

DX300

Wireless Headset System



Operating Instructions

HME

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HM Electronics, Inc. is not responsible for equipment malfunctions due to erroneous translation of its publications from their original English version. Illustrations in this publication are approximate representations of the actual equipment, and may not be exactly as the equipment appears.

FCC NOTICE

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by HM Electronics, Inc. could void the users authority to operate this equipment.

Hereby, HM Electronics, Inc. declares that the DX300 is in compliance with the essential requirements and other relevant provisions of R&TTE Directive 1999/5/EC.



This product operates in the 2400 to 2483.5 MHz frequency range. The use of this frequency range is not yet harmonized between all countries. Some countries may restrict the use of a portion of this band or impose other restriction relating to power level or use. You should contact your Spectrum authority to determine possible restrictions.

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

The European Union (EU) WEEE Directive (2002/96/EC) places an obligation on producers (manufacturers, distributors and/or retailers) to take-back electronic products at the end of their useful life. The WEEE Directive covers most HME products being sold into the EU as of August 13, 2005. Manufacturers, distributors and retailers are obliged to finance the costs of recovery from municipal collection points, reuse, and recycling of specified percentages per the WEEE requirements.

Instructions for Disposal of WEEE by Users in the European Union

The symbol shown below is on the product or on its packaging which indicates that this product was put on the market after August 13, 2005 and must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of the user's waste equipment by handing it over to a designated collection point for the recycling of WEEE. The separate collection and recycling of waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local authority, your household waste disposal service or the seller from whom you purchased the product.



SECTION 1. INTRODUCTION

The DX300 provides secure communication among the coaching staff

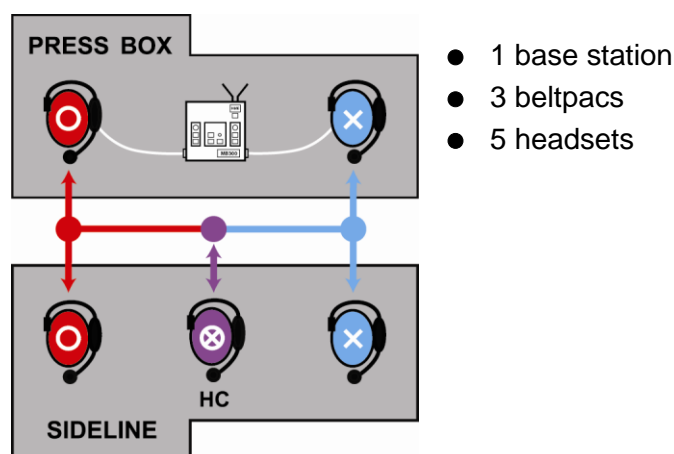
Spotters in the press box can communicate with offense “O” only, defense “X” only or “ALL” coaches via headsets connected directly to the base station

Coaches on the sideline wear belt pacs with headsets to communicate with each other and the spotters

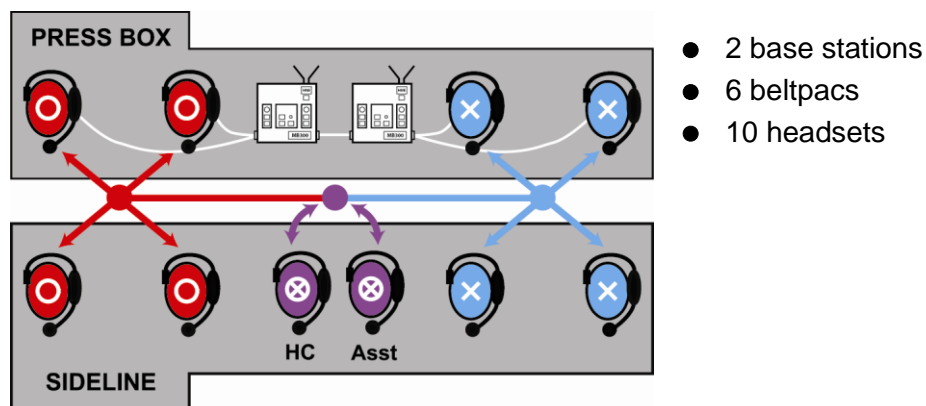
Belt pacs can be set up for communication with any combination of offense, defense and ALL

This manual includes detailed setup and operating instructions for your DX300 system

Basic 5-Coach System



Expanded 10-Coach System



SECTION 2. EQUIPMENT IDENTIFICATION

STANDARD EQUIPMENT



Base station



Antennas



Power adapter and cord



Headset



Base station
interconnect cable



10-pin
spring clamp
connector



Battery sled



Beltpac with headset, pouch and battery

OR



All-in-one headset with battery



Battery charger with power supply and cord
for beltpac and all-in-one headset batteries



Travel case

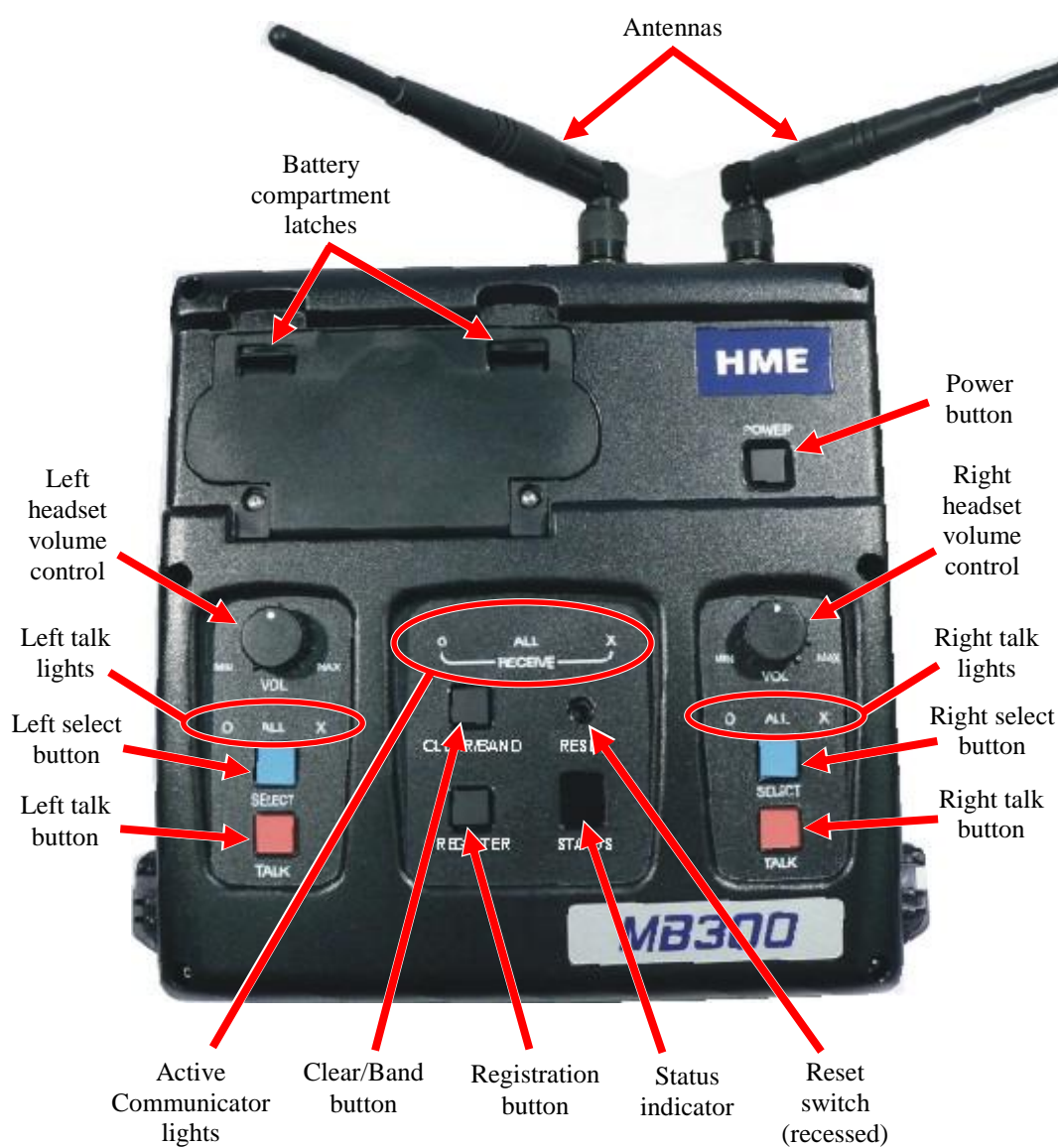
OPTIONAL EQUIPMENT

<p>Headset with dual ear muffs Model # HS15D</p> 	<p>Headset, all-in-one, with battery Model # WH300</p> 
<p>Headset extension cable, 6 ft (1.83 meter)</p> 	<p>Foam earmuffs for all-in-one headset</p> 
<p>Rechargeable battery for base station Model # BAT850</p> 	<p>Battery charger for base station batteries Model # AC850</p> 
<p>Remote antenna kit with 6 foot (1.83 meter) cable and bracket</p> 	<p>Remote antenna kit with 30 foot (9.14 meter) cable and bracket</p> 
<p>Adapter cable for headset w/ dynamic microphone and XLR connector Model # MD-XLR4F MD-XLR4M MD-XLR5F</p> 	

EQUIPMENT FEATURES

Base Station

Top Panel —



Front Panel —



Auxiliary audio
in/out volume
adjustments
(recessed)

Left Side Panel —

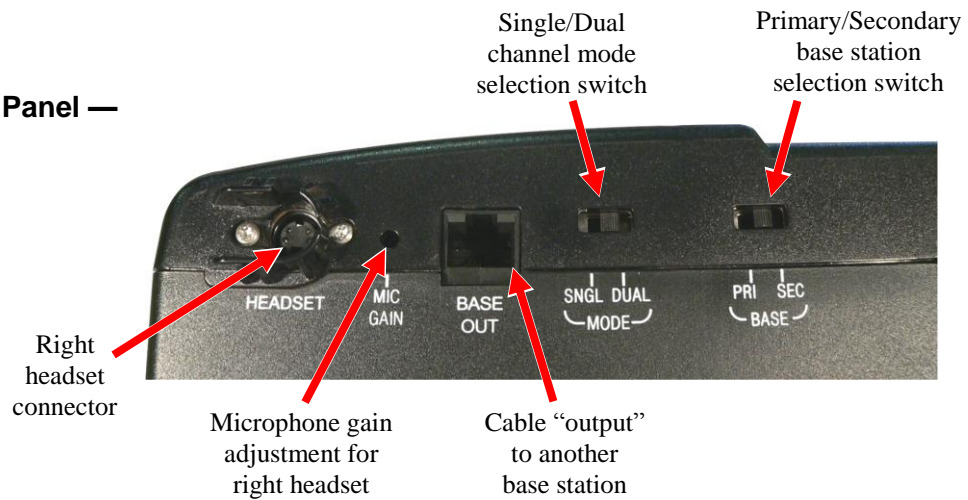


Cable “input”
from another
base station

Microphone gain
adjustment for
left headset

Left headset
connector

Right Side Panel —



Right
headset
connector

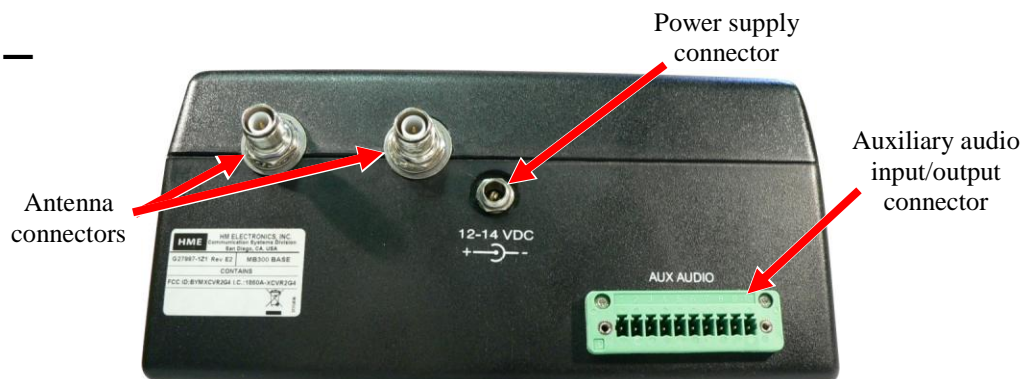
Microphone gain
adjustment for
right headset

Cable “output”
to another
base station

Single/Dual
channel mode
selection switch

Primary/Secondary
base station
selection switch

Rear Panel —



Antenna
connectors

Power supply
connector

Auxiliary audio
input/output
connector

Belpac



All-In-One Headset (optional)

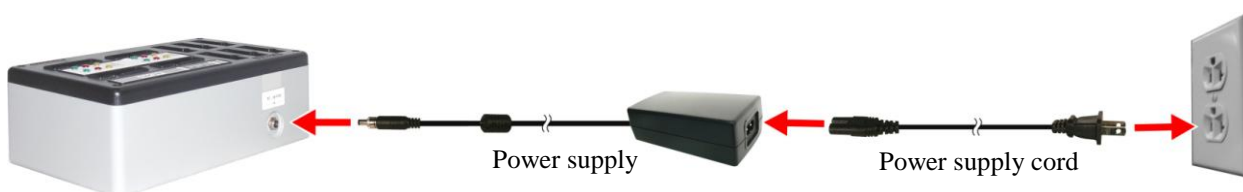


SECTION 3. EQUIPMENT SETUP

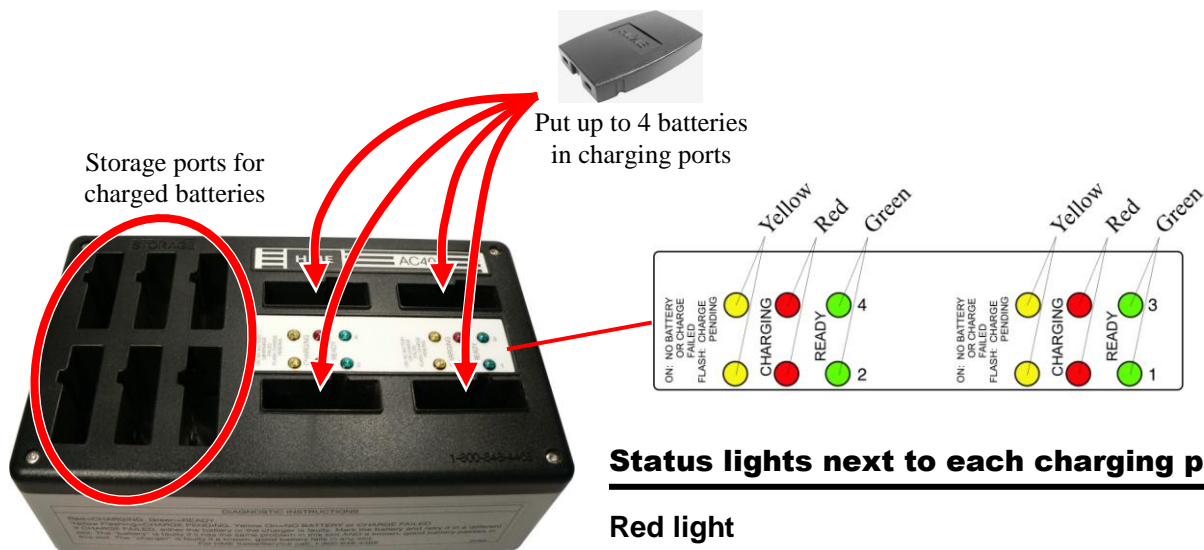
BATTERY CHARGER

NOTE: Set up the battery charger and charge all beltpac batteries while you are setting up the base station

- 1** Connect power supply to charger and electrical outlet



- 2** Charge all beltpac batteries
Charging time is approximately 3 hours



Status lights next to each charging port

Red light

- Stays on steady while battery is charging

Green light

- Goes on when battery is fully charged

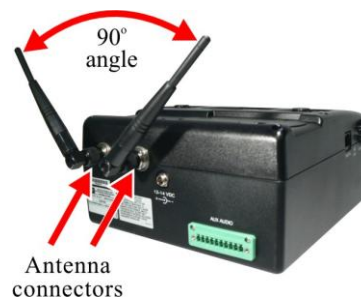
Yellow light

- Stays on steady when charging port is empty
- Flashes if battery is too hot to charge
- Next to battery in charging port means charge has failed – See instructions on side of charger

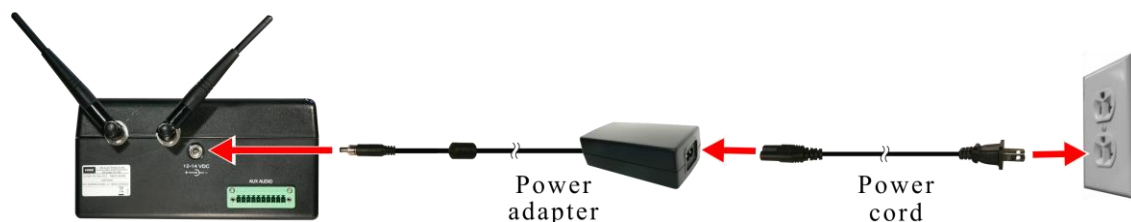
BASE STATION

- 1** Screw both antennas onto the connectors on the back of the base station

Tighten at 90° angle



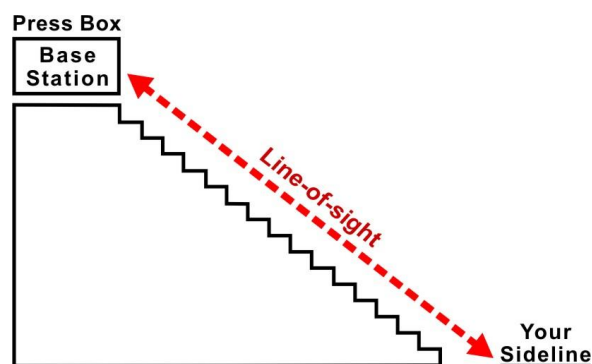
- 2** Plug power adapter into base station and screw nut onto connector, then plug power cord into power adapter and electrical outlet



NOTE: A fully charged battery can be kept in the base station as a backup in case of AC power interruption

- 3** Set up base station in press box, where no objects are blocking the line-of-sight from base station to your sideline

If interference is caused by objects in line-of-sight or sun screen on press box windows, refer to remote antenna installation on page 17



- 4** Press **POWER** button to turn power on

- 5** Plug headsets into base station, inserting headset plugs all the way into connectors



Optional Battery Operation of Base Station

The base station can operate on battery power when AC power is unavailable

NOTE: Always plug base station into AC power when it is available
Turn base station off during halftime to conserve battery power

Typical base station battery life when used continuously is as follows

Energizer ULTIMATE Lithium	5 hours
BAT850 Rechargeable Battery	2¼ hours
Duracell Quantum	35 minutes

- 1** If you are using the battery sled, load 6 “AA” batteries into it
- 2** Pull back on the battery compartment latches and lift the battery compartment cover on the base station



- 3** Insert the battery sled or rechargeable BAT850 battery (optional) into the battery compartment and close the cover



- 4** If you are using the BAT850 battery, put it in the AC850 battery charger (optional) for recharging after each use
Follow the instructions received with the charger
Charging time is approximately 3 hours



AC850 Battery Charger

NOTE: When base station battery power is low, everyone connected to or registered to that base station will hear a tone in their headset, repeating every 8 seconds and both headset select lights will blink

Spectrum Friendly™ Interference Avoidance

Multiple base stations can operate on high or low parts of the frequency band to prevent interference, which may be heard in a headset as popping sounds. For example, if you have 4 base stations, set 2 on low band and 2 on high band, as follows

NOTE: If you have more than one base station, the one you set up for interference avoidance will be considered the “primary” base station. All other “secondary” base stations will automatically set themselves to the same frequency band as the primary base station when they are initialized.

1 Turn the base station power on

The STATUS window will show “8” for a few seconds

After the “8” disappears, the STATUS window will be blank



2 Press and hold the CLEAR/BAND button and, while you are still holding the CLEAR/BAND button, press and hold the REGISTER button

The STATUS window will show L, H or A



3 Press the CLEAR/BAND button repeatedly to cycle through parts of the frequency band — L = Low end, H = High end and A = All

Stop at the desired setting and wait until “c” appears on the STATUS display



NOTE: Base stations are shipped in the “A” (default) position. “c” will only appear on the STATUS display if you are setting the frequency band the first time, or you are changing the setting. If you stop at L, H or A that was already set, an “8” will appear for a few seconds and the STATUS display will become blank. If you change a base station’s existing frequency band setting, you will have to re-register all beltpacs and/or all-in-one headsets that were registered to that base station.

Primary/Secondary Base Station Setting

On the right side of the base stations, leave the **BASE** switch in the **PRI** position for the primary base station
Move the **BASE** switch to the **SEC** position on each secondary base station, and then press the base station **POWER** switch twice to turn the power off and back on again



Right side of base station

Multiple Base Stations

Up to 20 coaches can communicate using the DX300, 5 per base station, by interconnecting up to 4 base stations as described below

With multiple base stations, one will be considered the main or primary base station, and all others will be considered secondary base stations

Initialize Multiple Base Stations

Multiple base stations must be “initialized” according to the following instructions, so their frequencies will not cause self-interference

After initializing each base station, register each beltpac and/or all-in-one headset that will be used with that base station

- 1** With the primary base station powered on first, turn on the secondary base station

The **STATUS** window will show a double bar



Status window with double bar

- 2** Press the **REGISTER** button on the primary base station
The **STATUS** window will show a small “o”



- 3** Press the **REGISTER** button on the secondary base station to assign it a number (1, 2 or 3)
Wait until the base is initialized (approximately 10 seconds)

CAUTION: If more than two base stations will be used, each secondary base station must be assigned a different number (1, 2 or 3), or interference will occur

RECOMMENDED: If only two base stations will be used, set the secondary base station to #2

HINT! Mark each base station with its assigned number, and then, when registering belt pacs and/or all-in-one headsets, mark them with the number of the base station they are registered to, for later identification

- 4** When initialization is complete, the **STATUS** window will show one bar



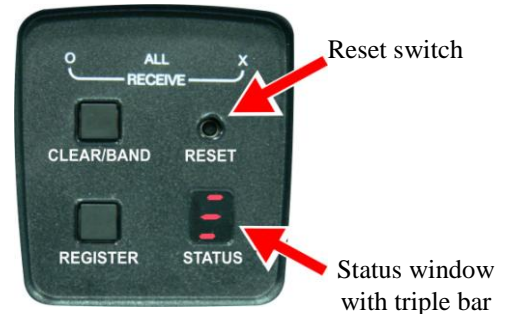
- 5** Press the **REGISTER** button on the primary base station to clear the **STATUS** window
The display will also go blank after timing out



- 6** Repeat steps 1 – 5 to initialize up to three secondary base stations

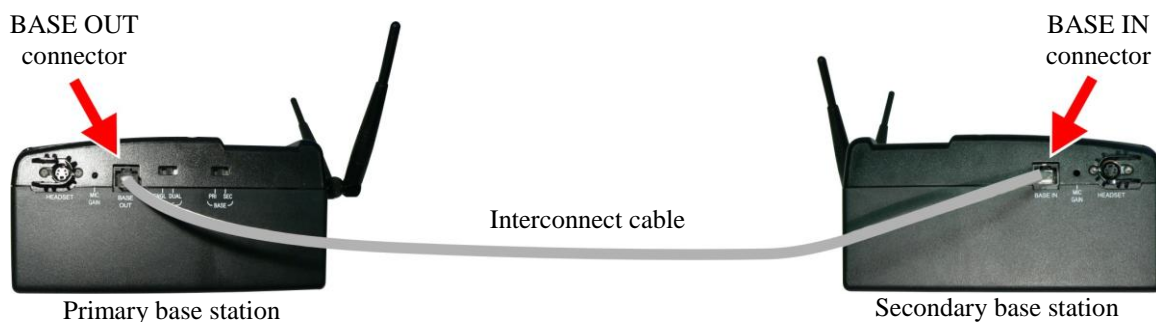
NOTE: If the primary base is powered off for more than 30 seconds, all secondary bases will begin to operate independently. When that happens, the **STATUS** window on each base will show 3 bars.

If the primary base is turned back on, it will be necessary to press the **RESET** switch on each secondary base, to allow it to initialize to the primary base again.



Audio Connection

Connect base stations with the provided interconnect cable, from the **BASE OUT** connector on one to the **BASE IN** connector on the other

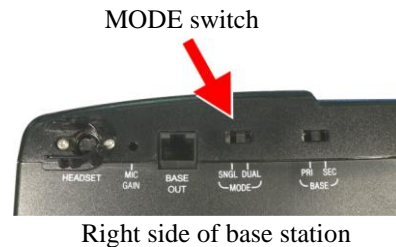


Single/Dual Channel Setting

In the single-channel (SNGL) mode — 4 beltpacs and/or all-in-one headsets can be used in the hands-free mode, communicating in “O” channel only

In the dual-channel (DUAL) mode — 3 beltpacs and/or all-in-one headsets can be used in the hands-free mode, communicating in either “O” or “X” channel, or “ALL” (both channels)

On the right side of the base station(s), set the MODE switch to the single or dual-channel position



Base Station Microphone Gain Adjustment

The microphone gain adjustment allows you to adjust the level of your voice as it is transmitted from the headsets plugged into the base station

Microphone gain must be adjusted for each base station headset.

- 1** Use a headset that is plugged into the right side of a base station, and locate the recessed MIC GAIN adjustment in a hole on the right side of the base station
- 2** Insert a small screwdriver in the hole and turn the adjustment clockwise to increase or counterclockwise to decrease microphone gain
- 3** Speak into the right headset microphone and listen to your own voice level (sidetone) in the headset as you adjust the microphone gain
- 4** Use a headset that is plugged into the left side of the base station, and locate the MIC GAIN adjustment on the left side of the base station, and then repeat steps 2 and 3 for the left side headset
- 5** Repeat steps 1 through 4 for each base station

Insert small screwdriver



Base station microphone gain adjustment

<p>NOTE: Base station microphone gain is factory set at about one-third from minimum level</p>

BELTPACS

Belpac Registration

NOTE: Registration of all-in-one headsets is the same as the belpac registration described below, except for step 2
If you have more than one base station, you must register each belpac to the base station it will be used with

1 Turn the base station power on, and belpac power off

2 Plug the headset into the belpac and put the headset on your head

3 Press the REGISTER button on the base station registration panel

A lower case “o” will appear on the STATUS window

4 Press and hold the ALL button on the belpac while you press and release its PWR (power) button

After a brief delay, you should hear “Registration complete” in the headset

An ID number for this belpac will appear briefly on the STATUS window

5 Repeat steps 1 through 4 for each belpac



NOTE: If the registration is not successful, you will hear “Registration failed” and the STATUS window will be blank. If this happens, refer to TROUBLESHOOTING in Section 5, page 22.

NOTE: If you try to register more than 15 belpacs to a base station:

- An “F” (Full) will appear in the STATUS window and you will hear “Registration failed” in the headset
- Clear all current registrations by pressing and holding the CLEAR/BAND button while you press and release the RESET button with a pen point
Continue holding the CLEAR/BAND button after you release the RESET button until the clear code “c” (lower case) appears on the STATUS window
- Register all belpacs, one at a time, including previously registered belpacs

Beltpac or All-In-One Headset Operating Mode Setup

Set up belt pacs and/or all-in-one headsets to operate in the desired mode by pressing and holding the button combinations shown below when you press the **PWR** (power) button to turn the unit on

Mode	Button Combination	Button Functions
Head Coach (default)	Hold X + O + ALL and press PWR	X, O & ALL have normal functions
NOTE: Belt pacs and all-in-one headsets are shipped in the Head Coach mode		
Offense only	Hold O and press PWR	X & O work as O ALL has no function
Offense + ALL	Hold O + ALL and press PWR	X & O work as O ALL has normal function
Defense only	Hold X and press PWR	X & O work as X ALL has no function
Defense + ALL	Hold X + ALL and press PWR	X & O work as X ALL has normal function
Offense + Defense only	Hold X + O and press PWR	X & O have normal functions ALL has no function
Latching (Hands-Free, Full-Duplex)	Hold ALL + ▲ and press PWR	X & O will latch on when pressed and released, for a normal two-way conversation
Push-To-Talk (PTT)	Hold ALL + ▼ and press PWR	X, O & ALL must be pressed and held while you talk, and released to listen

NOTE: Mode settings will be stored, so your belt pacs and/or all-in-one headsets will have the same mode settings after you turn them off and back on

NOTE: **ALL** does not latch on, and must be held down to hear both **O** and **X**

Belpac or All-In-One Headset Adjustments

Sidetone Adjustment (Belpac only, not on all-in-one headset)

When you speak into the microphone, you can hear sidetone (your own voice) in the belpac headset

Sidetone can be adjusted as follows:

- 1** Be sure the belpac power is on
- 2** While holding down the “O” button, press the volume-up ▲ or volume-down ▼ button as many times as needed to reach an acceptable level
If you reach the high limit, you will hear “maximum” in the headset
If you reach the low limit, you will hear double beeps

Maximum sidetone level is recommended

Microphone Gain Adjustment

Some users speak louder or softer than average

The microphone gain adjustment helps to compensate for extremes in speaking level of coaches using belpacs or all-in-one headsets

NOTE: The microphone gain can be monitored through sidetone, or preferably by someone else using a belpac or all-in-one headset, or at the base station

- 1** Be sure the belpac or all-in-one headset power is on
- 2** While holding down the “X” button, press the volume-up ▲ or volume-down ▼ button as many times as needed to reach an acceptable level
If you reach the high limit, you will hear “maximum” in the headset
If you reach the low limit, you will hear double beeps

Recommended microphone gain levels are:

Belpacs – 12 presses down from maximum

All-in-one headsets – 8 presses down from maximum

NOTE: Microphone gain and sidetone adjustments will be saved in memory and does not need to be reset after the unit is turned off and on

OPTIONAL REMOTE ANTENNA INSTALLATION

It may be necessary to locate the antennas away from the base station if it is not possible to avoid obstructions between it and the sideline, or if the press box has windows that are coated with a metalized sun reflecting film

Either of these situations may block signals from the press box base station to the beltpacs on the field

Remote antenna kits with either 6 foot (1.83 meter) or 30 foot (9.14 meter) cables can be used to mount the antennas wherever necessary to alleviate this problem

To order a remote antenna kit, refer to the optional equipment shown on page 3. Installation instructions are enclosed with the remote antenna kit

OPTIONAL AUXILIARY EQUIPMENT CONNECTION

Auxiliary equipment such as audio/video recorder or a hardwired intercom can be connected to the rear panel of the base station

- 1 Connect the wires from your auxiliary audio equipment to the enclosed 10-pin connector according to the following table**



Pin	Connections	
1	Aux In - O	Differential pair
2	Aux In + O	
3	Aux Out - O	Differential pair
4	Aux Out + O	
5	Ground	
6	No Connection	
7	Aux In - X	Differential pair
8	Aux In + X	
9	Aux Out - X	Differential pair
10	Aux Out + X	

- 2 Plug the connector into the back panel of the base station as shown above**

- 3 Using a small screwdriver in the holes on the front panel of the base station, you can adjust the IN and OUT sound level of “O” and “X” communication channels as needed**



SECTION 4. EQUIPMENT OPERATION

THE BASICS








IN THE PRESS BOX – Base Station Operation



- 1** Press base station **POWER** button to turn on power
 - 2** Put left or right headset on your head
Use headset controls on same side of base station as headset
 - 3** Adjust headset volume as needed
- CAUTION:** Having your headset at a high volume level for a long time can cause hearing damage
- 4** Press channel **SELECT** button; Green light appears above **O**, **ALL** or **X** selection — Press **SELECT** button again to change selection
 - 5** To talk to coaches, press and release **TALK** button – Green light turns red
Talk and listen to coaches as in normal telephone conversation
Press and release **TALK** button again when you finish talking
(You will still hear the other coaches but they will not hear you)
 - 6** To turn base station off, press and hold **POWER** button until the lights go off

ON THE FIELD –

Belpac / All-In-One Headset Operation

- 1** Be sure fully charged battery is in the unit
 - 2** If using belpac —
Plug headset into belpac and put headset on your head
Slide belpac into pouch and clip it on your belt
 - 3** Press and release **PWR** (power) button to turn unit on
 Belpac power button
 All-in-one headset power button
(above earpiece on inside surface)
 - 4** Press and release **O** button to communicate with offense coaches or **X** button to communicate with defense coaches
 Speak to offensive coaches
 Speak to defensive coaches
 - 5** To communicate with both offense and defense coaches, press and hold **ALL** button while talking
 Speak to all coaches
 - 6** Adjust headset volume as needed
 Increase volume  Decrease volume
- CAUTION:** Having your headset at a high volume level for a long time can cause hearing damage
- 7** To turn unit off, press and hold power button for about 2 seconds until you hear “Power off”

Changing Batteries

Belpac batteries typically provide 20 hours of continuous use in listen mode

If you hear “Change battery” in your headset —

- 1** If using belpac, remove it from its pouch
- 2** Slide battery release latch in direction of arrow
- 3** Lift battery out of belpac or headset
- 4** Place battery in battery charger port for recharging
- 5** Install fully charged battery in belpac or headset
- 6** If using belpac, put it back in its pouch



SECTION 5. TROUBLESHOOTING

If you are unable to correct any of the problems described below or if your problem is not covered, call 1-800-909-6604 for assistance

- **Power light on base station does not come on when power button is pressed**

Be sure the power supply is properly connected to the base station, and the power cord is properly connected to the power supply and electrical outlet

If operating on battery power, be sure the battery is charged and in the battery compartment with the cover is securely closed

- **Beltpac/Headset power lights do not turn green and you hear “out of range”**

Be sure the base station power is on

Turn beltpac/headset power on and off

Beltpac/Headset may be too far from the base station

- **When trying to register a beltpac/headset, you hear “registration failed”**

Press the **RESET** button on the base station with the point of a pen

The **STATUS** window will show “8” and then become blank

Try again to register the beltpac/headset

If registration fails again, call your dealer for assistance

- **Other coaches can not hear me when I talk**

Be sure you are pressing the **X** or **O** button on the beltpac/headset, or the **TALK** button on the base station

Be sure you are pressing the button for the correct channel

Be sure the headset plug is properly connected to the beltpac or base station

- **With more than one base station, offensive spotter can not hear O or ALL transmission from another base, or defensive spotter can not hear X or ALL transmission from another base**

Be sure interface cable is properly connected from BASE OUT on the primary base station to BASE IN on the secondary base station, and so on

If problem is not resolved, try using a different interface cable

- **No or low auxiliary audio sound**

Check wiring from auxiliary equipment to AUX AUDIO connector on back of the base station

Turn AUX AUDIO adjustments on front of base station with a small standard (flat) screw driver, clockwise to increase level and counterclockwise to decrease level

- **Coaches using beltpacs or all-in-one headsets can not hear or talk to coaches using base station headsets**
 Be sure base station headsets are fully plugged into the base station headset connectors
 Be sure the appropriate SELECT lights are red (O, X or ALL) when coaches at base station are talking
 Be sure coaches are talking or listening on the right channel (O, X or ALL)
- **Beltpac range is bad**
 Be sure antennas are properly connected and tightened on base station
 Be sure base station is positioned where there are no physical obstructions blocking line-of-sight from the base station to your sideline
- **Beeping is heard in base station headset and SELECT lights are blinking**
 Base station is operating on battery power and battery is low
- **Not all beltpac buttons are working**
 Button functions may have been changed to work in the desired operating mode
 (See page 15)
- **There is interference from a cordless telephone**
 If there is a 2400MHz cordless telephone nearby, interference may occur
 If it does occur, changing frequencies on the telephone should eliminate the problem
 If it does not, move the phone as far as possible from the base station, or use another type phone

(If your base station does not have a battery backup)
In the event of an electrical power outage — such as from lightning or a power generator failure, if you experience problems with your DX300 equipment after the power comes on again, unplug the AC power supply from its electrical outlet and wait 15 seconds, then plug it back in

FREQUENTLY ASKED QUESTIONS

- **Are the battery charger and base station power supplies interchangeable?**

Yes

- **What is the maximum recommended number of base stations that can be linked together with interconnect cables?**

Four

- **Does linking the base stations automatically prevent them from interfering with each other?**

No, all base that are linked together must be initialized to prevent them from interfering with each other's frequencies

- **If the primary base station is turned off just momentarily (before the secondary base(s) have a chance to start working independently), will the secondary base(s) automatically re-initialize to the primary?**

Yes, the secondary base(s) will re-establish communication without being initialized again

- **Will a secondary base station continue to operate if its primary is turned off for a period of time?**

Yes & No. Secondary base stations will initially stop operating when the primary base is turned off, but will resume operation independently after about 40 seconds

Three bars will appear in its STATUS display, and its beltpacs will still be able to communicate

If the primary base station is turned back on, the secondary base must be turned off and on again to re-establish proper initialization

- **Can I use more than three beltpacs on a single base station in dual channel mode?**

Yes, but only three users will be able to transmit at the same time

Up to 15 beltpacs can be registered to a single base station

Beltpacs and all-in-one headsets should be placed in press-to-talk mode when more than 3 beltpacs or all-in-one headsets are used (See page 11)

- **What should I do if my carrying case and equipment get wet?**

Dry them out thoroughly before further use

Be sure all equipment is dry before using it again

CAUTION: Plugging wet electrical equipment into an AC power outlet is dangerous!

SECTION 6. TECHNICAL DATA

EQUIPMENT SPECIFICATIONS

Base Station

GENERAL —

Frequency Range:	All, 2400 – 2483.5 MHz Low, 2401.92 to 2439.94 MHz High, 2443.39 to 2481.41 MHz
Frequency Response:	200 Hz to 3.5 kHz
Power Requirements:	100-240VAC, 50-60Hz 12-14VDC or six AA batteries (NiMH optional)
Temperature Range:	32-122°F (0-50°C)
Size:	8" x 8" x 3.5" (20.32 x 20.32 x 8.89 cm)
Weight:	2.75 lb with battery (1.25 kg)
# of Beltpacs per Base:	15 can be registered; any 4 can have simultaneous full-duplex communication at one time (in single channel mode)
8-Wire I/O:	RJ45, 600Ω balanced out, high impedance in
Auxiliary Audio:	10-Ckt Phoenix connector, 600Ω balanced out, high impedance in, level adjustable
Headset Connectors:	4-pin mini-DIN
Electret microphone:	45 KΩ
Headset Output:	200mW into 32Ω
Top Panel Controls and Indicators:	Power button Left and Right headset controls Rotary knobs for headset volume (VOL) adjustment Headset SELECT buttons (O=Offense, X=Defense or ALL) Headset TALK buttons Registration controls CLEAR/BAND button REGISTER button RESET switch (recessed) STATUS indicator Headset transmit dual-color LEDs, left and right (red/green) – O, X, ALL RECEIVE LEDs (green) – O, X, ALL
Front Panel:	Auxiliary input and output level adjustments
Left Panel:	8-wire audio port Microphone gain adjustment Left headset connector
Right Panel:	Right headset connector Microphone gain adjustment 8-wire audio port Single/Dual selection switch Primary/Secondary selection switch
Rear Panel:	Auxiliary input and output connectors Antenna connectors
Antenna Type:	External ½ -wave dipole (R-TNC connector) RX/TX horizontal/vertical diversity
System Distortion:	<2%
Communication Security:	64-bit encryption dual-slot diversity

TRANSMITTER —

Type:	Frequency hopping, spread spectrum
Transmit Power:	100mW burst
Modulation Type:	Gaussian filtered FSK, TDMA
Frequency Stability:	13 ppm
Harmonics/Spurious:	Exceeds FCC and ETSI specifications over temperature

RECEIVER —

Type:	Frequency hopping, spread spectrum
RF Sensitivity:	<-90dBm w 10^{-3} BER
Frequency Stability:	13 ppm
Distortion:	<2%

Beltpac

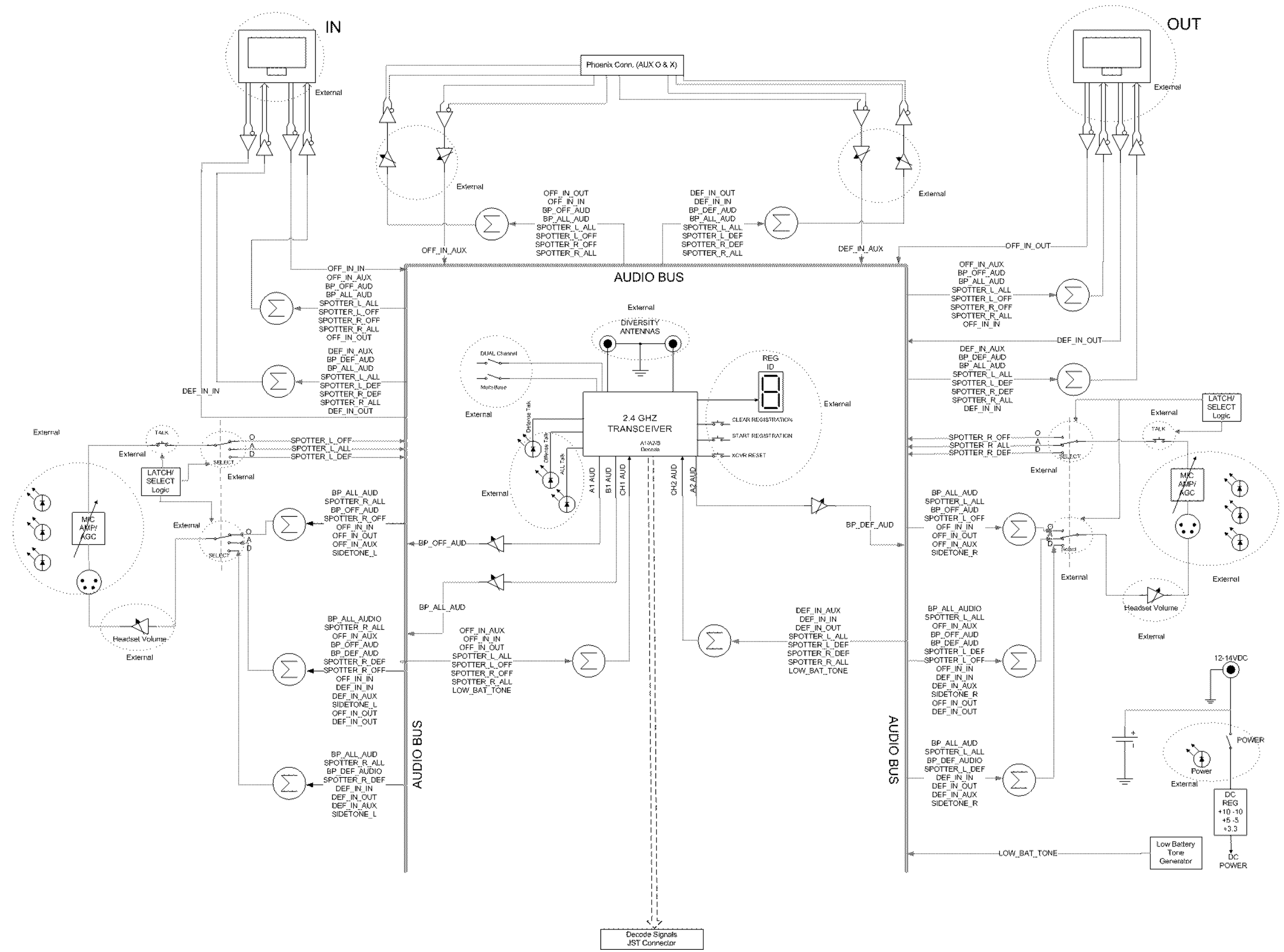
* Frequency Range:	2400 MHz – 2483.5 MHz
Antenna:	Internal, horizontal/vertical diversity
Frequency Response:	200 Hz to 3.5 kHz
Transmit Power:	100mW burst
RF Sensitivity:	<-90dBm w 10^{-3} BER
Battery Requirements:	3.6V lithium ion, rechargeable
Battery Life:	Hands-free – up to 14 hours PTT – up to 20 hours
Temperature Range:	32-122°F (0-50°C)
Weight:	7.4 oz (.21 kg) with battery and pouch
Headset Connector:	4-pin, mini-DIN
Microphone:	Electret
Headset Output:	160mW into 32Ω
Controls:	Power PWR, Volume-up ▲, Volume-down ▼, O, X, ALL
Indicators:	Dual-color LED (red/green)

All-In-One Headset

* Frequency Range:	2400 MHz – 2483.5 MHz
Antenna:	Internal
Frequency Response:	200 Hz to 3.5 kHz
Transmit Power:	100mW burst
RF Sensitivity:	<-90dBm w 10^{-3} BER
Battery Requirements:	3.6V lithium ion, rechargeable
Battery Life:	Hands-free – up to 14 hours PTT – up to 20 hours
Temperature Range:	32-122°F (0-50°C)
Weight:	5.7 oz (.16 kg) with battery
Microphone:	Electret
Headset Output:	160mW into 32Ω
Controls:	Power, Volume-up ▲, Volume-down ▼, O, X, ALL
Indicators:	Transmit LED (red in defense / green in offense) Power LED (red/green)

* **NOTE:** Communicators will follow the frequency range determined by the setting on the Base Station (e.g. All, Low or High).

BLOCK DIAGRAM



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