



# DuraFon-SIP™

## Durable, Long-Range SIP Cordless Phone System

**The DuraFon-SIP is the industry's first durable, long-range SIP cordless phone.** The DuraFon-SIP Cordless Phone System delivers industry-leading range, durability and reliability, in a flexible, multi-mode communications platform that provides users with the lowest total cost of ownership (TCO) in the industry. This durable, long-range SIP cordless phone provides up to 250,000 square feet of facility coverage, penetrates up to 12-floors for in-building coverage and up to 3,000 acres of property in open land coverage.

It supports both SIP and one PSTN line analog and is ideal for companies with an existing IP-PBX system on the premises or those using hosted VoIP services that require reliable, long-range communications over large areas or in harsh environments. Such as, organizations whose staff work on large properties outside of a conventional office, or venues where employees need to stay in constant contact with a main office or management team and where Wi-Fi or DECT phones can't reach. These may include:

- > Large Resort Properties
- > Schools, Colleges and Universities
- > Golf Courses
- > Warehouses
- > High-Rise Hotels
- > Expansive Agricultural Properties
- > Industrial Plants
- > Oil and Gas Fields
- > Convention Centers
- > Amusement Parks
- > Assisted Living Facilities
- > Auto Dealerships
- > Retail and Grocery Stores

An expert in wireless communications and RF technology, EnGenius delivers feature-rich, long-range wireless communications technology for voice and data. The versatility and performance of the company's solutions lower total cost of ownership, increase productivity and maximize efficiency and performance to a large number of clients simultaneously.

### Key Features:

- > Long Range SIP Cordless Phone System
  - Up to 12 Floors In-Building Penetration
  - Up to 250,000 sq. ft. of Facility Coverage
  - Up to 3,000 Acres of Property, Open Land Coverage
- > Multi-Mode Communications
  - Base Supports up to Four (4) Concurrent Calls (4-SIP or 3-SIP + 1-PSTN)
  - Works with any IP-PBX that Supports Standard SIP Protocols
  - Independent 2-Way Intercom
  - "Push-to-Talk" PTT Broadcast Feature
- > Proven Durability with Ruggedized Design
- > Secure 900 MHz (902 ~ 928MHz) FHSS
- > Supports up to 10 SIP Accounts per Base Station
- > Web-Based Phone Book & System Configuration



## Premises Mobility Communications Solution

DuraFon-SIP is a powerful, reliable, versatile multi-mode communications system that delivers industry-leading range and durability while providing significantly lower CAPEX and OPEX when compared to other SIP cordless phone solutions.

**Lower CAPEX, faster deployments:** DuraFon-SIP features EnGenius' high-power, easy-to-deploy single-cell technology that covers up to 250,000 sq. ft. indoors, 3,000 acres outdoors and penetrates up to 12 floors, minimizing the amount of equipment required.

**Reduced OPEX, less downtime:** The proven durability of the DuraFon series – over 10 years of continued innovation and testing – ensures that the phones will survive in the most challenging environments where handsets are subjected to drops and shocks.

**Flexible and easy-to-deploy:** Easily configured via the Base Station web interface, DuraFon-SIP supports both PSTN and SIP functions, and works with any IP-PBX system that supports the standard SIP protocol. In addition to long-range connectivity, the multi-mode system also enables users to communicate via 2-Way Intercom and PTT Broadcast modes.

## Flexible, Multi-Mode Communications

### Independent 2-Way Intercom

The DuraFon-SIP's Handset provides direct handset-to-handset communication without going through the Base Station for quick contact with specific users without group chatter.

### Broadcast Feature

DuraFon-SIP offers the favored, "Push-to-Talk" feature through the Handset's Broadcast button, allowing users to create 1-way communications for 1-to-All or 1-to-A Handset Group for instant response without the wait.

### Dual Interface

Support for both SIP and PSTN lines permit the connection of the Base Station to a legacy PBX, IP-PBX or preference service provider and gives users up to four (4) talk paths via four (4) digital calls or three (3) digital calls and one (1) analog line.

## Easy Phone Book and System Configuration Management

Easily configure and manage the master phone book via the DuraFon-SIP Base Station Web Interface and effortlessly transfer updates to each Handset via air.

## Durable, Ruggedized Design

The DuraFon-SIP's durable, rugged Handset is designed for use in harsh environments and tested to withstand 6-foot drops, over 50 times onto concrete floors without breaks.

## Superior Long-Range Performance

DuraFon-SIP implements a high-powered 900MHz proprietary air protocol, with high RF transmission and sensitivity to provide superior range and coverage for the industrial market; covering up to 250,000 sq. ft. indoors, 3,000 acres outdoors and penetrating up to 12 floors.

## Highly Secure Wireless Communications

Adopting 900MHz (902~928MHz) FHSS (Frequency Hopping Spread Spectrum) technology, the DuraFon-SIP ensures secure communications during conversations.

## Single Cell Technology Minimizes Equipment Needs, Saves Money

Designed to simplify deployment, the DuraFon-SIP features single cell technology that leverages a single 900 MHz Base Station for long-range coverage, eliminating the need for added Base Stations or repeaters, helping companies lower their capital expenses through faster deployment.

## 10-Years of Trusted Reliability

The DuraFon-SIP shares the trusted, proven durability of the popular DuraFon Series with over 10 years of continued innovation and testing that ensures the Handsets will survive in even the most challenging environments where they are subjected to drops and shocks.

## Lowest Total Cost of Ownership Available for SIP Deployments

Unlike other SIP systems, the DuraFon-SIP offers the lowest TCO available for SIP deployments. By simplifying and expediting system deployments, the DuraFon SIP lowers overall equipment costs and ensures less downtime through its proven reliability, reducing overall operating expenses for the life of the system.

## Operates Independently of Wi-Fi Networks

DuraFon-SIP operates independently of your existing Wi-Fi network, which means you don't need to be concerned with roaming or QoS issues that are typical with voice communications on a WLAN. By using the 900MHz frequency, there is also no need to worry about the DuraFon-SIP causing interference to existing 2.4 GHz and 5 GHz Wi-Fi.

## DuraFon-SIP System Features

### SIP

Voice codec: G.711a, G.711u, G.729A

SIP protocol: RFC3261

DTMF: RFC2833, SIP INFO

Hold: RFC3264

Transfer: RFC3515, RFC3891, RFC3892

Support Outbound Proxy

DNS SRV Support

### Long-Range

12 Floors In-Building Penetration

250,000 sq. ft. of Facility Coverage

3,000 Acres of Property, Open Land Coverage

### Durable

Tested to withstand 6-Foot Drops, Over 50 Times onto Concrete Floors

### Handset Features

Telephone

2-Way Radio

User Handset Naming

Keypad Lock

Speakerphone

Caller ID

Call Waiting

Vibrate Mode

Line Select

2.5 mm Headset Jack

Call Logs – Dialed & Received

Redial

Speed Dial

Call Hold

Call Transfer

Wireless PBX Function Sharing

Wireless Phone Book Sharing

Silent Ring

Mute

900 MHz, DSS, Frequency Hopping

Selectable Handset Grouping (7 groups)

User Programmable PBX Functions

Phone Book Supports 50 Entries

Intercom (Handset-to-Handset), no group chatter

PTT Broadcast (One-to-Many)

### System

1 LAN and 1 PSTN Ports per Base Unit

Removable Base Antenna

Flexible Port Dedication: Single, Group or All

Standard SIP Protocol Connection

Any Analog Line Connection: Landline, ATA, Cellular, VoIP or Satellite

Supports Ring Groups & Hunt Groups

Type I/II Caller ID (FSK and DTMF)

Visual Message Waiting Indication (VMWI) for PSTN

Conference Calling

Modifiable Flash and DTMF Tone Timing

Secure, Digital Spread Spectrum w/Frequency Hopping Technology

### Battery & Charger

Li-Ion Technology

6-Hours of Talk Time

50-Hours of Stand-By Time

Handset & Spare Battery Charging Slots

4-Hour Recharge Time

Battery Hot-Swap While Call is On-Hold

### Optional Equipment

External Base Antenna Kits: Optional indoor or outdoor antenna with 20 meter loss LMR-400 cable

Lighting Protection Kit

Antenna Splitter

DuraPouch Phone Case

### DuraFon SIP Value

No Monthly Bill (like cellular)

No Per Minute charges (like cellular)

No Contracts (like cellular)

No Annual FCC License Fees (like 2-way radios)

No Extensive Infrastructure Installation (like wireless networking, Wi-Fi phones)

No QoS Concerns

No Wireless Network Interference

### Manufacturer's Part Numbers

DuraFon-SIP System

DuraFon-SIP HC (Handset)

DuraFon-SIP BU (Base Station)

## Technical Specifications

| Physical Specifications      |  | Base Station  | Portable Handset                     |
|------------------------------|--|---|--------------------------------------|
| Buttons                      |  | Volume UP   | Left & Right Soft-Key                |
|                              |  | Volume DOWN   | Up                                   |
|                              |  | REG x 1   | Down                                 |
|                              |  | RESET x 1   | Talk/Speaker                         |
|                              |  | Broadcast   | 2-Way Intercom                       |
|                              |  | Intercom  | End & Power                          |
|                              |  | NA  | Broadcast                            |
|                              |  | NA  | 0-9, *, #                            |
| Jack                         |  | Line x 1  | Earphone                             |
|                              |  | LAN x 1   | DC                                   |
|                              |  | Audio-In x 1  | NA                                   |
|                              |  | Type-B USB x 1  | NA                                   |
|                              |  | DC x 1  | NA                                   |
|                              |  | Grounding   | NA                                   |
| LED Indicators               |  | POWER   | NA                                   |
|                              |  | In-Use  | NA                                   |
|                              |  | Intercom  | NA                                   |
|                              |  | Broadcast   | NA                                   |
| Electrical Specifications    |  | Base Station  | Portable Handset                     |
| Frequency                    |  | 902-928 MHz   | 902-928 MHz                          |
| RF Power                     |  | Peak: 708 mW<br>Average: 354 mW   | Peak: 708 mW<br>Average: 88.5 mW     |
| Channel Spacing              |  | 200 kHz   | 200 kHz                              |
| Number of Channels           |  | 128   | 128                                  |
| Modulation                   |  | MSK   | MSK                                  |
| Multiple Access              |  | Frequency Hopping TDMA  | Frequency Hopping TDMA               |
| Frequency Hopping Rate       |  | 100 per second  | 100 per second                       |
| TDMA Frame Length            |  | 10 ms   | 10 ms                                |
| Number of Talk Paths         |  | 4   | 2                                    |
| Receiver Sensitivity         |  | < -108 dBm (@ BER 10 <sup>-3</sup> )                                      | < -108 dBm (@ BER 10 <sup>-3</sup> ) |
| Antenna Connector            |  | Reverse TNC   | Non-Standard                         |
| Antenna Gain                 |  | 2 dBi (included)<br>6 dBi Outdoor (Optional)<br>2.7 dBi Indoor (Optional) | 2 dBi (Long)<br>0.5 dBi (Short)      |
| TX Power Control Range       |  | NA  | 100-708 mW                           |
| Telephone Interface          |  | RJ11 x 1  | NA                                   |
| VoIP Interface               |  | RJ45 x 1  | NA                                   |
| Default IP Address           |  | 192.186.1.156   | NA                                   |
| Default User Name & Password |  | admin/admin   | NA                                   |
| SIP Protocol                 |  | RFC 3261  | NA                                   |
| Speech Coding                |  | 64kbps G.711a, G.711u<br>8 kbps G.729A                                    | 8 kbps G.729A                        |
| Channel Coding               |  | 8 kbps Convolutional + CRC  | 8 kbps Convolutional + CRC           |
| Transmission Data Rate       |  | 170.667 kbps  | 170.667 kbps                         |
| User Data Rate               |  | 128 kbps Duplex   | 128 kbps Duplex                      |
| Duplex                       |  | Time Division Duplex (TDD)  | Time Division Duplex (TDD)           |
| Voice Quality                |  | TIA/EIA-470B  | TIA/EIA-470B                         |
| Number of System ID          |  | 65,536  | 65,536                               |
| Ring Signal                  |  | 20-50 Hz, 15-90 Vrms  | NA                                   |
| Flash Time                   |  | 100-900 ms Programmable   | NA                                   |
| Power Source                 |  | 100~240V/12V AC/DC Adapter  | 3.7V, 1700 mAh Li-ion Battery        |
| Charge Time / Current        |  | NA  | 4 Hours (from empty) @ 500 mA        |
| Battery Talk & Standby Time  |  | NA  | 6 Hours / 50 Hours                   |

## Technical Specifications continued

| Environmental & Physical  | Base Station                                  | Portable Handset                            |
|---------------------------|---|---|
| Regulation Compliance     | FCC Part 15, Part 68                          | FCC Part 15, Part 68                        |
| Operating Temperature     | 0 – 50 °C / 32 – 122 °F                       | -10 – 60 °C / 14 – 140 °F                   |
| Storage Temperature       | -10 – 70 °C / 14 – 158 °F                     | -10 – 70 °C / 14 – 158 °F                   |
| Humidity                  | 20 – 75 %                                     | 20 – 75 %                                   |
| Dimension without Antenna | 161W x 42D x 188H (mm)<br>6.3" x 16.5" x 7.4" | 161W x 58D x 31H (mm)<br>6.3" x 2.2" x 1.2" |
| Device Weight             | 1.9 lbs.                                      | 1.6 lbs.                                    |

| DuraFon-SIP Packaging | System    | Base Station | Handset  |
|-----------------------|-----------|--------------|----------|
| Weight                | 3.98 lbs. | 2 lbs.       | 1.7 lbs. |
| Length                | 12.5"     | 12.5"        | 8"       |
| Width                 | 15.5"     | 8"           | 9.5"     |
| Height                | 3.75"     | 3"           | 3.25"    |

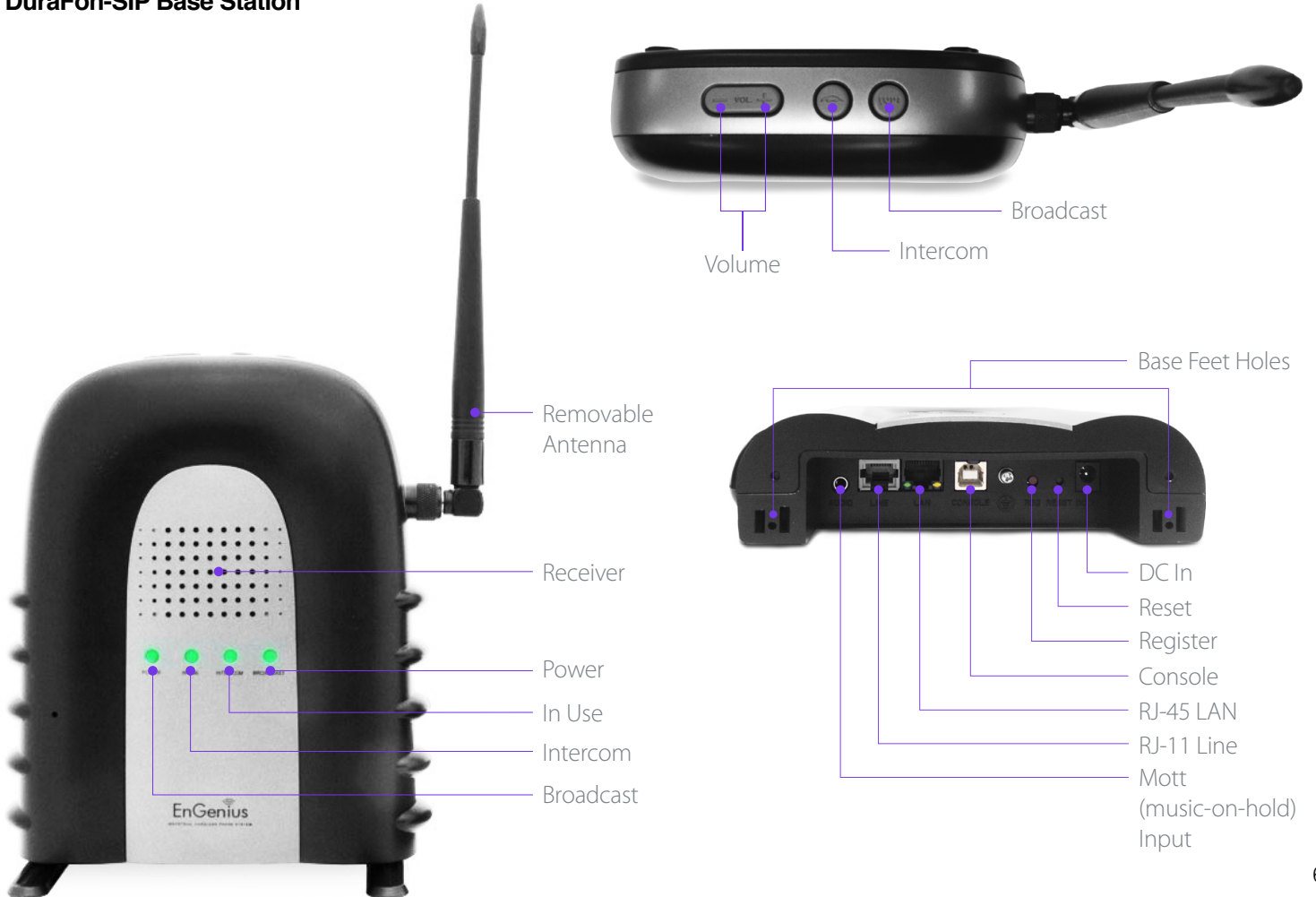
| Master Carton | System  | Base Station | Handset   |
|---------------|---------|--------------|-----------|
| Quantity      | 6       | 6            | 6         |
| Weight        | 26 lbs. | 13.5 lbs.    | 11.4 lbs. |
| Length        | 24"     | 18"          | 22"       |
| Width         | 17"     | 13.25"       | 11"       |
| Height        | 14"     | 9"           | 9"        |

| Package Contents           | System                | Base Station         | Handset               |
|----------------------------|-----------------------|----------------------|-----------------------|
| Base Station               | 1 (antenna installed) | 1                    | NA                    |
| Base AC/DC Adapter         | 1                     | 1                    | NA                    |
| Handset                    | 1 (antenna installed) | NA                   | 1 (antenna installed) |
| Handset Antenna            | 1 (Long x1)           | NA                   | 1 (Long x1)           |
| 1700mA Li-Ion Battery Pack | 1                     | NA                   | 1                     |
| Desktop Charger            | 1                     | NA                   | 1                     |
| Charger AC/DC Adapter      | 1                     | 1                    | 1                     |
| Quick Guide                | 1                     | 1                    | 1                     |
| Telephone Cord             | 1                     | 1                    | NA                    |
| RJ-45 Cable                | 1                     | 1                    | NA                    |
| Base Feet & Screws         | 2 (feet), 2 (screws)  | 2 (feet), 2 (screws) | NA                    |
| Warranty                   | 1 Year                | 1 Year               | 1 Year                |
| FCC Certified              | Yes                   | Yes                  | Yes                   |

## DuraFon-SIP Handset



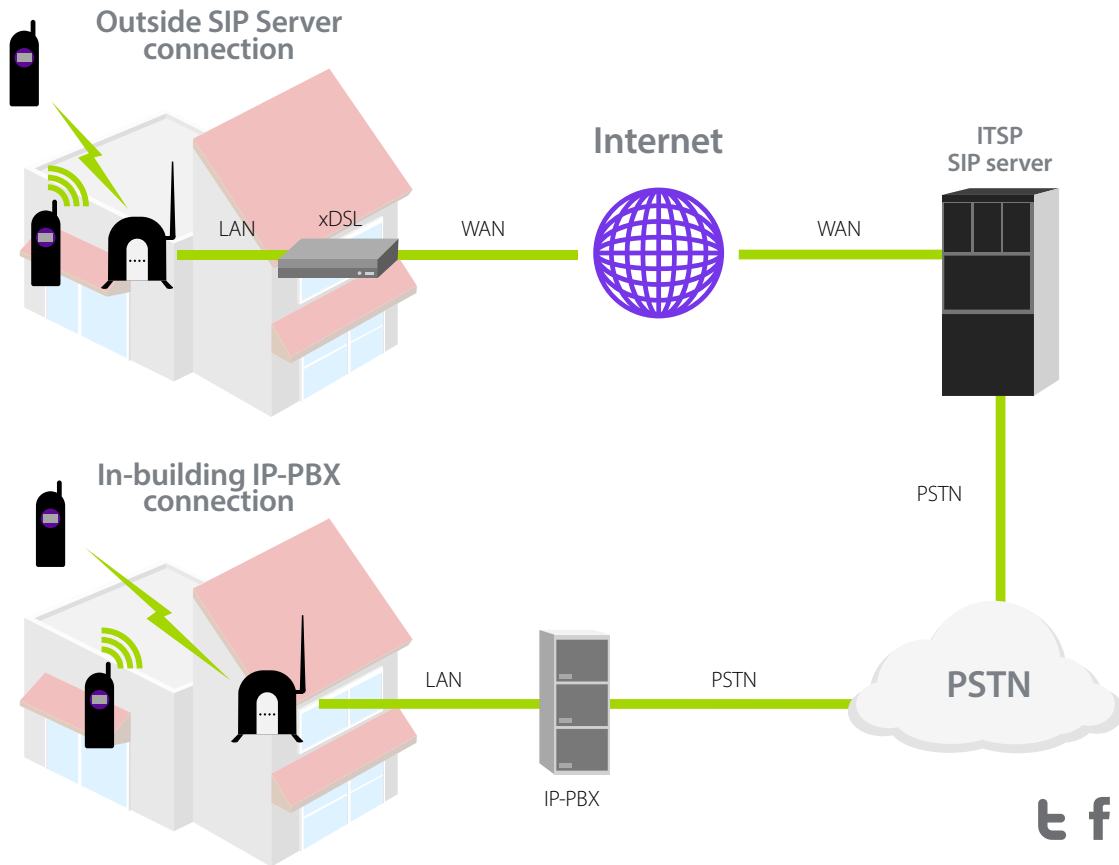
## DuraFon-SIP Base Station



## DuraFon-SIP Charger



## SIP Application



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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference, the user is encouraged to try to correct the interference, see User Manual for additional information. **Base Station:** This equipment complies with FCC radiation exposure limits and should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. **Handset:** This equipment complies with FCC radiation exposure limits. End users must follow the specific operating instructions for satisfying RF exposure compliance, to do this, please follow operation instruction as documented in the User Manual. This device complies with RSS-210 of the Industry Canada Rules and with IC radiation exposure limits.