CEL-FI QUATRA 1000
In-Building Cellular Coverage Solution

MODEL NUMBERS: Q34-2/5/12/66, Q34-2/5/13/66, Q34-1/3/8/20, Q34-1/3/7/8, Q34-1/7/8/20, Q34-3/5/7/28

CEL-FI QUATRA 1000 is a scalable in-building cellular solution that is both cost-efficient and easy-to-deploy, delivering reliable cellular coverage for enterprise environments. It is a hybrid solution that combines the power of active DAS and Smart Booster technologies. It operates in off-air mode or can be integrated with the carrier's small cell equipment and operated as a distributed small cell, creating a Supercell.

Features and benefits include:
- Lowest cost per ft^2
- Scalable coverage and capacity
- Signal source can be off-air or small cell
- Remote monitoring and management via Nextivity WAVE Portal
- No retransmission agreement required

CEL-FI QUATRA 1000

Use Nextivity **WAVE** PRO App to view real-time system performance.

Download on the App Store   GET IT ON Google Play

System Features & Supported Bands

Model Number (base)	Bands Supported	MIMO Support	Crossover Support
Q34-2/5/12/66	2, 4, 5, 12	4, 12	2, 5
Q34-2/5/13/66	2, 4, 5, 13	4, 13	2, 5
Q34-1/3/8/20	1, 3, 8, 20	3, 20	1, 8
Q34-1/3/7/8	1, 3, 7, 8	3, 7	1, 8
Q34-1/7/8/20	1, 7, 8, 20	7, 20	1, 8
Q34-3/5/7/28	3, 5, 7, 28	7, 28	3, 5

*Crossover Support allows 3G and LTE to exist simultaneously in these bands

System Features

Enterprise-class, carrier-grade active DAS hybrid

MIMO RF inputs for (a) small cell donor or (b) external off-air donor antenna

Network Unit (NU) (Head End) attaches to Coverage Unit (CU) (Remote Unit) via category cable

A single NU and up to four (4) CUs may be attached (hub and spoke architecture) in a CEL-FI QUATRA system

Multiple CEL-FI QUATRA systems may be deployed to scale with building size

Up to 325 ft (100 m) range from NU to CU

CEL-FI QUATRA Fiber Range Extender (fQRE) may be used to increase NU-to-CU distance up to 2,000 m

Remote Management through Nextivity WAVE cloud platform

Easiest installation in its class

Glanceable LED User Interface (UI)

Mounting hardware included

Wireless Features

Supports up to four (4) bands simultaneously from a single operator

3G, 4G, and 5G support (WCDMA / HSPA+ / LTE)

Supports FDD

MIMO (in two bands, see table below for specifics per model)

Up to 100 dB system gain per band (in Off-Air mode)

Peaceful coexistence with adjacent Wi-Fi (2.4 GHz & 5 GHz), femtocells, and cellular devices

Advanced digital echo-cancellation (>30 dB) and channel select filtering algorithms

Active management of the cellular link between the Base Station and user devices

Automatic Gain Control (AGC) based on fast real-time echo-cancellation

Linear RF front end

Adaptive signal equalization

Uses Nextivity proprietary 3rd-generation "ARES" chip

Mobile Network and Network Protection Features

Global band combinations available for Americas, Europe, Asia, Oceania, and Africa

Systems pre-configured for a single carrier (network operator)

Seamless integration, handover, and handoff with the macro network

Supports multiple channel bandwidths of 3.84/5/10/15/20 MHz per channel

Works with any user equipment (UE) for the configured network (no whitelist/blacklist)

Up to 75 MHz relay bandwidth

Support for 3GPP Release 10 features

Provider-specific system: CEL-FI QUATRA distributes and boosts service only for the Operator PLMNIDs for which the device is authorized and configured

Secure and ciphered provisioning

System intelligence accurately establishes proper safe uplink power in real time

Uplink Muting Mode automatically shuts down uplink cellular transmissions when no active user equipment is detected

System shuts down upon Operator's network command or failure detection

Benefits

Easiest to deploy Active DAS Hybrid

Distribute and boost cellular coverage indoors, eliminates dead zones

3G, 4G, and 5G support, Voice and Data, network safe

Coverage footprint provided via Power over Ethernet (PoE); no requirement for additional power source at CU (RU)

System can accept various Donor signal inputs: Small Cell; OTA (off-air) via external antenna

Wireless Benefits

Clear and reliable cellular connections within coverage area

Highest gain (100 dB) provides best coverage footprint

Advanced Echo-Cancelation allows CEL-FI QUATRA to transmit more power without interference or feedback

Subscriber devices require less transmit power for improved battery life

Linearity eliminates IMD desense issues

Dynamic gain control ensures maximum gain—best coverage—at all times in ever changing RF environments, without user intervention

Mobile Network Benefits

Flexibly deploy in LTE, VoLTE, LTE-Advanced, and WCDMA networks, with multiple cellular bands, simultaneously

Automatically adjusts channel bandwidths from 10 MHz to 20 MHz

Sufficient relay bandwidth (75 MHz) to support SISO and MIMO in multiple bands

Off-load the macro network in Supercell mode, or use to improve macro capacity and building propagation/penetration

UE control is transparent and remains centralized in the network core (no gateways or third-party software)

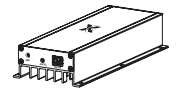## QUATRA Fiber Range Extender (fQRE)

Extends distance between CEL-FI QUATRA NU and CU up to 2 kilometers

Plug-and-play installation

Power over Ethernet (PoE)

Supports CEL-FI QUATRA proprietary protocols

Note: Will not support other (non CEL-FI QUATRA) PoE device

Q40-0XNU / Q40-0XCU

Wideband MIMO Panel Antenna

The Wideband MIMO Panel Antenna may be used as an Off-Air (OTA) donor source

MIMO Directional Panel Antenna

Integrated antenna cables (200 cm)

Mounting hardware included

#A52-X12-101

Power *(Network Unit Only)*

54 VDC @ 2.22 Amp via external supply (51.3 to 56.7 VDC tolerance)

External supply: 100 to 240 VAC, 47–63 Hz

Power consumption less than 120W max

Network Unit provides power to Coverage Units over category cabling (PoE)

Environmental *(Network Unit Only)*

Operating temperature: 0° to 40°C

Storage temperature: -25° to 60°C

Convection Cooling

Relative humidity: 0% to 95%, noncondensing

RoHS II 2011/65/EU

IP20

Installation *(Network Unit Only)*

Mounting hardware included

NU may be wall mounted

CUs may be wall or ceiling mounted

One (1) NU supports up to four (4) CUs

iBwave VEX files and template available

Radio Performance *(check product version for specific band support)*

Band	Downlink	Uplink	Boost
1	2110–2170 MHz	1920–1980 MHz	Up to 20 MHz contiguous boost BW, HSPA or LTE SISO
2	1930–1990 MHz	1850–1910 MHz	Up to 20 MHz contiguous boost BW, HSPA or LTE SISO
3	1805–1880 MHz	1710–1785 MHz	Up to 20 MHz contiguous boost BW, HSPA or LTE MIMO
4	2110–2155 MHz	1710–1755 MHz	Up to 20 MHz contiguous boost BW, HSPA or LTE MIMO
5	869–894 MHz	824–849 MHz	Up to 15 MHz contiguous boost BW, HSPA or LTE SISO
7	2620–2690 MHz	2500–2570 MHz	Up to 20 MHz contiguous boost BW, LTE MIMO
8	925–960 MHz	880–915 MHz	Up to 15 MHz contiguous boost BW, LTE SISO
12	729–746 MHz	699–716 MHz	Up to 10 MHz contiguous boost BW, LTE MIMO
13	746–756 MHz	777–787 MHz	Up to 10 MHz contiguous boost BW, LTE MIMO
20	791–821 MHz	832–862 MHz	Up to 20 MHz contiguous boost BW, LTE MIMO
28	758–788 MHz	703–733 MHz	Up to 20 MHz contiguous boost BW, LTE MIMO
66	2110–2200 MHz	1710–1780 MHz	Up to 20 MHz contiguous boost BW, LTE MIMO

Total boost all-channel bandwidth 75 MHz (2×2 MIMO uses double bandwidth per channel)

DL Maximum NU in-band donor level -40 dBm

DL Maximum NU survival donor level 30 dBm

UL Maximum CU donor level -20 dBm

Maximum UL power 22 dBm bands 1, 2, 3, 4, 7

Maximum UL power 20 dBm bands 5, 8, 12, 13, 20, 28

Maximum DL power 10 dBm per 5 MHz bands 1, 2, 3, 4, 7

Maximum DL power 10 dBm per 5 MHz bands 5, 8, 12, 13, 20, 28

LTE 5/10/15/20 MHz and WCDMA 3.84/5MHz bandwidths

Specific power settings may be influenced and/or modified for regulatory compliance. Check specific model for power values.

Physical Specifications

Network Unit	Coverage Unit
250 ×188 × 55 mm	188 × 188 × 50 mm
1.2 kg (40.8 oz.)	0.83 kg (29.2 oz.)

Connections

4 x CU RJ45 Proprietary Gigabit link

100 m max CU cable length Cat5e, or 150 m with 23AWG Cat6/6a/7 compliant to ANSI/TIA/EIA 568-B

PoE IEEE 802.3at

RJ45 LAN management port (10/100 Fast Ethernet)

RJ45 LAN management output port (10/100 Fast Ethernet)

2x MIMO External RF Input (QMA-Female 50 ohm)

Compliance *(check individual product version for specific regional compliance)*

3GPP TS 25.143 Rel.10
3GPP TS 36.143 Rel.10
CE
FCC Part 15, 20, 22, 24, 27
ISED Canada
UL 62368-1/CSA C27.2
Bluetooth BQB
RCM

Note: Certifications are regional; not all products need or have the same certifications. Please check with Sales or Support, the specific model number to determine exactly which certifications it has, or are best for your region.

System Management (Software)

Nextivity WAVE cloud portal
Nextivity WAVE Remote Management: Status (list and map), Commissioning, Diagnostics, Software Updates, Settings, Reporting, Alarms & Notifications

Patents & Design

CEL-FI QUATRA products are covered by multiple Nextivity, Inc., patents and pending patents. Designed by Nextivity, Inc. in San Diego, California, USA. Specifications subject to change without notice.

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