



## DuraFon-SIP™-System

# 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 in-building, and covers up to 3,000 acres of open land property.

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. For example, 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 as 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-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 900 MHz 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 900 MHz (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. On 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

<b>SIP</b>
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
<b>Long-Range</b>
12 Floors In-Building Penetration
250,000 sq. ft. of Facility Coverage
3,000 Acres of Property/Open Land Coverage
<b>Durable</b>
Tested to withstand 6-Foot Drops, Over 50 Times onto Concrete Floors
<b>Handset Features</b>
Telephone
2-Way Radio
900 mHz DSS, Frequency Hopping
Broadcast/Push-to-Talk
Call Hold
Call Logs: Dialed & Received
Call Transfer
Call Waiting
Caller ID
Headset Jack (2.5mm)
Intercom (Handset-to-Handset, No Group Chatter)
Keypad Lock
Line/Base Select
Message Waiting Indicator
Mute
Phone Book/Speed Dial: 50 Entries
Redial
Selectable Handset Grouping (7 Groups)
Silent Ring
Speakerphone
User Handset Naming
User-Programmable PBX Functions (9 per Handset)
Vibrate Mode
Wireless PBX Options Sharing
Wireless Phone Book sharing
<b>Ports</b>
Console Port
Flexible Port Dedication: Single, Group, or All
LAN (RJ45) Port: 1
PBX Compatible
PTSN (RJ11) Ports: 1

<b>Call Features</b>
Base Station Intercom/Broadcast to Handset
Call Box Compatibility (Using SIP for Telephone and Analog for Call Box)
Conference Calling
Modifiable Flash and DTMF Timing
Ring Group/Hunt Group Support
<b>Configuration</b>
# Concurrent Calls per Handset: 2
# Simultaneous Calls per Base Unit: 4
# Supported Handsets per Base: 10
# Talk Paths: 4
# Total Handsets Supported: 10
Base Firmware Upgradable Onsite
<b>System</b>
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
<b>Battery and Charger</b>
Battery Hot-swap with Call on Hold
Handset and Spare Battery Charging Slots
Hours of Stand-By Time: 50
Hours of Talk Time: 4-6
Hours Recharge Time: 4
Li-Ion Technology
<b>Optional Equipment</b>
Antenna Splitter
DuraPouch
External Base Antenna Kit: Indoor Antenna with 20 Meter Low-Loss LMR 400 Coaxial Cable
External Base Antenna Kit: Outdoor Antenna with 20 Meter Low-Loss LMR 400 Coaxial Cable
Lightning Protection Kit

<b>Value</b>
No Monthly Bill (like Cellular)
No Per Minute Charges (like Cellular)
No Contracts (like Cellular)
No Annual FCC Licensing Fees (like 2-way radios)
No Extensive Infrastructure Installation (like Wireless Networking with Wi-Fi Phones)
No QoS Concerns
No Wireless Network Interference
Meets HIPAA Guidelines for Compliance
<b>Manufacturer's Part Numbers</b>
DuraFon-SIP System
DuraFon-SIP HC (Handset)
DuraFon-SIP BU (Base Station)

## Technical Specifications

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

## Technical Specifications continued

Electrical Specifications continued	Base Station	Portable Handset
Charge Time	N/A	4 hours (from empty)
Charge Current	N/A	500 mA
Battery Talk & Standby Time	N/A	6 Hours / 50 Hours
Environmental & Physical	Base Station	Portable Handset
Regulation Compliance	FCC Part 15, Part 68	FCC Part 15, Part 68
Operating Temperature	32°F – 122°F (0°C – 50°C)	14°F – 140°F (-10°C – 60°C)
Storage Temperature	14°F – 158°F (-10 – 70°C)	14°F – 158°F (-10 – 70°C)
Humidity	20 – 75 %	20 – 75 %
IP Rating	N/A	IP 42
Dimensions	6.3" x 16.5" x 7.4" (161 x 42 x 188 mm)	6.34" x 2.28" x 1.22" (161 x 58 x 31 x mm) w/short antenna
Device Weight	1.90 lb (0.86 kg)	0.39 lbs. (175g)

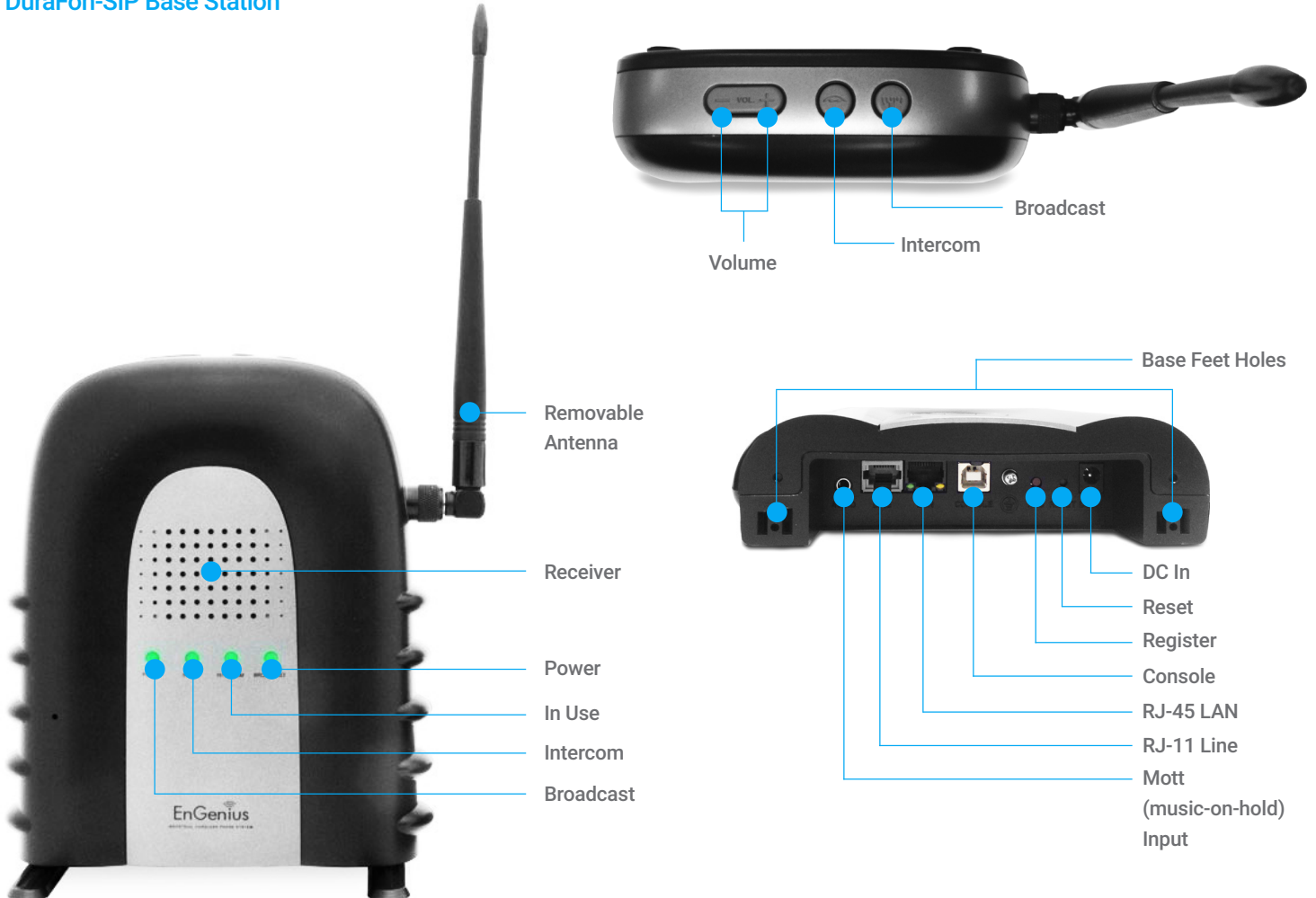
## Packaging

	DuraFon-SIP System	DuraFon-SIP BU Base Station	DuraFon-SIP HC Handset
<b>Master Carton</b>			
Quantity	6	6	6
Weight	26 lbs. (11.8 kg)	13.9 lbs. (6.3 kg)	11.4 lbs. (5.17 kg)
Dimensions (inches)	24" x 17" x 14"	18" x 13.25" x 9"	22" x 11" x 9"
Dimensions (cm)	61 x 43.2 x 35.6 cm	45.7 x 33.7 x 22.9 cm	55.9 x 27.9 x 22.9 cm
<b>Contents</b>			
Base Station	1 (DuraFon SIP Base Station, antenna installed)	1 (DuraFon SIP Base Station, antenna installed)	N/A
Base AC/DC Adapter	1	1	N/A
Base Antenna	(installed)	N/A	N/A
Handset	1 DuraFon SIP HC Handset, antenna installed	N/A	1 DuraFon SIP HC Handset, antenna installed
Handset Antenna	1 Handset Antenna (Long)	N/A	1 Handset Antenna (Long)
Battery	1700mA Li-ion Battery Pack	N/A	1700mA Li-ion Battery Pack
Desktop Charger	1	N/A	1
Charger AC/DC Adapter	1	1	1
Telephone Cord	1	1	N/A
RJ-45 Cable	1	1	N/A
Quick Guide	1	1	1
Warranty	1 Year; Extended 3 Year (optional)	1 Year; Extended 3 Year (optional)	1 Year; Extended 3 Year (optional)
FCC Certified	FCC Part 15, Part 68	FCC Part 15, Part 68	FCC Part 15, Part 68

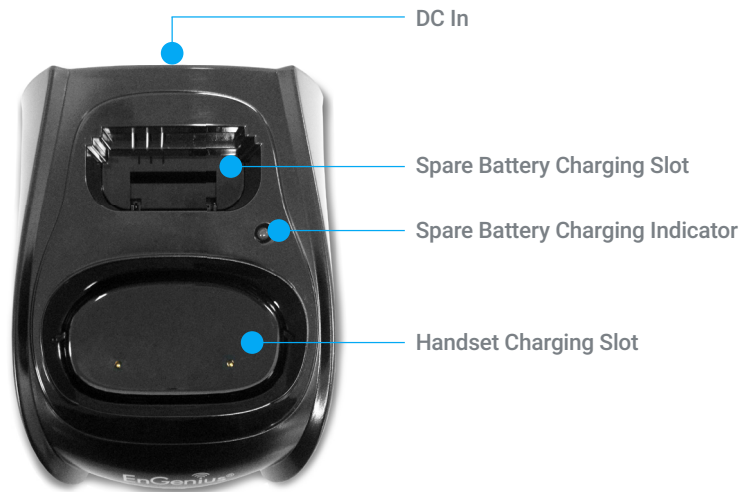
## DuraFon-SIP Handset



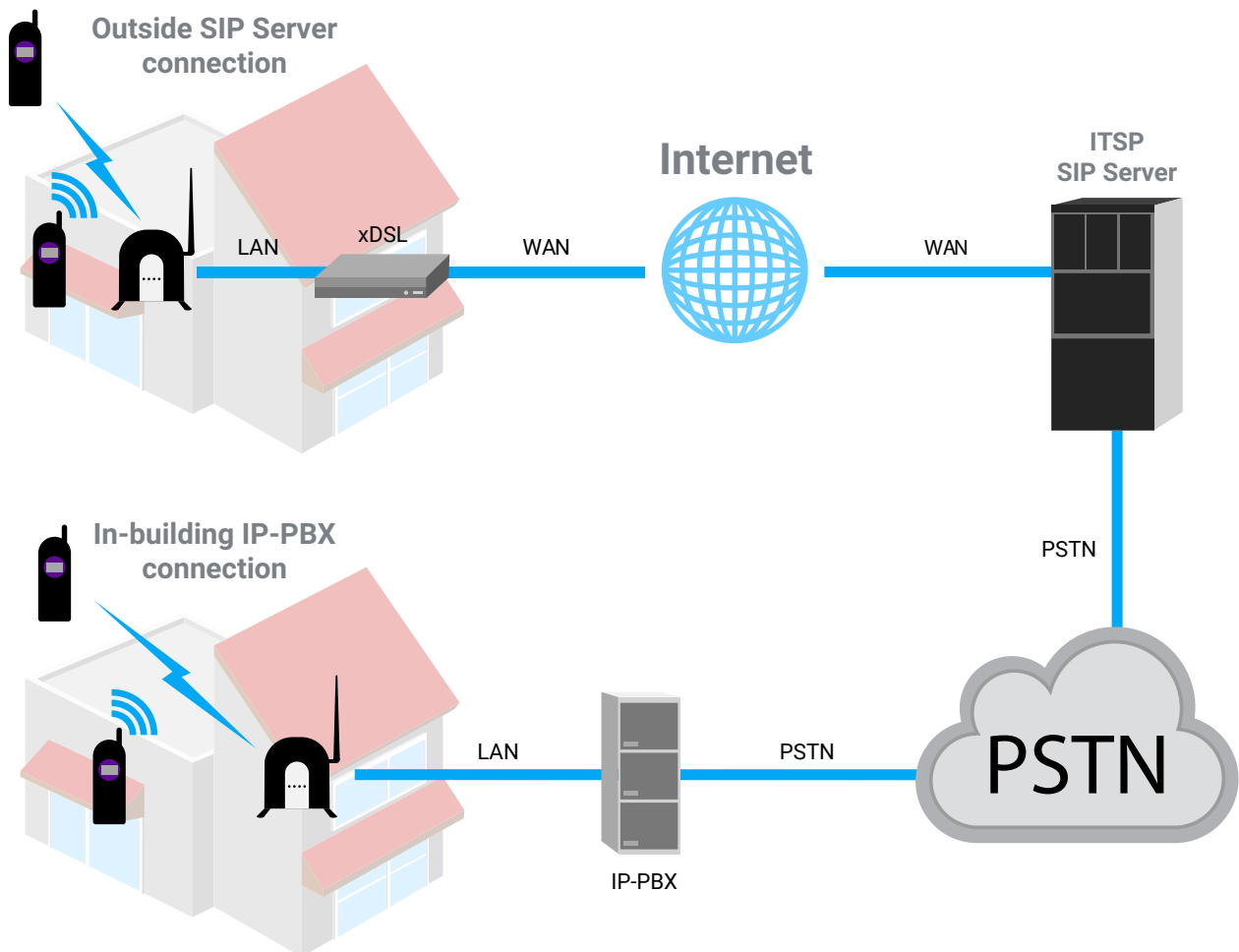
## DuraFon-SIP Base Station



## DuraFon-SIP Charger



## DuraFon-SIP Application



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.

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