

Emerald Cellular Product Range (4G/LTE)  
Desktop 4G-CPE - Advanced LTE 4G/LTE CPE  
Overview - Band 42 & 43 - Category 6



About Wireless Excellence

Founded in 1996 and with headquarters in Oxford UK, Wireless Excellence Limited is a leading designer and supplier of outdoor and indoor Broadband Wireless communication products.

With a complete range of Wireless solutions including Radio, Microwave, Millimeter-Wave, 4G/5G/LTE, Free Space Optics and Carrier WiFi, customers in over 80 countries have chosen CableFree as the “one stop shop” brand of choice for dependable wireless networking.

About 4G/LTE Solutions

Using the latest Software Defined Radio and RF technology, our cellular 4G/LTE solutions operate in all the common cellular bands from 380MHz-4400MHz, including Base Station and CPE devices for high performance mission-critical applications.

Our advanced Cellular CPE platform with IP/Ethernet interfaces also supports VOIP with analogue RJ11 connections to ensure simplicity of installation. Flexibility, performance and low cost of ownership are ensured.

## Advanced 4G/LTE CPE solution (Cat6)

Wireless Excellence offers high performance 4G/LTE CPE solutions for a wide variety of applications. Covering all common 4G/LTE bands of the base stations which enables great flexibility of operation and future upgrade path.

4G/LTE networks using CableFree Emerald CPEs enjoys great flexibility, high performance as well as very low cost of operation and ownership. "Stand Alone" operation is possible which enables the 4G Base station to connect remote terminals without need for external network elements.. This is ideal for closed network type applications such as CCTV, campus sites and disaster recovery scenarios, where there is no centralised infrastructure or Network Operations Centre.

### System Features

- Compact, 4G/LTE CPE solution; Category 6 compliant
- Spectrally Efficient, Software-Defined Radio
- "Stand Alone" mode capable
- The Emerald Platform supports both TDD LTE and supports MIMO 2x2, 4x4 & Carrier Aggregation natively
- Emerald CPE can accommodate analogue telephony plus VOIP and broadband Data

### Applications

- Telecom Service Providers & ISPs
- Cellular Network operators
- Ideal for WiMax Operators now using LTE
- Point-to-Multipoint Point Wireless networking
- CCTV connection for multiple cameras
- Oil & Gas Utilities
- Fast Roll-out & Temporary Deployment

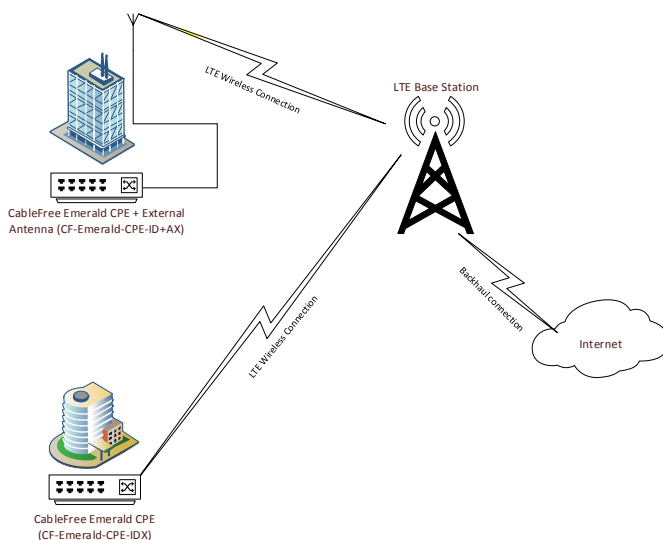
### Enhanced Performance, Flexibility & Features

The CableFree Emerald CPE is available as a full indoor unit, or an indoor unit with additional outdoor antenna for longer distance links. There is an option for a full outdoor, 'carrier grade' unit if required with integrated high gain antenna and ruggedised housing. All units are highly versatile in deployment, with full support for LTE in both TDD & FDD as well as multi-mode wireless capabilities.

Key Features:

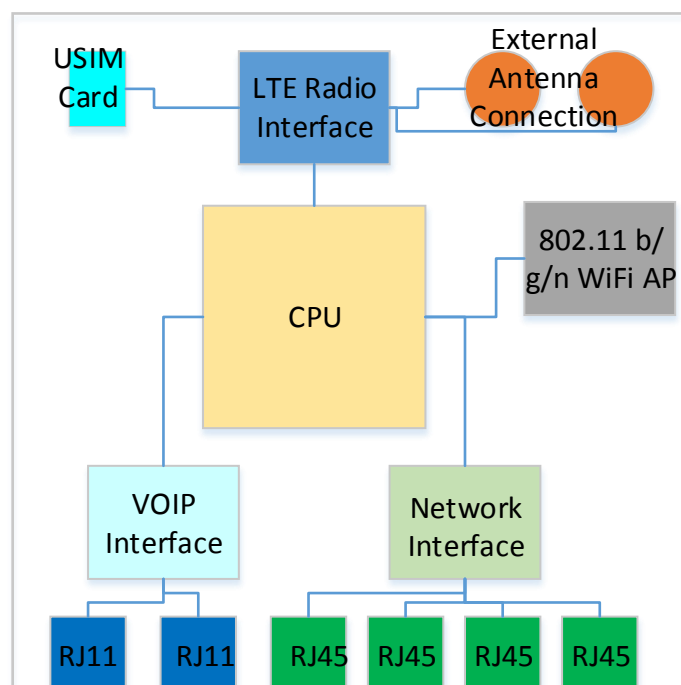
- Full support for VOIP (optional feature) with RJ11 ports
- TR-069 and OMA-DM network management protocols
- Options on Band 42 or 43, with some combined modules to provide full support of both bands
- Support internal or external antenna
- Simple, elegant and suitable for multiple locations

### Schematic of options:



Front and Rear Panel Layout of Emerald LTE CPE - Indoor Version. Note that different customer-specific case/housing design may be offered

## CableFree Emerald CPE Block Diagram:



System Variant	CF-Emerald-DT-B4243-CPE-C6-X
<b>System Parameters</b>	
Max. Nb Carriers per TX/RX LTE	1 (5, 10, 15, 20MHz) TDD. Optional CA. 3GPP Cat6 CPE
Supported Bands	Full Support of LTE in Band 42 & 43 or Multi-mode
Modulation	Receive QPSK/16QAM & 64QAM, Send QPSK & 16QAM
Modes	2x2, 4x4 & Carrier Aggregation
VPN	Server or Client
SIM Card	Support for 1.8V/3.3V USIM cards
WiFi AP (integrated)	Built in, 802.11 b/g/n WiFi Access Point, integrated antenna
LTE Antenna	Internal 2-4dBi or supports External High Gain (Optional)
VOIP	Fully supported Option (Factory-fit option) with RJ-11 ports
Management	Web Interface, TR069 & OMA-DM
Indicators (Indoor unit only)	Signal strength, VOIP, Power, Mode, Ethernet
Interfaces	4x RJ45, 1x USIM, USB, 2x SMA (for external Antenna) , Optional 2x RJ11 (VOIP)
Power Supply	DC 5 V 3A, optional Battery backup
Operating Temperature	-10°C to +50°C
Dimensions	184 x 166 x 42 mm
<b>Regulatory</b>	
LTE Compliancy	ETSI TS 136 104 cat B Opt2
Electrical safety	UL 60950 - Ed.3 2000, EN 60950 Ed.2001, CSA C22.2 No 60950
Environmental Conditions	ETSI EN 300 019-1, ETSI EN 300 019-1, ETSI EN 300 019-3, IP67

## Product codes

Product Code	Description
CF-Emerald-DT-B4243-CPE-C6-IDX	Emerald LTE Band42/43 Cat6 CPE Indoor Unit
CF-Emerald-DT-B4243-CPE-C6-ID+AX	Emerald LTE Band 42/43 Cat6 CPE Indoor Unit with External LTE Antenna
xxxxxxx-V	VOIP option (add to any of the above), adds 2x RJ11 ports

Note – precise product code depends on frequency, band, antennas, resilience and other options. Please contact Wireless Excellence for more information

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