Accommodates all data, voice and IP traffic requirements on a single future-proof platform

The industry leading platform: goes the greatest distance, delivering the greatest capacity

Technically and financially outperforms higher frequency links, VSAT and leased lines

Aprisa XE

Point-to-point microwave links distance-engineered for demanding applications

Long range

High capacity

Carrier-class performance

Flexible interfaces

Cost-effective

Reliable

Easy installation and maintenance

Rugged and robust

Interference-free

4RF

WHY DOES THE APRISA XE OUTPERFORM THE COMPETITION?

DISTANCE
Sub-3 GHz licensed frequency spectrum bands means longer links and a more cost-effective network architecture.

THROUGHPUT
64 and 128 QAM modulation, even over long distances, mean greater capacity can be delivered.

FUTURE-PROOF
Legacy and Ethernet interfaces in a single flexible platform make the Aprisa XE suitable for all applications now and in the future.
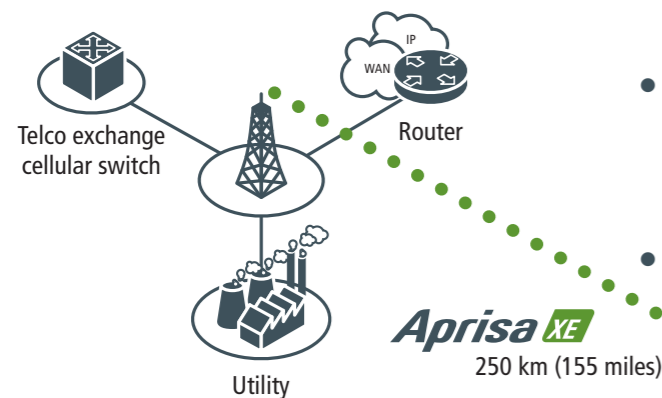
EFFICIENT SINGLE BOX ARCHITECTURE
The Aprisa XE's built-in multiplexer and cross connect eliminate external equipment and minimise the over-the-air requirements.
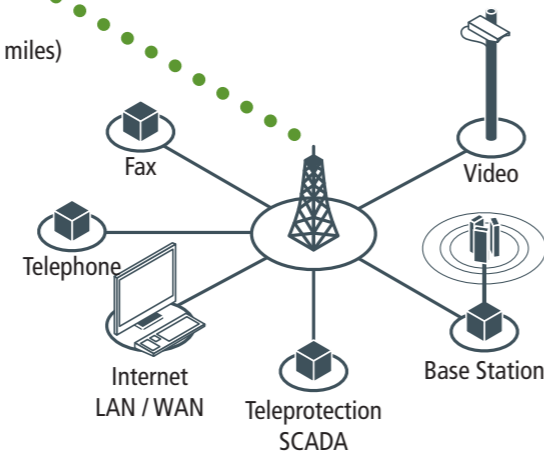
APRISA XE BENEFITS

The Aprisa XE is the technical and commercial choice of customers in more than 120 countries around the world, for all applications and industries, for many reasons:

- **Long range**: a single Aprisa XE link can cover up to 250 km (155 miles), overcoming the problems of water, environmental conditions and topographical obstacles

- **High capacity**: class-leading spectral efficiency and up to 128 QAM modulation make the Aprisa XE perfect for bandwidth-intensive applications, with a single link providing up to 65 Mbit/s capacity

- **Cost effective**: the Aprisa XE has a low total cost of ownership and a rapid return on investment, virtually eliminating operational expenditure and minimising capital expenditure

- **Reliable**: industry-leading reliability for even the most mission-critical applications, even over long distances, with Monitored Hot Standby and Hitless Space Diversity options for redundancy

- **Easy installation and maintenance**: the Aprisa XE's small form factor box is installed rapidly with lightweight grid / Yagi antennas, and Java and SNMP mean easy network management

- **Rugged and robust**: the Aprisa XE can reliably be used in harsh or remote environments, natural disaster scenes and the exposed densely-packed metal structures of transmission towers and offshore oil and gas rigs

- **Interference-free**: licensed sub-3 GHz frequency bands mean interference-free operation for unbeatable reliability

- **Carrier-class performance**: 'five 9s' availability is underpinned by state of the art forward error correction and low latency for unbeatable performance

- **Flexible interfaces**: the Aprisa XE's built-in multiplexer and cross connect efficiently aggregate and transport IP, voice and data traffic, with eight customer-configurable interface slots integrating legacy and today's traffic

Telco exchange cellular switch
Router
IP WAN
Utility
Aprisa XE
250 km (155 miles)
Fax
Telephone
Internet LAN / WAN
Teleprotection SCADA
Video
Base Station

MARKETS AND APPLICATIONS

MARKET		APPLICATION	WHY THE APRISA XE?
UTILITY Electric, gas, and water		SCADA, teleprotection, telphone. mobile radio, LAN, VoIP, video	Safe, efficient, reliable infrastructure supporting range of applications
OIL AND GAS Oil, gas, and mining		Remote monitoring and control, data transfer, broadband web, e-mail and voice services	Coping with the complexity of the link while providing sufficient bandwidth
BROADCAST Radio and television		Linking transmitters in rural and remote locations, interfacing with third party CODEC equipment as needed	Eliminating repeater equipment and real estate through direct long distance links
TRANSPORT Road, rail, air, and maritime		Telephony, signalling, control and ticketing data, teleprotection, PBX, mobile radio, video, LAN	Reliable and safe real-time wide area voice and data communications
PUBLIC SAFETY Security, military, emergency and peacekeeping		Security, control and monitoring data, phone, PBX, Tetra and P25 mobile radio voice, LAN, VoIP, video IP	Dependable communications between field and central command locations
ENTERPRISE Private enterprise, government, hospitals, and schools		Internet access, high-speed data transfer, web hosting, telephony	Low total cost of ownership and easy integration with existing IT infrastructure
FIXED WIRELESS / WIMAX Fixed wireless access networks		Backhauling traffic from fixed wireless access base stations	Making a profitable business case for the provision of rural services
MOBILE Cellular mobile networks		Backhaul of cellular traffic: 2G, 2.5G, 3G, CDMA etc.	Profitable extension of services and subscriber growth without compromising quality of service
RURAL TELECOMS Fixed line networks in rural areas		Basic POTS telephony, DSL extension, high-speed Internet access	Overcoming commercial and technical limitations of other technologies

A SUPERIOR CHOICE

The Aprisa XE is used wherever a reliable, high capacity communications link is needed. Whether to bypass existing infrastructure, replace expensive satellite services or because it's quite simply the only solution that can handle the distance, terrain or climate, the Aprisa XE goes where other products simply cannot.

VSAT REPLACEMENT

The Aprisa XE has significantly lower latency than VSAT, for reliable use in teleprotection and latency-dependent applications. Operational costs are virtually eliminated and data costs do not very quickly become prohibitive. An Aprisa XE link can cover up to 250 kilometres, perfect for cost-effectively reaching rural and remote locations.

- 4RF has deployed many links for VSAT replacement, with better throughput, better availability and greatly reduced system latency.

HIGHER FREQUENCY MICROWAVE

The Aprisa XE, using sub-3 GHz licensed frequency bands, is often used to bypass a network of higher frequency microwave links, owing to the greater distance it can achieve in a single link without being affected by free space loss and atmospheric conditions.

- 4RF is chosen over higher frequency links where capacity is needed, rapidly and cost-effectively, particularly for rural and remote locations.

UNLICENSED MICROWAVE

While unlicensed links are rapid to deploy, they are typically used by private users because there is no spectrum protection, resulting in reduced throughput and interference issues, and service guarantees are not possible.

- 4RF is preferable to unlicensed spectrum: the overhead is minimal compared to the Aprisa XE's guaranteed performance.

LEASED LINES

The Aprisa XE virtually eliminates operational expenditure, and achieves a rapid return on investment, without data costs quickly becoming prohibitive as capacity increases.

- 4RF is chosen over leased lines where greater traffic or greater distances are needed, minimising operational expenditure and providing a rapid return on investment.

SPECIFICATION	APRISA XE	
SUPPORTED FREQUENCY BANDS	300 MHz (330 – 400 MHz)	900 MHz (850 – 960 MHz)
	400 MHz (400 – 470 MHz)	1400 MHz (1350 – 1550 MHz)
	600 MHz (620 – 715 MHz)	1800 MHz (1700 – 2100 MHz)
	700 MHz (698 – 806 MHz)	2000 MHz (1900 – 2300 MHz)
	800 MHz (805 – 890 MHz)	2500 MHz (2300 – 2700 MHz)
MODULATION	Software configurable from QPSK to 128[1] QAM	
CAPACITY	72 kbit/s – 65 Mbit/s	
CHANNEL SIZES	From 25 kHz to 14 MHz (band-dependent)	
INTERFACES	E1 / T1 framed and unframed	V.24 asynchronous, synchronous and over sampling mode
	2-Wire FXO / FXS	High-speed synchronous X.21 / V.35 / RS-449 / RS-530
	4-Wire E&M	10 / 100Base-T Ethernet
MANAGEMENT	Element: Embedded web-based SuperVisor software	
	Network: Any SNMP-compliant NMS platform	

EASY MANAGEMENT AND DEPLOYMENT

INDUSTRY-STANDARD ELEMENT AND NETWORK MANAGEMENT

The Aprisa XE SuperVisor application, an embedded Java™-based application, provides management on an element level. The easy to use SuperVisor application is remotely accessible from any location and provides the following functionality:

- Summarise by links or by terminal
- View and configure interfaces, capacities and port settings
- Configure Layer 2 Ethernet settings
- View alarm summary and detailed information
- View summary or constellation performance information
- Carry out maintenance and software upgrades

An Aprisa XE network of links can be managed with industry-standard SNMP network management packages, for easy integration with existing infrastructure.

DESIGN EXCELLENCE

The Aprisa XE's design and production excellence enable it to outperform other products:

- High linearity transmitter supports 64 and 128 QAM modulation for greater throughput
- Superior receiver design provides low noise reception and handles high interference environments
- Forward Error Correction and transversal equaliser combat multipath interference
- Superior duplexer filter provides isolation and filtering between transmitter and receiver
- Innovative mechanical construction, building the transmitter and receiver on separate circuit boards, provides high isolation of spurious leakage signals

HITLESS SPACE DIVERSITY

Path protection is provided by the Aprisa XE's hitless space diversity (HSD) option. The two box solution protects against signal fades and increases the overall path availability. With this configuration, links survive transmitter or receiver failure.

MONITORED HOT STANDBY

The Aprisa XE's monitored hot stand by (MHSB) option provides complete equipment redundancy, ideal for mission-critical communications or where there is limited site access. MHSB comprises a two radio solution for complete peace of mind.

INTERFACE EXPANSION

The Aprisa XS expansion shelf is used for interface expansion, aggregating analogue and digital interfaces onto E1 bearers. It comprises a standard Aprisa XE chassis, standard motherboard and power supply unit, with a QJET interface card supporting fractional E1/T1. Each Aprisa XS expansion shelf can accommodate up to seven Aprisa XE interface cards for interface expansion.

NOTES

1 Unreleased: Please contact 4RF for availability.

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