Beamwidth	60° nominal
Number of Antennas	1 – 6
Number of RF Sectors (Transceivers)	6
Number of BW Sectors (Modems)	1 – 6
Antenna Pattern Envelope	TS4 per ETSI 302 085 v1.1.1
CPEs Per BW Sector (max. recommended)	500
Transmit Effective Radiated Power	+47 dBm (P1dB)
Transmit Spectral Mask	ETSI EN 301 021 v1.3.1
Receive Threshold Sensitivity (at antenna port)	-82 dBm for QPSK at 10^{-6} BER in 3.5MHz channel -76 dBm for 16QAM at 10^{-6} BER in 3.5MHz channel
Typical Range (16QAM downlink, QPSK uplink)	10 mi / 16 km

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Gross Throughput

Channel Size Examples	Downstream Throughput	Upstream Throughput	Aggregate Throughput (1 BW-Sector)	Aggregate Throughput (6 BW-Sectors)
	16QAM	QPSK		
1.75 MHz	6.1 Mbps	2.6 Mbps	8.7 Mbps	52 Mbps
3.5 MHz	12.2 Mbps	5.1 Mbps	17.3 Mbps	104 Mbps
6 MHz	20.9 Mbps	7.7 Mbps	28.6 Mbps	171 Mbps
7 MHz	24.3 Mbps	10.2 Mbps	34.5 Mbps	208 Mbps
	64QAM	16QAM		
1.75 MHz	9.1 Mbps	5.1 Mbps	14.2 Mbps	85 Mbps
3.5 MHz	18.2 Mbps	10.2 Mbps	28.4 Mbps	170 Mbps
6 MHz	31.3 Mbps	15.3 Mbps	46.6 Mbps	279 Mbps
7 MHz	36.5 Mbps	20.5 Mbps	57.0 Mbps	342 Mbps

*Availability of channel sizes may vary

General Specifications

	Base Station Tower Module	Base Station	Subscriber Transceiver
Temperature	-33° C to +55°C	-5° C to +40°C	-33° C to +55°C
Humidity	10-100% condensing	10-90% non-condensing	10-100% condensing
Power Supply	Powered via Base Station	-48 VDC 35 A	120-240 VAC
Network Interface		10/100 Base-T	10/100 Base-T

Band Plans

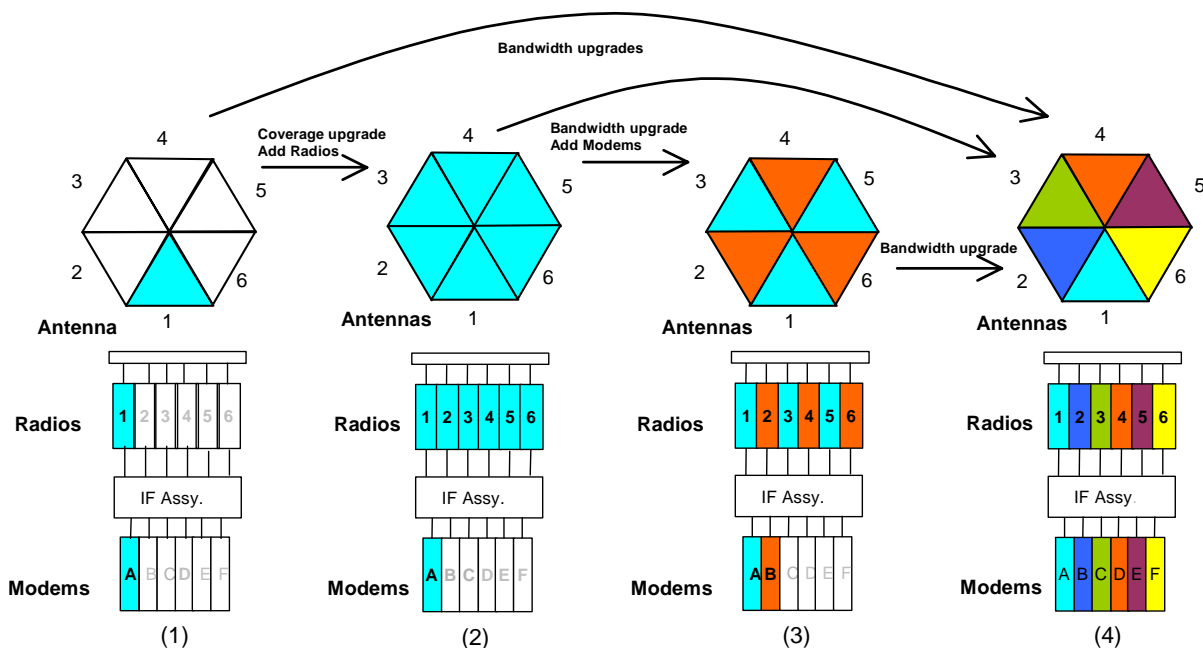
Dash #	Downstream Frequency (Transmit from Base Station)	Upstream Frequency (Receive at Base Station)
A1	3400 – 3425 MHz	3500 – 3525 MHz
A2	3425 – 3450 MHz	3525 – 3550 MHz
A3	3450 – 3475 MHz	3550 – 3575 MHz
A4	3475 – 3500 MHz	3575 – 3600 MHz
A5	Not Assigned	
A6	3399 – 3431 MHz	3499 – 3531 MHz
B1	3500 – 3525 MHz	3400 – 3425 MHz
B2	3525 – 3550 MHz	3425 – 3450 MHz
B3	3550 – 3575 MHz	3450 – 3475 MHz
B4	3575 – 3600 MHz	3475 – 3500 MHz
B5	3563 – 3590 MHz	3463 – 3490 MHz
B6	3499 – 3531 MHz	3399 – 3431 MHz

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Scalability. Easy Upgrades as the Subscriber Base grows



- (1) 60° sector created by driving one RF-sector with one modem output (modem A driving radio for sector 1)
- (2) 360° sector created by driving six RF-sectors using one modem output (modem A split over radios 1,2,3,4,5,6)
- (3) 2 X 180° staggered sectors created by driving six RF-sectors using two modems (modem A split over radios 1,3,5 and modem B split over radios 2,4,6).
- (4) 6-60° sectors created by driving six RF-sectors using six modems (modems A,B,C,D,E,F driving radios 1,2,3,4,5,6)

Detailed descriptions of the ExcelAir 70 system and the ExcelAir[®] Management System (EMS) are available from REMEC. Contact your REMEC field sales representative listed on www.remec.com

RELATED DATA SHEETS

- REMEC ExcelAir[®] CPE3100, 3.5 GHz Integrated CPE
- REMEC ExcelAir[®] Management System (EMS)
- REMEC SectorShape[™] Hub Antenna – Series AMH1000, AMH2000, AMHV2500, AMH3000

Specifications subject to change without notice