

STARCOM21 Radio Basics



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Introduction

Mobile radio communications are a part of an overall communications plan to provide a backup in case phone lines, cellular, and internet are down. STARCOM21 allows the Chicago Department of Public Health (CDPH) to conduct 2-way communications to increase the efficiency of coordinated operations with our healthcare partners during a citywide or national emergency. This document is to be utilized as a training tool that outlines how to safely operate the Motorola Model APX6500 mobile as well as handheld radios during normal operations and during an emergency response, as mandated by the **Federal Communications Commission (FCC)**.

The [Troubleshooting](#) section at the end of the guide serves as a resource for targeted actions.

Safety Reminders

Do **NOT** touch the Antenna while operating radio, especially when “keying the microphone” as you may get a shock or Radio Frequency burn. Keying the microphone is the act of pressing the push to talk button on the mic to transmit.

Responding on the Radio

1. To respond to a call out, press and hold the microphone button
 - a. Pictured below are the locations of the microphones, the lightning bolt is the “press to speak” button



2. Listen for the single chirp (if you hear a long medium tone, someone else is trying to speak so release and wait)
3. Wait a second or two before speaking
4. State “[Name of hospital] copies, over”
5. Use plain language when responding, no number or color codes
6. Every radio is assigned a five- or seven-digit ID and can be identified
7. Follow in house procedures for recording all messages
 - a. The [General STARCOM message Form Template](#) is a modifiable resource developed to support your organization’s plans

Communicating Via Radio

1. When trying to communicate with other hospitals and/or CDPH
 - a. Press and hold the mic button and listen for the single chirp (if you hear a long medium tone, someone else is trying to speak. Release the mic button and wait for the line to be clear before trying again.)
 - b. Wait a second or two before speaking and start by stating:
 - i. “This is [Hospital/Partner Name] reaching out to [CDPH or Hospital/Partner Name], do you copy, over?” and release the mic button

- Never call out anyone by name or give your name
- ii. Wait for a response
- iii. Press and hold the mic button and listen for the single chirp (if you hear a long medium tone, someone else is trying to speak. Release the mic button and wait for the line to be clear before trying again.)
- iv. Wait a second or two before speaking and continue to deliver your prepared message. End all of your transmissions by saying the word “over”
- v. All prepared messages should contain the following:
 - Name of your hospital
 - To whom the message is meant to be delivered to (Incident Commander, Planning Lead, or simply the location)
 - The question and/or request being made
 - Any pertinent follow up contact information (telephone number and/or email)
- vi. End your transmission by saying “[Name of Hospital/Partner], over and out.”

Mobile Radio Instructions

1. Powering the Radio

- a. Press the Power button



- b. Adjust volume level with knob on top left corner



- c. Use knob on the top right corner to select the appropriate channel

2. Radio Configuration

- a. All radios use a system of Zones and Channels to communicate. Each zone can have up to 16 channels. IDPH is the owner of the STARCOM system and has updated their template to include 21 different Zones. Knowing what Zone and what Channel will allow you to connect to the appropriate/designated line of communication.
 - i. CDPH Radio Templates in use – [Attachment B](#)
- b. STARCOM21
 - i. New APX6500s Mobile Radios have the updated Zone and Channel Name
 1. Zone IDPH B
 2. Channel 13 (screen will read “EMS R11”)

ii. Older APX6500s Mobile Radios have the older Zone and Channel Name

1. Zone B
2. Channel 15 (screen will read "B EMS R11")



New model



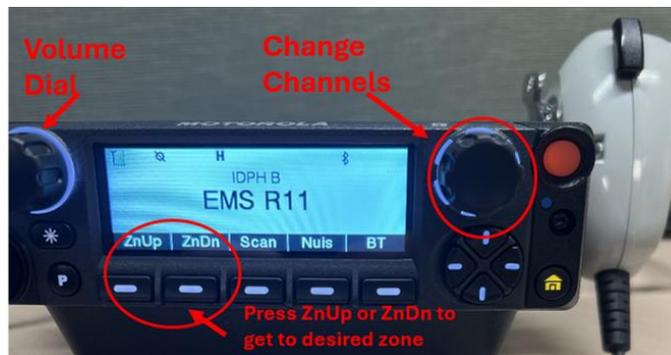
Older model

Note: If you see anything other than the above, you may have to switch to the correct/appropriate channel (instructions below)

3. Changing Zones and Channels

a. New radios

- i. Press the "ZnUp" or "ZnDn" to cycle through all of the Zones until you reach the desired Zone
- ii. Use the knob at the top right corner to cycle through the channels until you reach the desired Channel



b. Older radios

- i. Press the "Zone" button. The current Zone will blink. Use the top right corner Dial to cycle through all of the Zones until you reach the desired Zone.
- ii. Press the "Home" Button when on the right Zone to select it. Current Zone will stop blinking
- iii. Use the top right corner Dial to cycle through all of the Channels until you reach the desired Channel



2) Home

1) Zone

3) Dial

Portable Handheld Radio Instructions



1. Powering the Radio

- a. Turn the top right knob to turn on the radio



- b. The top right knob also raises/lowers the volume
- c. Ensure the battery has been charged



2. Radio Configuration

- a. Just like the Mobile radios, handhelds use the same system of Zones and Channels to communicate. Zones can have up to 16 channels. IDPH is the owner of the STARCOM system and has updated their template to include 21 different Zones. Knowing what Zone and what Channel will allow you to connect to the needed line of communication.
 - i. CDPH Radio Templates in use – [Attachment B](#)

3. Changing Zones and Channels

- a. Radios should be set to Zone IDPH B (Newer Radios) or Zone B (older radios)
- b. If you see anything other than that, you may have to switch it back. To do this, press the Zone Button and use Navigation arrows to find Zone “IDPH B”. Then use the dial at the top center (Channel Dial) to get to channel “EMS R11” (13)



Attachment A: Troubleshooting

Follow these steps when having issues with your radio

Description	Follow up actions
Power on Mobile	Check to make sure the radio is connected properly at both points of the transformer and to the electrical outlet and that it is turned on. Be aware that radios do not automatically turn back on after a power surge.
Channel on Mobile	Check to make sure that the radio is on the correct Zone and Channel – IDPH B, Channel EMS R11. If not follow these steps to navigate to the appropriate talkgroup. NOTE: If after searching for the appropriate channel you cannot find the appropriate Zone, contact the PHEOC at CDPHPHEOC@CityofChicago.Org to address this programming issue.
Antenna on Mobile	Check to make sure the antenna is properly connected and that a good signal is being received
Microphone on Mobile	Ensure that the microphone is properly connected and that it <u>“chirps”</u> when pressing the mic button.
Power on Portable Handheld	<u>Turn</u> the top right knob to the right to turn on the radio. Make sure the battery is sufficiently charged
Channel on Portable Handheld	Check to make sure that the radio is on the correct Zone and Channel – IDPH B, Channel EMS R11. If not follow these steps to navigate to the appropriate talkgroup. NOTE: If after searching for the appropriate channel you cannot find the appropriate Zone, contact the PHEOC to address this programming issue.
Antenna on Portable Handheld	Although not typically removed, make sure antenna is tightened all the way
Microphone on Portable Handheld	When pressing the <u>mic button</u> , listen for the “chirp”. If you hear a long medium tone, someone else is trying to speak so release and wait.
Video	<p>Watch the STARCOM 21 Radio Basics video for additional assistance in troubleshooting</p> <div style="text-align: center;">  </div> <p>You can access the video at:</p> <p>https://bit.ly/STARCOMBasics</p>
Quick Start Guide	Print the Quick Start Guide and keep in the vicinity of the radio for quick assistance

Follow up

Feel free to reach out at CDPHPHEOC@CityofChicago.Org to request additional assistance from the Radio Team

Attachment B: Radio Template

Newer APX 6500

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STARCOM-21 Template



IDPH LHD/Partner Agency Radios ONLY

Zone	IDPH A	IDPH B	CALLING	INCIDENT A	INCIDENT B	RESERVE A	SECURE A	SECURE B	NWS
Channel									
1	IDPH	IDPH	IL-CALL	IL-INC A1	IL-INC B1	IL-RSV 1	IL-SEC A1	IL-SEC B1	NWS-CHI
2	PH RKFRD	EMS	ILEAS	IL-INC A2	IL-INC B2	IL-RSV 2	IL-SEC A2	IL-SEC B2	NWS-QUAD
3	PH PEORIA	EMS R1	MABAS	IL-INC A3	IL-INC B3	IL-RSV 3	IL-SEC A3	IL-SEC B3	NWS-LINC
4	PH SPGRFLD	EMS R2	IDPH	IL-INC A4	IL-INC B4	IL-RSV 4	IL-SEC A4	IL-SEC B4	NWS-STL
5	PH EDWRDS	EMS R3	IPWMAN	IL-INC A5	IL-INC B5	IL-RSV 5	IL-SEC A5	IL-SEC B5	NWS-PDK
6	PH MARION	EMS R4	EMA	IL-INC A6	IL-INC B6	IL-RSV 6	IL-SEC A6	IL-SEC B6	NWS-MKE
7	PH CHMPGN	EMS R5	IL-RGN 2	IL-INC A7	IL-INC B7	IL-RSV 7	Reserved	IL-SEC B7	NWS-SW
8	PH BLLWD	EMS R6	IL-RGN 3	IL-INC A8	IL-INC B8	IL-RSV 8	Reserved	IL-SEC B8	Reserved
9	PH W.CHI	EMS R7	IL-RGN 4	IL-INC A9	IL-INC B9	IL-RSV 9	Reserved	IL-SEC B9	Reserved
10	PH CHI	EMS R8	IL-RGN 6	IL-INC A10	IL-INC B10	IL-RSV 10	Reserved	IL-SEC B10	Reserved
11	PUB HLTH 1	EMS R9	IL-RGN 7	IL-INC A11	IL-INC B11	IL-RSV 11	Reserved	IL-SEC B11	Reserved
12	PUB HLTH 2	EMS R10	IL-RGN 8	IL-INC A12	IL-INC B12	IL-RSV 12	Reserved	IL-SEC B12	Reserved
13	PUB HLTH 3	EMS R11	IL-RGN 9	IL-INC A13	IL-INC B13	IL-RSV 13	IL-SEC A13	IL-SEC B13	Reserved
14	PUB HLTH 4	EMS Ops 1	IL-RGN11	IL-INC A14	IL-INC B14	IL-RSV 14	IL-SEC A14	IL-SEC B14	Reserved
15	IMERT	EMS Ops 2	IL-102A	IL-INC A15	IL-INC B15	IL-RSV 15	IL-SEC DOT15	IL-SEC B15	Reserved
16	REDCROSS	EMS Ops 3	IL-102B	IL-INC A16	IL-INC B16	IL-RSV 16	IL-SEC DOT16	IL-SEC B16	Reserved

Zone	ITTF - BA	ITTF - BB	SWIT-BC	SWIT-BD	SWIT-BE	SWIT-BF	SWIT-BG	SWIT-BH	SWIT-BI	SWIT-BJ	SWIT-BY	ITTF - BZ
Channel												
1	IESMA	RGN 2A	8CALL90D	7CALL50D	7MOB59D	7CALL70D	7MOB79D	7FTAC1D	7MTAC9D	7AG58D	7MOB59DE	SECURE 1
2	ILEAS	RGN 2B	8TAC91D	7TAC51D	7DATA69D	7TAC71D	7DATA89D	7FTAC2D	A7-US-01D	7AG60D	7MOB79DE	SECURE 2
3	MABAS	RGN 3A	8TAC92D	7TAC52D	7LAW61D	7TAC72D	7LAW81D	7FTAC3D	A7-US-02D	7AG67D	Reserved	SECURE 3
4	Pub Hlth	RGN 3B	8TAC93D	7TAC53D	7LAW62D	7TAC73D	7LAW82D	7GTAC4D	A7-US-03D	7AG68D	Reserved	SECURE 4
5	IPWMAN	RGN 4A	8TAC94D	7TAC54D	7FIRE63D	7TAC74D	7FIRE83D	7GTAC5D	7MTAC9	7AG78D	7FIRE83DE	SECURE 5
6	Incident1	RGN 4B	8CALL90	7TAC55D	7FIRE64D	7TAC75D	7FIRE84D	7LTAC6D	A7-US-01	7AG80D	7FIRE84DE	SECURE 6
7	Incident2	RGN 6A	8TAC91	7TAC56D	7MED65D	7TAC76D	7MED86D	7LTAC7D	A7-US-02	7AG85D	7MED86DE	SECURE 7
8	Incident3	RGN 6B	8TAC92	7GTAC57D	7MED66D	7GTAC77D	7MED87D	7LTAC8D	A7-US-03	7AG88D	7MED87DE	SECURE 8
9	Incident4	RGN 7A	8TAC93	7CALL50	7MOB59	7CALL70	7MOB79	7TAC1	7-US-01D	7AG58	7MOB59E	Reserved
10	Incident5	RGN 7B	8TAC94	7TAC51	7DATA69	7TAC71	7DATA89	7FTAC2	7-US-02D	7AG60	7MOB79E	Reserved
11	North A	RGN 8A	Reserved	7TAC52	7LAW61	7TAC72	7LAW81	7FTAC3	7-US-03D	7AG67	Reserved	Reserved
12	North B	RGN 8B	Reserved	7TAC53	7LAW62	7TAC73	7LAW82	7GTAC4	7-US-01	7AG68	Reserved	Reserved
13	Center A	RGN 9A	Reserved	7TAC54	7FIRE63	7TAC74	7FIRE83	7GTAC5	7-US-02	7AG78	7FIRE83E	SECEMA 1
14	Center B	RGN 9B	Reserved	7TAC55	7FIRE64	7TAC75	7FIRE84	7LTAC6	7-US-03	7AG80	7FIRE84E	SECEMA 2
15	South A	RGN 11A	Reserved	7TAC56	7MED65	7TAC76	7MED86	7LTAC7	Reserved	7AG85	7MED86E	SEC DOT 1
16	South B	RGN 11B	Reserved	7GTAC57	7MED66	7GTAC77	7MED87	7LTAC8	Reserved	7AG88	7MED87E	SEC DOT 2

Conventional Analog

Conventional P25 Digital

P25 Secure

IDPH STARCOM 21 Radio Template

Zone	IDPH TALKGROUPS		IEMA		ANSI NATIONAL STANDARD TEMPLATE					Analog Low Power			
	A	B	BA	BB	BC	BD	BE	BF	BG	BH	BI		
MODE 1	Pub Hlth	Pub Hlth	IESMA	RGN 2A	8CAL-90D	7 CAL 50D	7 MOB 59D	7 CAL 70D	7 MOB 79D	7F TAC1D	7MTAC9D		
2	EMS	EMS	ILEAS	RGN 2B	8TAC-91D	7 TAC 51D	7MOB59DA	7 TAC 71D	7MOB79DA	7F TAC2D	7NTAC 10D		
3	IMERT1	IMERT1	MABAS	RGN 3A	8TAC-92D	7 TAC 52D	7 LAW 61D	7 TAC 72D	7 LAW 81D	7F TAC3D	7NTAC 11D		
4	REDCROSS	REDCROSS	Pub Hlth	RGN 3B	8TAC-93D	7 TAC 53D	7 LAW 62D	7 TAC 73D	7 LAW 82D	7G TAC4D	7NTAC 12D		
5	PH RKFRD	EMS R1	IPVMMAN	RGN 4A	8TAC-94D	7 TAC 54D	7 FIRE 63D	7 TAC 74D	7 FIRE 83D	7G TAC5D	7MTAC9		
6	PH PEORIA	EMS R2	Incident1	RGN 4B	8CAL-90	7 TAC 55D	7 FIRE 64D	7 TAC 75D	7 FIRE 84D	7L TAC6D	7NTAC 10		
7	PH SPGFLD	EMS R3	Incident2	RGN 6A	8TAC-91	7 TAC 56D	7 MED 65D	7 TAC 76D	7 MED 86D	7L TAC7D	7NTAC 11		
8	PH EDWRS	EMS R4	Incident3	RGN 6B	8TAC-92	7 G TAC 57D	7 MED 66D	7 GTAC 77D	7 MED 87D	7L TAC8D	7NTAC 12		
9	PH MARION	EMS R5	Incident4	RGN 7A	8TAC-93	7 CAL 50	7 MOB 59	7 CAL 70	7 MOB 79	7F TAC1	BLANK		
10	PH CHMPGN	EMS R6	Incident5	RGN 7B	8TAC-94	7 TAC 51	7MOB59A	7 TAC 71	7MOB79A	7F TAC2	BLANK		
11	PH BLLWD	EMS R7	North A	RGN 8A	BLANK	7 TAC 52	7 LAW 61	7 TAC 72	7 LAW 81	7F TAC3	BLANK		
12	PH WCHCGO	EMS R8	North B	RGN 8B	BLANK	7 TAC 53	7 LAW 62	7 TAC 73	7 LAW 82	7G TAC4	BLANK		
13	PH CHCGO	EMS R9	Center A	RGN 9A	BLANK	7 TAC 54	7 FIRE 63	7 TAC 74	7 FIRE 83	7G TAC5	BLANK		
14	PUB HLTH 1	EMS R10	Center B	RGN 9B	BLANK	7 TAC 55	7 FIRE 64	7 TAC 75	7 FIRE 84	7L TAC6	BLANK		
15	PUB HLTH 2	EMS R11	South A	RGN 11A	BLANK	7 TAC 56	7 MED 65	7 TAC 76	7 MED 86	7L TAC7	BLANK		
16	PUB HLTH 3	PUB HLTH 4	South B	RGN 11B	BLANK	7 G TAC 57	7 MED 66	7 GTAC 77	7 MED 87	7L TAC8	BLANK		
	Emergency Disabled				Inter operability Template IEMA / ITTF ANSI National Standard Channels and Talk Groups Always in the Clear								
	IDPH Selectable Secure	IDPH ALWAYS Secure	IDPH Clear	Interop									
EMERGENCY Button Disabled on all Channels													

Attachment C: General STARCOM message Form Template

Use this text box to add your hospital logo

General STARCOM message Form Template

Directions: Use this form to capture any radio transmissions received via the STARCOM21 Radio System. Keep a copy for your records and deliver to designated hospital leadership or emergency department/management staff.

Message relayed over the radio	<hr/>		
Message will be relayed to:	Name/Position: _____ Telephone number: _____ Email address: _____	Message successfully relayed	Yes <input type="checkbox"/> No <input type="checkbox"/>
Date/Time	_____		
Message received by: (i.e. person filling out this form)	Name: _____ Signature: _____		
How to contact Chicago Department of Public Health (CDPH)	If there are any follow up questions, feel free to email the CDPH Public Health Emergency Operations Center at CDPHPHEOC@cityofchicago.org .		



Anyone Can Answer the STARCOM Radio



How to respond when your hospital is called out

- Press and hold mic button
- Wait a second or two before speaking
- State “[Name of hospital] copies, over”
- Use plain language when responding, no number or color codes
- Every radio is assigned a five- or seven-digit ID and can be identified

For clarification on messages, email
CDPH Public Health Emergency
Operations Center (PHEOC) at
CDPHPHEOC@CityofChicago.Org

Deliver vital radio communication information to:

Hospital's Emergency Contact Name

Contact number

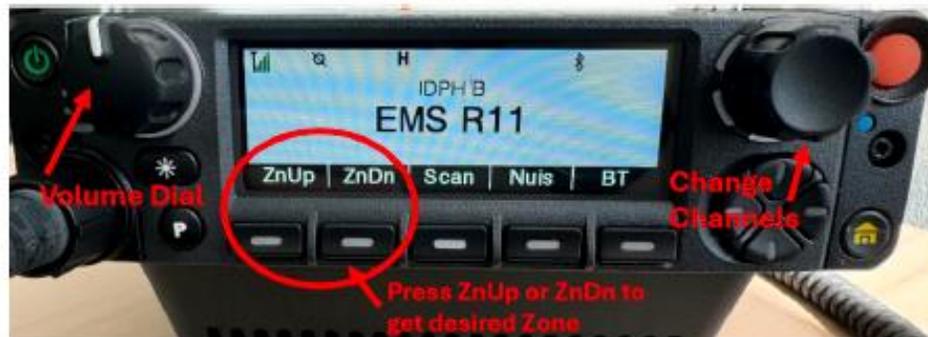
Hospital STARCOM Radio Setup

- STARCOM

- Newer radios – Zone IDPH B, Channel 13 (screen will read “IDPH B EMS R11”)
- Older radios – Zone B, Channel 15 (screen will read “B EMS R11”)

Note: If you see anything other than that, you may have to switch it back

- Newer radios



- Older radios



2) Home

1) Zone

3) Dial

1. Press the “Zone” Button to change zones and choose Zone B
2. Press the “Home” Button when on the right Zone
3. Use the dial to navigate to “B EMS R11”, on channel 15.

Any concerns with STARCOM, contact IHA at chscpr@team-iha.org



Click on this QR code to see a brief 5:31 minute video on STARCOM21 Radio Basics, or use your browser to navigate to:

<https://bit.ly/STARCOMBasics> if unable to scan the QR code