

# DuraFon PRO™ Long-Range Industrial Cordless Phone Systems

The DuraFon PRO long-range cordless phone system is ideal for business and organizations with employees who conduct work on larger properties outside of a conventional office, 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.

The system complements virtually any existing telecommunications platform; it plugs right in to an existing PBX or IP-PBX phone system. Companies and organizations can start with a single base station and handset, expanding to add more as needed.

The DuraFon PRO system supports three ruggedized handset types: DuraFon PRO standard (telephone), DuraFon UHF-HC (telephone/2-way radio), and DuraWalkie (2-way radio). Mix and match handsets to provide appropriate functionality. All provide for long-range coverage areas, even without an intervening base station.

### Key Features:

- 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-Line (4 Ports/Lines per Base Unit)
- Expandable to 8 Bases for 32 Total Lines/Ports
- Supports up to 90 DuraFon PRO, DuraFon UHF-HC, or DuraWalkie Handsets
- Works Behind any Analog Port (PBX, VOIP, PSTN, FXS or POTS)

### Users may include:

- Hotels/Resorts
- Schools, Colleges and Universities
- Sports Arenas or Stadiums
- Golf Courses
- Warehouses
- Expansive Agricultural Properties
- Industrial Plants
- Oil and Gas Fields
- Convention Centers
- Amusement Parks



## Long-Range Coverage

DuraFon series products provide superior range and coverage for the industrial market; covering up to 250,000 sq. ft. indoor, 3,000 acres outdoors and penetrating up to 12 floors.

## Rugged Housing with Durable Design

DuraFon's durable, rugged handsets are designed for use in harsh environments. Tested to withstand 4-6 foot drops over 50 consecutive times onto concrete floors, the proven durability of EnGenius DuraFon handsets ensure the phones will survive in the most challenging environments even when subjected to drops and shocks.

## Expandable, Scalable System

The DuraFon PRO system accommodates up to 8 base units, each supporting up to 4 lines and 90 handsets.

## Highly Secure

Adopting 900 mHz (902~928 mHz) FHSS (Frequency Hopping Spread Spectrum) technology, the DuraFon ensures a high level of privacy during conversations.

## Complements Existing Phone Systems

The DuraFon PRO system works with any analog line connection: landline, ATA, cellular, VoIP, or satellite. For companies that need a longer-range phone solution than what DECT or Wi-Fi can deliver, the DuraFon PRO system can complement their existing system because it works behind any analog port (PBX, IP-PBX, VoIP, PSTN, FXS, or POTS).



## Handset Features

Features	PRO-HC Handset	UHF-HC Handset	DuraWalkie Handset
Telephone	Yes	Yes	No, but can receive calls transferred from a PRO handset
2-Way Radio	Yes	Yes	Yes
900 mHz DSS, Frequency Hopping	Yes	Yes	Yes
Broadcast/Push-to-Talk	Yes	Yes	Yes
Call Hold	Yes	Yes	Yes
Call Logs: Dialed & Received	Yes	Yes	N/A
Call Transfer	Yes	Yes	Yes
Call Waiting	Yes	Yes	Yes
Caller ID	Yes	Yes	Yes
Headset Jack (2.5mm)	Yes	Yes	Yes
Intercom (Handset-to-Handset, No Group Chatter)	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes
Line/Base Select	Yes	Yes	Yes
Message Waiting Indicator	Yes	Yes	Yes
Mute	Yes	Yes	Yes
Phone Book/Speed Dial	90 entries	90 entries	90 entries
Redial	Yes	Yes	Yes
Selectable Handset Grouping (7 Groups)	Yes	Yes	Yes
Silent Ring	Yes	Yes	Yes
Speakerphone	Yes	Yes	N/A
User Handset Naming	Yes	Yes	Yes
User-Programmable PBX Functions (9 per Handset)	Yes	Yes	Yes
Vibrate Mode	Yes	Yes	Yes
Wireless PBX Options Sharing	Yes	Yes	N/A
Wireless Phone Book sharing	Yes	Yes	N/A

## DuraFon PRO 2-Way Radio Mode

### General

Electrical Specifications	Portable Handset
Range Coverage	200,000 sq. ft./ 18,580 sq. m.
PL Codes	38
DBL Codes	83
Average Battery Life @ 5/5/90	14 Hours

### Receiver

Electrical Specifications	Portable Handset
Receiver Sensitivity (12 dB SINAD)	-122 dBm
Adjacent Channel Selectivity @ 12.5kHz	60 dB
Intermodulation rejection	55 dB
Spurious response Rejection (blocking 1MHz)	75dB
Audio Distortion	< 5%
Radiated Spurious Emissions (< 1GHz)	< -54 dBm
Radiated Spurious Emissions (> 1GHz)	< -52 dBm
Audio Output @ <5% Distortion	0.5W @ 8 ohms

### Transmitter

Electrical Specifications	Portable Handset
RF Output (Conducted into 50 Ohms)	1.0 Watts
Frequency Stability	< 2.0 ppm
Spurs & Harmonics	< -45 dBc
Modulation Limiting @ 12.5kHz	± 2.5kHz
Adjacent Channel Power	60dBc
Radiated Spurious Emissions @ 12.5kHz	< -20dbm
Audio Frequency Response (0.3 - 3.0 kHz)	+1 to -3 dB
Audio Distortion	< 2%

## DuraFon PRO System Features

### 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

### Ports

Flexible Port Dedication: Single, Group, or All  
 PBX Compatible  
 PTSN (RJ11) Ports: 4  
 Option to enable broadcast port

### Call Features

Auto-attendant  
 Ring Group/Hunt Group Support  
 Conference Calling  
 Modifiable Flash and DTMF Timing  
 Call Box Compatibility

### Configuration

# Talk Paths: 4 per base (32 max)  
 # Supported Handsets per Base: 90  
 # Bases Interlinkable: 8  
 # Total Handsets Supported: 90  
 # Concurrent Calls Per Handset: 2  
 # Simultaneous Calls Per Base Unit: 4  
 TAP Protocol Integration  
 Base firmware upgradable onsite

### Battery and Charger

Li-Ion technology  
 Hours of Talk Time: 6  
 Hours of Stand-By Time: 50  
 Hours Recharge Time: 4  
 Handset and Spare Battery Charging Slots  
 Battery hot-swap with call on hold

### Optional Equipment

Outdoor Antenna Kit (including antenna & cable)  
 Lightning Protection Kit (including cable)  
 DuraPouch  
 Belt Clip  
 Spare Battery  
 Low Profile Handset Antenna  
 Optimal Performance Handset Antenna  
 Antenna Splitter (including cable)

### Value

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

## Technical Specifications

Physical Specifications	PRO Base Unit	PRO-HC Handset	UHF-HC Handset	DuraWalkie Handset
<b>Buttons</b>	Reset	End/Power	Power/Volume knob	End/Power
	Registration	Left & Right soft keys	Left & Right soft keys	Left & Right soft keys
		Up & Down scrolling keys	Up & Down scrolling keys	Up & Down scrolling keys
		Broadcast	Broadcast	Broadcast
		Talk/Speakerphone	Mode	Key lock
		Intercom/2-Way	Talk/Flash	Intercom/2-Way
		0 – 9, #	Intercom/2-Way	0 – 9, #
			End	
			Push to Talk	
<b>Jack(s)</b>	Line x4	Travel charger (on charger)	Travel charger (on charger)	Travel charger (on charger)
	Audio-In x 1 (3.5 mm)	Headset (2.5 mm, on charger)	Headset (2.5 mm, on handset)	Headset (2.5 mm, on charger)
	DC x 1			
<b>LED Indicators</b>	Power		Walkie (on charger)	
	In-Use		Spare battery charging indicator (on charger)	
Electrical Specifications	PRO Base Unit	PRO-HC Handset	UHF-HC Handset	DuraWalkie Handset
<b>Frequency</b>	902-928MHz	902-928MHz	902-928 MHz (Phone mode); UHF 461- 469.5 (Radio mode)	902-928 MHz
<b>RF Power</b>	Peak: 708mW; Average: 304mW	Peak: 708mW; Average: 76mW	Peak: 800 mW; Average: 100 mW (Phone mode)	Peak: 708 mW; Average: 76 mW
<b>Channel Spacing</b>	200 kHz	200 kHz	200 kHz (Phone mode); 12.5 kHz (Radio mode)	200 kHz
<b>Number of Channels</b>	128	128	50 (Phone mode); 5 (Radio mode, UHF); 1 (Radio mode, 900mHz)	128
<b>Modulation</b>	GMSK	GMSK	MSK (Phone mode)	MSK
<b>Multiple Access</b>	Frequency Hopping TDMA	Frequency Hopping TDMA	Frequency Hopping TDMA (Phone mode)	Frequency Hopping TDMA
<b>Frequency Hopping Rate</b>	100 per second	100 per second	100 per second (Phone mode)	100 per second
<b>TDMA Frame Length</b>	10 ms	10 ms	10 ms (Phone mode)	10 ms
<b>Number of Talk Paths</b>	4	4 per base (32 max)	4 per base (32 max)	4 per base (32 max)
<b>Receiver Sensitivity</b>	< -108 dBm (@ BER 10-2)	< -108 dBm (@ BER 10-2)	< -109 dBm (@ BER 10-2) (Phone mode)	< -109 dBm (@ BER 10-2)
<b>Antenna Connector</b>	Reverse TNC	Non-standard	RP-SMA	Non-Standard
<b>Antenna Gain</b>	2 dBi (included); 5 dBi External (optional)	2 dBi (Long); 0.5 dBi (Short)	800 mW (Phone mode); 1 W (UHF Radio mode)	2 dBi (Long); 0.5 dBi (Short)
<b>TX Power Control Range</b>	N/A	708 mW	800 mW (Phone mode); 1 W (UHF Radio mode)	708 mW
<b>Telephone Interface</b>	RJ11 x 4	N/A	N/A	N/A
<b>VoIP Interface</b>	N/A	N/A	N/A	N/A
<b>Default IP Address</b>	N/A	N/A	N/A	N/A
<b>Default User Name &amp; Password</b>	N/A	N/A	N/A	N/A
<b>SIP Protocol</b>	N/A	N/A	N/A	N/A
<b>Speech Coding</b>	8 kbps G.729A	8 kbps G.729A	8 kbps G.729A	8 kbps G.729A
<b>Channel Coding</b>	8 kbps Convolutional+CRC	8 kbps Convolutional + CRC	8 kbps Convolutional+CRC	8 kbps Convolutional+CRC
<b>Transmission Data Rate</b>	170.678 kbps	170.678 kbps	170.667 kbps	170.678 kbps
<b>User Data Rate</b>	128 kbps duplex	128 kbps duplex	128 kbps duplex	128 kbps duplex
<b>Duplex</b>	Time Division Duplex (TDD)	Time Division Duplex (TDD)	Time Division Duplex (TDD)	Time Division Duplex (TDD)
<b>Voice Quality</b>	TIA/EIA-470B	TIA/EIA-470B	TIA/EIA-470B	TIA/EIA-470B

## Technical Specifications continued

Electrical Specifications	PRO Base Unit	PRO-HC Handset	UHF-HC Handset	DuraWalkie Handset
Number of System ID	65,536	65,536	65,536	65,536
Ring Signal	20-50 Hz, 12-90 Vrms	N/A	N/A	N/A
Auto-Attendant Coding	8 kbps G.729	N/A	N/A	N/A
Flash Time	100-900 ms Programmable	N/A	100-900 ms Programmable	N/A
Power Source	120V/7V AC/DC Adapter	3.6V 1700mAh Li-ion Battery	3.7V, 2300 mAh Li-ion Battery	3.7v, 1700mAh Li-ion Battery
Charge Time	N/A	4 hours (from empty)	4 Hours (From Empty)	4 hours (from empty)
Charge Current	N/A	500 mA	850 mA	500 mA
Battery Talk & Standby Time	N/A	6 Hours/ 50 Hours	90 hours (Walkie off); 27 hours (Walkie mode, 5/5/90)	8 hours/50 hours
Environmental Specifications	PRO Base Unit	PRO-HC Handset	UHF-HC Handset	DuraWalkie Handset
Regulation Compliance	FCC Part 15, Part 68	FCC Part 15, Part 68	FCC Part 15, Part 68; RSS-210, CS03 (Phone mode); FCC Part 90 (Walkie mode)	FCC Part 15, Part 68; Hearing Aid Compatible
Operating Temperature	14°F – 140°F (-10°C – 60°C)	14°F – 140°F (-10°C – 60°C)	14°F – 140°F (-10°C – 60°C)	14°F – 140°F (-10°C – 60°C)
Storage Temperature	14°F – 158°F (-10°C – 70°C)	14°F – 158°F (-10°C – 70°C)	14°F – 158°F (-10°C – 70°C)	14°F – 158°F (-10°C – 70°C)
Humidity	20 – 75 %	20 – 75 %	20 – 75 %	20 – 75 %
IP Rating	N/A	IP 42	IP 55	IP 42
Dimensions	11.0" x 2.1" x 8.5" (215 x 53 x 280 mm)	2.28" x 1.22" x 6.34" (58 x 31 x 161 mm) w/short antenna	5.59" x 2.36" x 1.49" (142 x 60 x 38 mm)	2.28" x 1.22" x 6.34" (58 x 31 x 161 mm) w/short antenna
Device Weight	2 lbs. (907g)	0.39 lbs. (175g)	0.39 lbs. (175g); 0.56 lbs. (257g) including battery	0.39 lbs. (175g)

## Packaging

	DuraFon PRO System	DuraFon PRO-BU Expansion Base	DuraFon PRO-HC Handset	UHF-HC Handset	DuraWalkie Handset
<b>Master Carton</b>					
Quantity	6	6	6	6	6
Weight	34.5 lbs. (15.6 kg)	22.8 lbs. (10.3 kg)	11.4 lbs. (5.2 kg)	11.5 lbs. (5.2 kg)	11.4 lbs. (5.2 kg)
Dimensions (inches)	22" x 21" x 14"	18" x 14" x 16"	22" x 11" x 9"	18" x 13" x 9"	22" x 11" x 9"
Dimensions (cm)	55.9 x 53.3 x 35.6 cm	45.7 x 35.6 x 40.6 cm	55.9 x 27.9 x 22.9 cm	45.7 x 33 x 22.9 cm	55.9 x 27.9 x 22.9 mm
<b>Contents</b>					
Base Station	1 (DuraFon PRO BU Base Station)	1 (DuraFon PRO BU Base Station)	N/A	N/A	N/A
Base AC/DC Adapter	1	1	N/A	N/A	N/A
Base Antenna	1	1	N/A	N/A	N/A
Handset	1 DuraFon PRO HC Handset	N/A	1 DuraFon PRO HC Handset	1 DuraFon-UHF-HC Handset	1 DuraWalkie Handset
Handset Antenna	Low Profile Handset Antenna x 1; Optimal Performance Handset Antenna x 1	N/A	Low Profile Handset Antenna x 1; Optimal Performance Handset Antenna x 1	1 Handset Antenna	Low Profile Handset Antenna x 1; Optimal Performance Handset Antenna x 1
Battery	1700mA Li-ion Battery Pack	N/A	1700mA Li-ion Battery Pack	2300mA Li-ion Battery x 1	1700mA Li-ion Battery Pack
Desktop Charger	1	N/A	Desktop Charger	Desktop Charger	Desktop Charger
Charger AC/DC Adapter	1	N/A	Charger AC/DC Adapter	Charger AC/DC Adapter	Charger AC/DC Adapter
Telephone Cord	4	4 Telephone Cords	N/A	N/A	N/A
RJ-45 Cable	N/A	N/A	N/A	N/A	N/A
Audio In Cable	Audio In Cable	Audio In Cable	N/A	N/A	N/A
Belt Clip	Belt Clip	N/A	Belt Clip	Belt Clip	Belt Clip

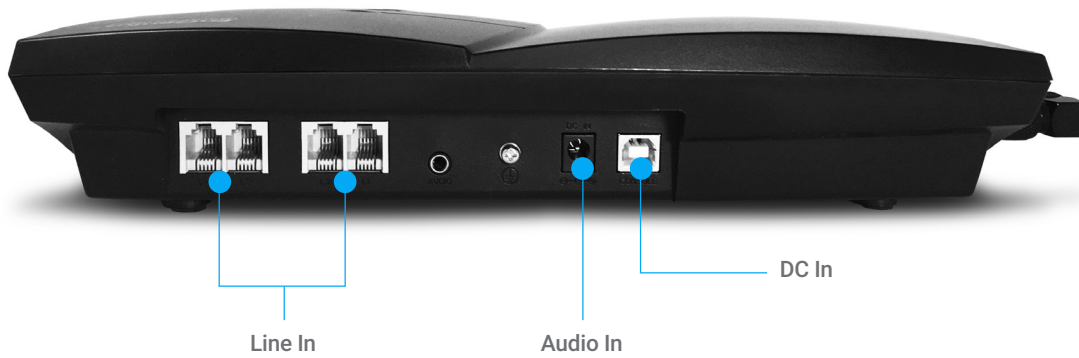
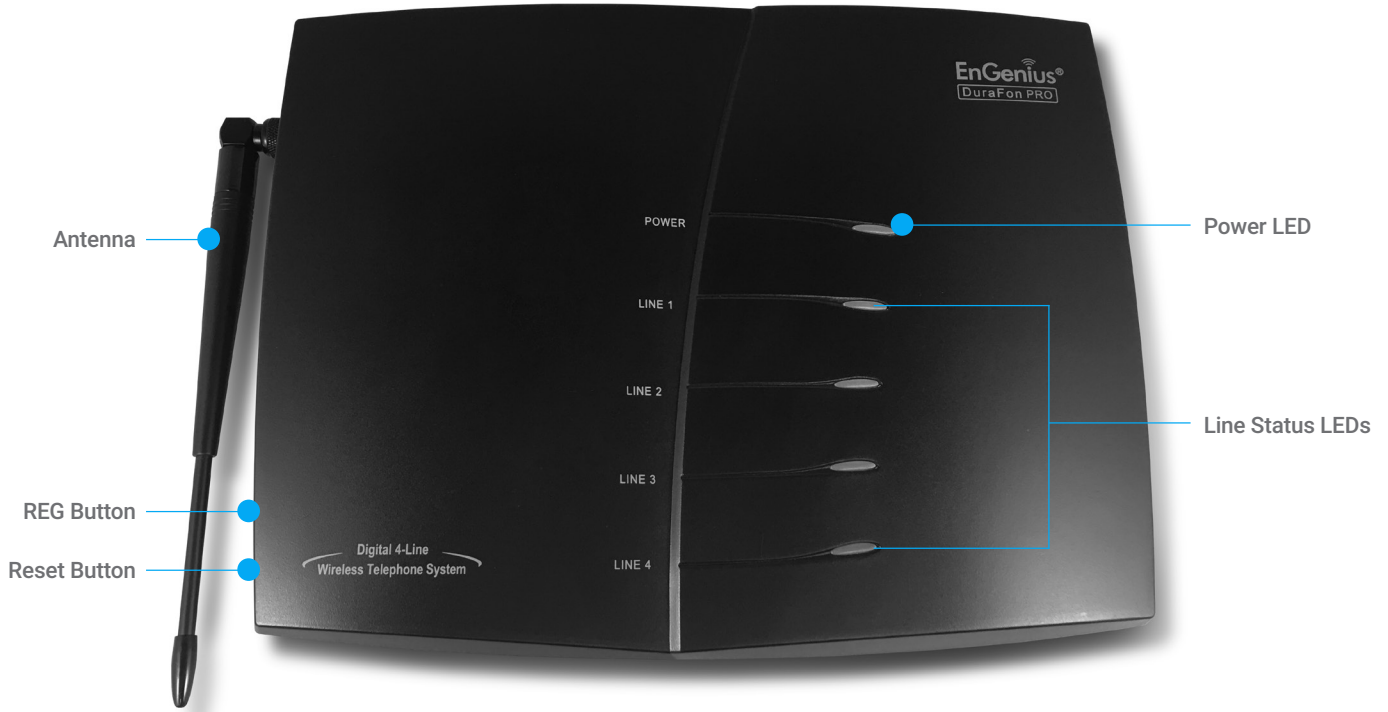
## Packaging continued

	DuraFon PRO System	DuraFon PRO-BU Expansion Base	DuraFon PRO-HC Handset	UHF-HC Handset	DuraWalkie Handset
<b>Contents</b>					
Durapouch	N/A	N/A	N/A	N/A	N/A
User's Manual	1	N/A	N/A	N/A	N/A
Quick Guide	1	1	1	1	1
Warranty	1 Year; Extended 3 Year (optional)	1 Year; Extended 3 Year (optional)	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	FCC Part 15, Part 68; RSS-210 CS03 (phone mode); FCC Part 90 (Walkie mode)	FCC Part 15, Part 68

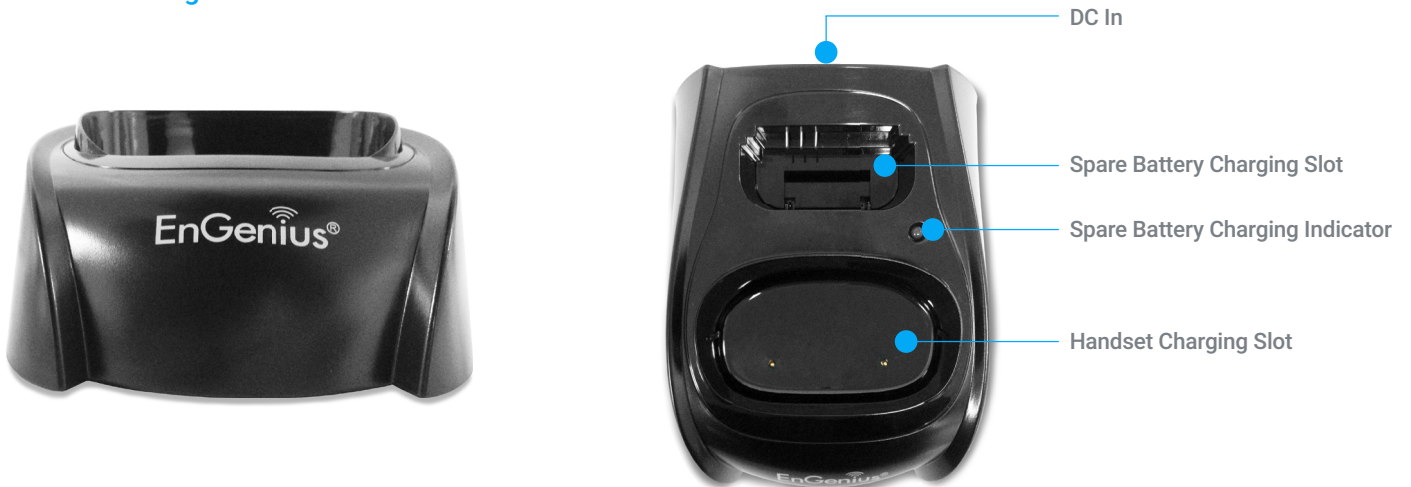
## DuraFon PRO Handset



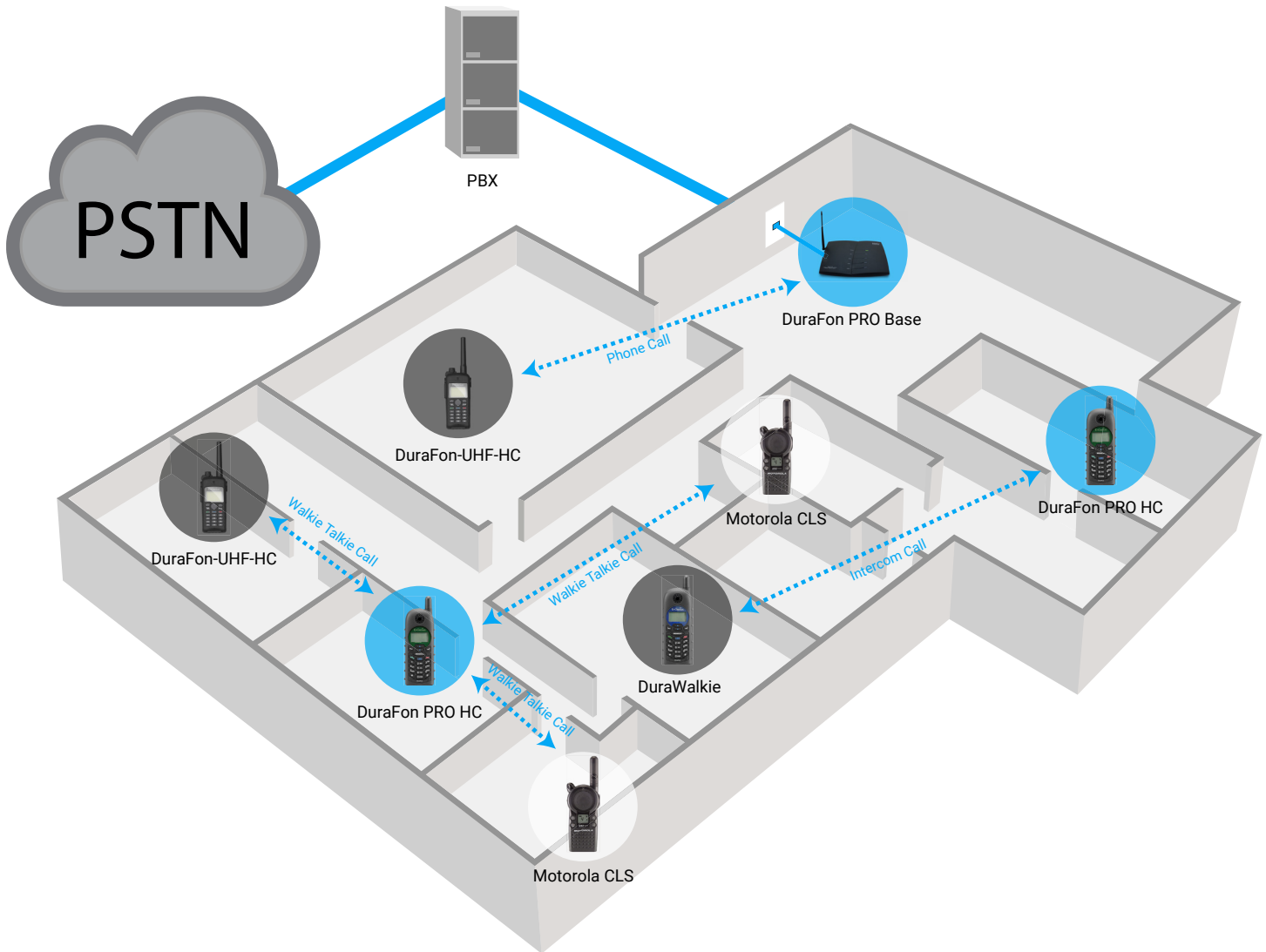
## DuraFon PRO Base Station



## DuraFon PRO Charger



## DuraFon PRO 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.

EnGenius Technologies | 1580 Scenic Ave. Costa Mesa, CA 92626

Email: [partners@engeniustech.com](mailto:partners@engeniustech.com) | Phone: 888-735-7888 | Website: [engeniustech.com](http://engeniustech.com)

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