# Spectra LTE-U Outdoor FDD eNB

## INTRODUCTION

The Baicells Spectra Long-Term Evolution – Unlicensed (LTE-U) 2x320mW eNodeB enables smart mobile device users to be served by unlicensed 5.8 GHz spectrum using Frequency Division Duplexing (FDD) technology*. Providing the stability and bandwidth of LTE service while avoiding the cost of licensed spectrum is a significant advantage for wireless operators.

LTE-U outshines Wi-Fi with better capacity and coverage for multiple users, efficient power usage, guaranteed security authentication, and robust QoS. Spectra LTE-U's forthcoming and incremental capability of harmonizing licensed and unlicensed bands echoes key 5G radio access goals known as Licensed Assisted Access (LAA). It is an attractive option for operators since it increases network capacity while limiting the CAPEX investment.

## FEATURES

### Easy Deployment

- Slim design suitable for private and public deployments
- Any IP based backhaul can be used, including public transmission
- Low power consumption; can be integrated with solar power
- FDD LTE ideal for uplink-centric applications
- Plug-and-Play with self-organizing network (SON) capabilities
- Integrated high-gain directional RF antenna and GPS antenna

### Better Performance

- Standard LTE FDD network mode: UL 5150-5250 MHz, DL 5725-5825 MHz, and customized frequencies
- 2x2 MIMO antenna technology
- Excellent NLOS coverage performance
- Peak rate of 150 Mbps DL, 75 Mbps UL with 20 MHz spectrum
- 32 concurrent users
- Supports 5/10/15/20 MHz bandwidth operation
- Future flexible combination of licensed and unlicensed bands

### Easy Management

- Local and remote Web GUI, network management through BaiOMC
- Highly secured with equipment certification against potential intrusion risk

*Time Division Duplexing (TDD) versions are planned as well.

## HARDWARE SPECIFICATIONS

| | |
|---|---|
| LTE Mode | FDD |
| Frequency Bands | UL: 5150-5250 MHz<br>DL:5725-5825 MHz |
| Channel Bandwidth | 5/10/15/20 MHz |
| Max Output Power | 27 dBm / antenna |
| Receive Sensitivity* | -102 dBm per antenna |
| Synchronization Mode | GPS |
| Backhaul Mode | 1 standard optical (SFP) and 1 RJ-45 Ethernet interface (1 GE with PoE+) |
| MIMO | DL: 2x2 |
| Dimensions (HxWxD) | 10.2 x 7.5 x 3.6 inches<br>260 x 190 x 90 millimeters |
| Installation Method | Pole or wall mount |
| Antenna | 15±1 dBi, internal directional antenna<br>• Horizontal beamwidth: 45°±3<br>• Vertifical beamwidth: 13°±3<br>• Polarization: ±45°, Isolation > 25 dB<br>• Efficiency > 80% |
| Power Consumption | < 65W |
| Power Supply | Fiber: +/-48V DC 1.5A (maximum)<br>Cable: PoE (802.3bt standard) |
| Weight | 8.8 lbs (4 kg) |

*Test method for Receive Sensitivity follows 3GPP TS 36.104, which is based on 5 MHz bandwidth, FRC A1-3 in Annex A.1 (QPSK, R=1/3, 25RB) standard.

## SOFTWARE SPECIFICATIONS

| | |
|---|---|
| LTE Standard | 3GPP Release 9 |
| Max Peak rate | 20 MHz: DL 150 Mbps, UL 75 Mbps |
| User Capacity | 32 concurrent users |
| QoS Control | 3GPP standard QCI |
| Modulation | UL: QPSK, 16QAM, 64QAM<br>DL: QPSK, 16QAM, 64QAM |
| Traffic Offload | • Local IP Access (LIPA)<br>• Selected IP Traffic Offload (SIPTO) |
| SON | Self-organizing network:<br>• Automatic setup<br>• Automatic Neighbor Relation (ANR)<br>• PCI confliction detection |
| Spectrum Scanning | Supported |
| UL Interference Detection | Supported |
| RAN Sharing | Supported |
| Network Management Interface | TR069 interface protocol |
| MTBF | ≥ 150000 hours |
| MTTR | ≤ 1 hour |
| Maintenance | Remote/local maintenance<br>Online status management<br>Performance statistics<br>Fault management<br>Local or remote software upgrade<br>Logging<br>Connectivity diagnosis<br>Automatic start and configuration<br>Alarm reporting<br>KPI recording<br>User information tracing<br>Signaling trace |

## ENVIRONMENTAL SPECIFICATIONS

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|---|---|
| Operating Temperature | -40°F to 131°F<br>-40°C to 55°C |
| Storage Temperature | -49°F to 176°F<br>-45°C to 80°C |
| Humidity | 5%~95% RH |
| Atmospheric Pressure | 70 kPa to 106 kPa |
| Ingress Protection Rating | IP65 |
| Power Interface Lightning Protection | Differential mode: ±10 KA<br>Common mode: ±20 KA |

## GLOBAL PART NUMBER

| | |
|---|---|
| u4G-AP1000 | u4G-AP1000(FDD Outdoor Micro cell, unlicensed frequency, DL: 5725-5825 MHz/UL 5150-5250 MHz, 2T2R, 27 dBm, 48V DC, PoE+, American standards |