



CEL-FI QUATRA 4000e

Multi-Carrier Hybrid Active DAS for
3G/4G/5G Voice and Data



Spotty cellular coverage, poor voice quality, dropped calls, and dead zones continue to plague employees and visitors in enterprise buildings. To solve that problem, Cel-Fi QUATRA 4000e is an affordable, all-digital active DAS hybrid solution that provides uniform, high-quality cellular signal throughout any building. This industry-leading system is also carrier approved and guaranteed network safe.

The system utilises Cat5e cabling for RF and Power over Ethernet, with no signal attenuation to the Coverage Unit (CU) embedded service antennas. In addition to being the most powerful solution on the market, QUATRA is cost-effective and designed to be installed within days (compared to months typical of other solutions).

Perfect for creating the ideal system, Cel-Fi QUATRA 4000e is scalable to fit buildings of all sizes. Depending on the environment, size, and space, the system utilises one or multiple Network Units (NUs), with each one providing power and distributing signal to up to six CUs. Together, the NUs and CUs support four operators.



IntelliBoost® Chipset

The Nextivity IntelliBoost® baseband processor is the first six-core processor designed specifically to optimise the indoor transmission and reception of 5G/4G/3G wireless signals. With advanced filtering, equalisation, and echo-cancellation techniques, Nextivity has developed an architecture that delivers unprecedented in-building data rates and pervasive 5G/4G/3G connectivity. The IntelliBoost® processor ensures that Cel-Fi products never negatively impact the macro network while providing maximum coverage.



Off-Air or SuperCell Mode with Fiber Expansion



Network Safe and Carrier-Approved with No Noise Guaranty

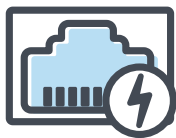


Remote Monitoring and Management via WAVE Platform



100dB

Up to 100 dB Max Gain for 3G/4G/5G Voice and Data



All Digital Category Cable PoE/RFoE Solution



Scalable Up to 12,000 m² Coverage per Network Unit



CEL-FI QUATRA is designed to be scalable for installers

CEL-FI WAVE COMPATIBILITY

Providing control and optimisation insight, the Cel-Fi WAVE Portal is a web-based platform that enables an operator or integrator to remotely monitor equipment and network KPI's, such as channel configurations, RSRP, RSRQ, SINR, and system gains.

NETWORK SAFE

All Cel-Fi systems employ self-organising edge intelligence to constantly monitor power levels and donor-to-server antenna RF feedback with active echo cancellation. This automatically ensures maximum coverage power without interfering with operator networks and other local radio systems.

OFF-AIR CONFIGURATION

QUATRA systems are capable of retransmitting donor signals from outdoor directional antennas to indoor locations. Unlike typical BDA amplifiers, each operator channel is individually processed and power controlled to achieve full coverage power. This eliminates channel-to-channel coverage power variations due to differences in power of donor signals.

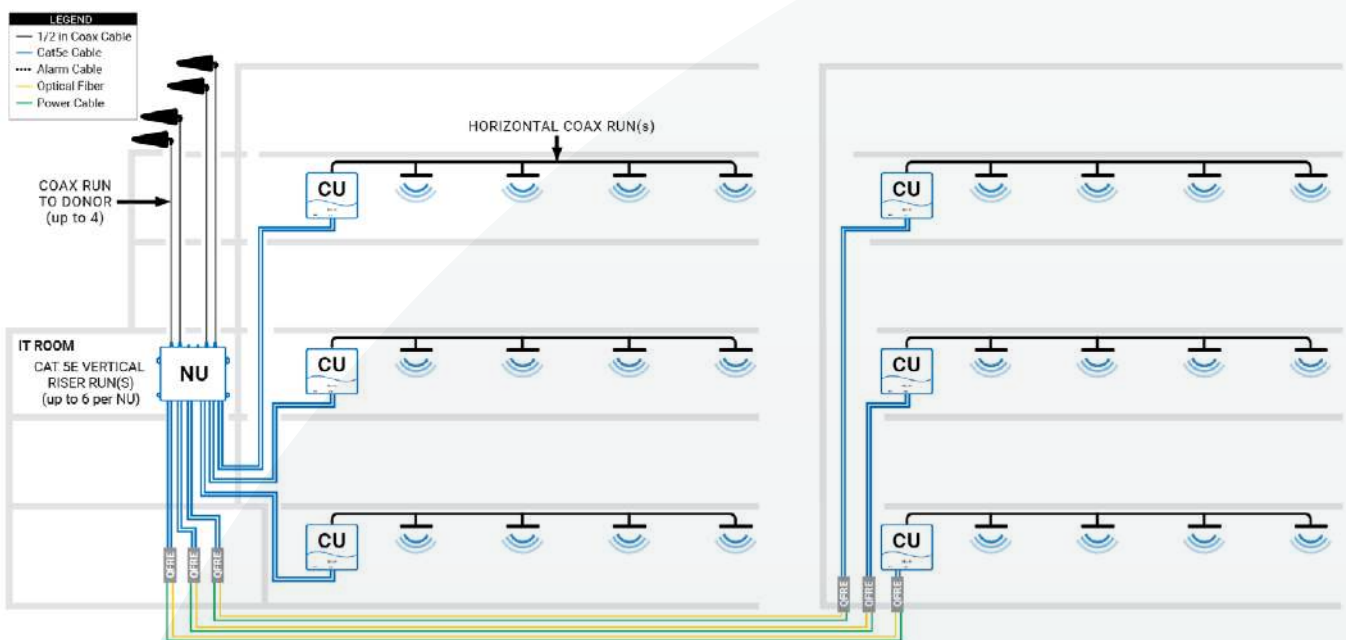
UPERCELL® CONFIGURATION

A Supercell is comprised of a Cel-Fi QUATRA system connected to a small cell. Multiple Cel-Fi QUATRA systems can be connected to a single small cell, or multiple small cells, to form a Supercell. A Supercell with Cel-Fi QUATRA is more efficient than multiple small cells, and the CUs of a Cel-Fi QUATRA system connected to a Supercell do not interfere with one another.

FIBER EXTENSION

Expanding the capabilities of Cel-Fi QUATRA systems, the Cel-Fi QUATRA Fiber Range Extender (QFRE) increases the distance between the Network Unit and Coverage Unit up to 2.0 km (1.24 miles). This solution is ideal for high-rise structures, long distances, or multi-building facilities.

Two-Building Diagram: 1 NU to 6 CUs with QUATRA Fiber Range Extenders



System Components



CEL-FI QUATRA 4000e Network Unit (Model Number: Q44-E999CNU)

The Network Unit (NU) is the hub of the system. The scalable design works with one to six Coverage Units to provide up to 11,600 m² (125,000 ft²) of coverage, per Network Unit.

- Provides donor signal to the CEL-FI QUATRA 4000e system
- Provides power to Coverage Units (up to six)
- Connects via ethernet or LTE Modem to the CEL-FI WAVE Platform for remote monitoring and management



CEL-FI QUATRA 4000e Coverage Unit (Model Number: Q41-EECU)

The Coverage Unit (CU) is the remote unit of the system that rebroadcasts the donor signal. The cost efficient and easy-to-deploy system leverages Power-Over-Ethernet (POE) for up to six CUs.

- Provides coverage in the CEL-FI QUATRA system (up to six per Network Unit)
- Power delivered by Power-Over-Ethernet from the Network Unit
- Self-configuring and self-optimising
- CEL-FI QUATRA 4000e CU is only compatible with CEL-FI QUATRA 4000e NU



CEL-FI QUATRA 4000e Fiber Hub (Model Number: Q40-EFNU)

CEL-FI QUATRA 4000e Fiber Hub expands the Network Unit capacity from six to up to twelve Coverage Units. The fiber hub can be installed 2.0 km (1.24m) away from the NU to cover large spaces while maintaining the same signal quality throughout the system.

- Multi-carrier Active DAS Hybrid
- Donor source over fiber
- Ofcom and ComReg Approved
- SFP+ module not included



CEL-FI WAVE Portal

The CEL-FI WAVE Portal is a cloud-based remote management platform that enables device management and maintenance of CEL-FI QUATRA systems. The CEL-FI WAVE platform is designed to also work on mobile phones which facilitates ease of use on site.



CEL-FI COMPASS

The CEL-FI COMPASS is an RF site utility that enables installers and integrators to install and optimise the CEL-FI QUATRA 4000e. The CEL-FI COMPASS requires the CEL-FI WAVE PRO app and this complete solution enables installation and optimisation of systems without the need for local Internet Connectivity.

Accessories



CEL-FI QUATRA 4000 Range Extender



CEL-FI QUATRA Fiber Range Extender



Specifications

CEL-FI QUATRA 4000e			
Transmit EVM	UL	8.5%	16-QAM with full RB allocation
		8.5%	E-TM3.1
Return Loss (dB)		At all ports	-8
Donor Antennas	One RF Port per Operator		
		Operators Supported (Max)	4
		Impedance (Ohms)	50
Power	NU Internal Supply	Voltage (VAC)	100-240
		Power - Typical (W)	230
		Power - Max (W)	321.3
Supported CUs	Coverage Units	Number Supported (Max)	6
		Category Cables per CU	2
		Interface Type	RJ45
User Interface	Power/Status	LED	RED / GREEN
	CU Link	LED	GREEN
	Donor Antenna	LED	GREEN
	Cellular Modem	LED	RED / GREEN
	Ethernet	LED	Yes
	USB	n/a	Yes
Environmental	Dimensions	L x W x H (mm)	330 x 272 x 85
		Weight (kg)	6.5
	RF Port Connector		4.3 / 10
	Mounting	Wall	Yes
	Cooling	Convection	Yes
	Power / Status	AC to NU	Yes
	Power	On/Off Switch	Yes
Environmental	Maximum Surface Temp. (°C)	Measured at 30°C Ambient	44



COVERAGE UNIT			
Radio Specs	Frequency	Downlink (DL) Frequency (MHz)	791-2690
		Uplink (UL) Frequency (MHz)	832-2690
	DL Power (dBm)	Per Channel (Max)	16
Network Unit Interface	Cables (2)	Type	Category Cable
		Cable Standard	ANSI/TIA/EIA 568-B
		Length Cat5e Max (m)	100 (200 with QRE)
		Length Cat6 23 AWG Max (m)	150 (300 with QRE)
User Interface	Power / Status	LED	RED / GREEN
	NU Link	LED	GREEN
Mechanical	Dimensions	L x W x H (mm)	287 x 255 x 57
		Weight (kg)	3.9
	Mounting	Ceiling, Wall	Yes
STANDARDS			
Environmental	3GPP Repeater Specs		Yes
	Operating Temperature	Ambient	0-40°C
	Relative Humidity	Non-Condensing	0-95%
	Ingress Protection (IP)		40

CEL-FI QUATRA 4000e BANDS			
BANDS	DOWNLINK MHz	UPLINK MHz	TECHNOLOGY/BANDWIDTH
1	2110-2170	1920-1980	5G / LTE / 20MHz
3	1805-1880	1710-1785	5G / LTE / 20MHz
7	2620-2690	2500-2570	5G / LTE / 20MHz
8	925-960	880-915	5G / LTE / HSPA / 15MHz
20	791-821	832-862	5G / LTE / 10MHz
40	2300-2390	2300-2390	5G / TDD LTE / 20MHz