General Communications Rules of Programming and Usage

For

Conventional Interoperable Channels

Prepared for Illinois Public Safety Communications Professionals

By the

Statewide Interoperability Executive Committee (SIEC) Governance and Usage Working Groups

Final

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Record of Change

Change No.	Description	Change Date
0001	SIEC Usage and Governance working group created document	20140606
0002	Edited to include 700 & 800 MHz, refined the meaning and scope of channel requirements to include new and modified licenses, fixed grammatical & spelling errors; added channel programming template concepts; added place holders for 700 MHz air to ground & deployable trunked systems.	20150716

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Acronym List

Item/Acronym	Definition
CMS	Illinois Department of Central Management Services
COMC	Communications Coordinator
COML	Communications Unit Leader
COMT	Communications Technician
CSQ	Carrier Squelch Mode
CTCSS	Continuous Tone Coded Squelch System
DHS	Department of Homeland Security
EMS	Emergency Medical Services
EOC	Emergency Operations Center
ERP	Effective Radiated Power
ESDA	Emergency Services Disaster Agency
ESMARN	Emergency Services Mutual Aid Radio Network
FB	Fixed Base
FB2	Repeater
FB2T	Temporary Repeater
IFERN	Interagency Fire Emergency Radio Network
INCM	Incident Communications Center Manager
Inter-agency	Located or occurring between two or more agencies
Interop	Ability of a system to use the parts or equipment of another system
IREACH	Illinois Radio Emergency Assistance Channel
ISPERN	Illinois State Police Emergency Radio Network
ITECS	Illinois Transportable Emergency Communications System
ITTF	Illinois Terrorism Task Force
MABAS	Mutual Aid Box Alarm System

Item/Acronym	Definition
MCC	Mobile Communications Center
MERCI	Medical Emergency Response Communications of Illinois
MHz	Abbreviation for megahertz. 5 MHz = 5,000,000 Hz or 5,000 kHz.
MO	Mobile Operation
Mutual Aid	Personnel, equipment, or services provided to another jurisdiction
NGO	Non-Governmental Organizations
NIP	National Interoperabe Pool
NIMS	National Incident Management System
NPSPAC	National Public Safety Planning Advisory Committee
NPSTC	National Public Safety Telecommunications Council
POC	Point of Contact
RADO	Radio Operator
RF	Radio Frequency
SCIP	Statewide Communications Interoperability Plan
SEOC	State Emergency Operation Center
SIEC	Statewide Interoperability Executive Committee
SOP	Standard Operating Procedure
SOW	Site On Wheels (STARCOM21)
SWIC	Statewide Interoperability Coordinator
Talkgroup	Term ususally used with trunked radio systems. A talkgroup is a predefined list of radios/users assigned a unique ID which allows them to communicate with each other over the trunked radio system.
THSP	Technical Specialist
TICP	Tactical Interoperable Communications Plan
UASI	Urban Area Security Initiative
UAC	Unified Area Command vehicle (semi-tractor and trailer)
UCP	Unified Command Post (vehicle)
UHF	Ultra High Frequency – Range of 300 to 3,000 MHz For public safety LMR, usually refers to two bands. 380 to 460 MHz (low) and 460 to 512 MHz (high).
VHF	Very High Frequency – For public safety LMR, usually refers to VHF High Band with a range of 136 to 164 MHz VHF - Low Band has a frequency range below 100 MHz

General Communications Rules of Use

Purpose

The State of Illinois has created the Statewide Interoperability Executive Committee (SIEC) through legislation to improve public safety radio interoperability in the State of Illinois by managing public safety radio spectrum that has been allocated to public safety agencies within the State of Illinois. More info can be found here http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=347&ChapterID=5

The purpose of the document is to provide general information about the State of Illinois Public Safety Interoperable channels. **These are generally acceptable rules that apply to new, or applications being modified. If your situation needs something outside these guidelines, they will be reviewed on a case-by-case basis. If you are currently operating legally outside of these guidelines no action is needed. If interference is being caused to other legally licensed entities, an examination of usage, licensing, etc. may be conducted with recommendations being offered for consideration.**

NIMS/ICS/Plain Language/Unit Identification

- National Incident Management System – Use of an Incident Command System compliant with the National Incident Management System is recommended for use of any regional interoperability resource, i.e. implementing a Communications Unit Leader position.
- It is the responsibility of the Incident Commander/designee to establish the tactical call-signs to be used for the incident. It is the responsibility of all users to refer to facilities and staff by the proper tactical call-signs.
- Plain language – All communications shall be in plain language. Radio codes, acronyms and abbreviations are to be avoided as they may cause confusion between agencies. The reason for a request for assistance or backup should be clearly stated.
- Unit Identification – Agency name followed by identifier or resource type (i.e., IEMA 12, Fire Marshal David Adam 1, Secretary of State Police – Car 3 John 40, etc.).

Calling Another Unit

A user should call another user using the – "called unit **from** calling unit" format (also known as the "hey you –it's me" format) using unit identifiers
"Illinois State Police Car 2-5 **from** IEMA 3"
Followed by: "IEMA 3 **from** Illinois State Police Car 2-5, go ahead"

Important

- **NOTE**: These are generally acceptable rules. If your situation needs something outside these guidelines they will be reviewed on a case-by-case basis.
- **NOTE:** State level interoperable channels (ISPERN, IFERN, POINT to POINT, IREACH, ESMARN, and MABAS fire-ground channels) are used on a daily basis for operations. Using these channels could affect ongoing operations in a nearby community. Please clarify/assess the need for the resource as an interoperable resource and be sensitive to how the state interoperable resources are used in a particular area.
- **NOTE:** Scanning across multiple channels is generally not advised when using interoperable communications.

- **NOTE:** Encryption shall not be used at any time on any simplex, State or National interoperable channel, including ISPERN, IREACH, IFERN, MERCI or ESMARN.
- **NOTE:** The use of digital voice/data transmission is prohibited on State and National level interoperable channels other than the identified 700MHz interoperability channels.
- **NOTE:** VHF Low Band Non-Federal National Interoperability Channels, VHF Low Band Public Safety Mutual Aid and Common Channels utilize a WIDE analog emissions of 25KHz 20K2F3E
- **NOTE:** Non-Federal VHF National Interoperability Channels, VHF High Band, VHF Public Safety Mutual Aid and Common Channels utilize a NARROW analog emission of 12.5KHz 11K2F3E
- **NOTE:** 700 MHz Nationwide Interoperability Channels operate P25 FDMA digital utilizing NAC $293
- **NOTE:** Non-Federal 800 MHz National Interoperable Channels operate analog 16 KHz, with 4k deviation.

If you have questions please email the Statewide Interoperability Coordinator (SWIC) at ema.scip@illinois.gov

State Interoperable Radio Channels Rules of Use

ISPERN Illinois State Police Emergency Radio Network

Channel Name	Analog / Digital	Wide / Narrow	Subscriber RX and Tone	Subscriber TX and Tone	Primary Use	Agencies Supported
ISPERN (NIP VLAW31)*	A	N	155.47500 CSQ/D156**	155.47500 D156	State and Local Interop	Law Enforcement

***** indicates the channel has the same frequency as the non-federal Nation Interoperable Pool (NIP) channel but with an Illinois specific PL tone instead of the NIP PL Code of 156.7

****CTCSS Tones** – Default operation should be carrier squelch receive (CSQ), CTCSS Transmit. If the user can enable/disable without programming the radio, the indicated CTCSS tone also could be programmed for receive, and the user instructed how and when to enable/disable.

- ISPERN equipped radios must be operated only by law enforcement personnel.
- Routine communications on ISPERN is not permitted.
- Power output must not exceed 132 watts effective radiated power (ERP) for a mobile or base.
- Provides personnel in police mobile units with an inter-agency communication capability for police activity of an emergency nature within the State of Illinois.
- Operates on a radio frequency assigned to the Illinois State Police by the Federal Communications Commission.
- Is under the control of the Director of the Illinois State Police.
- To accomplish the objectives of ISPERN, specific criteria for allowable communications have been established. The following eight types of communications are listed in priority ranking:
    - Emergency
    - Disaster
    - Pursuits
    - Criminal/traffic offense or missing persons
    - Hit alerts
    - Mobile-to-mobile coordination
    - Itinerant
    - Testing
- Mobile Command Post Eligibility Requirements. The ISPERN frequency may only be installed in Mobile Command Posts (Emergency Communications Vans) with the prior approval of the ISPERN Governing Board, and by meeting the following guidelines:
  ISPERN is a law enforcement frequency; therefore, use of the ISPERN frequency in a Communications Van/Mobile Command Post must be under the control of a police agency.
    - Antenna height and effective radiated power (ERP) must be limited to that necessary to communicate with vehicle installed radios in the area of the emergency and not exceed 132 watts ERP. Care must be taken to prevent interference with ISPERN traffic in adjacent areas.
    - The local ISPERN Control Point will remain the network control station and shall coordinate traffic on this frequency to minimize interference. The Communications Van/Mobile Command Post shall notify the ISPERN Control Point when a drill begins and

request that they broadcast a dispatch on ISPERN announcing the drill. When a drill is concluded, the Control Point shall be notified and a dispatch made advising the conclusion of the drill.

- ISPERN and FCC rules and regulations shall be followed.
- The use of ISPERN by the Communications Van/Mobile Command Post for test or drills shall not interfere with legitimate emergency traffic. Drill traffic shall cease until such emergency traffic clears.
- Disaster drill traffic shall not include false or misleading messages, but will consist primarily of inter-agency coordination of mobile units.

IREACH Illinois Radio Emergency Assistance Channel

Channel Name	Analog / Digital	Wide / Narrow	Subscriber RX and Tone	Subscriber TX and Tone	Primary Use	Agencies Supported
IREACH	A	N	155.05500 CSQ/D156*	155.05500 D156	Inter-agency	All

***CTCSS Tones** – Default operation should be carrier squelch receive (CSQ), CTCSS Transmit. If the user can enable/disable without programming the radio, the indicated CTCSS tone also could be programmed for receive, and the user instructed how and when to enable/disable.

- Power output must not exceed 100 watts effective radiated power (ERP) for a mobile unit 50 watts is preferred to limit interference and allow reuse of the channel.
- New or modified fixed base operations should not exceed 100 watts effective radiated power (ERP) and the antenna height must not exceed 100 feet to the antenna tip.
- Since this has been designated for air to ground use with medical helicopters, air assets power output must not exceed 50 watts effective radiated power (ERP) due to their operational height.

Used for interdisciplinary coordination.

The purpose of IREACH is to allow any public safety employee to talk to any other public safety employee via radio provided the radio traffic relates to their official duties and the protection of life and/or property. For example, to permit a fire fighter to have direct radio contact with an emergency medical technician in an ambulance or to enable a police officer to talk to an EMA/ESDA official at a disaster site.

OPERATING GUIDELINES
The definition of acceptable IREACH traffic is deliberately broad. IREACH may be used to coordinate official public safety activities involving two or more public safety agencies. Official activities are defined as those serving to provide for the protection of life and/or property.

Licensed base stations will be allowed to operate on IREACH to foster coordination and communications between public safety units. A base station may initiate a dispatch if it is of significant interest to two or more disciplines.

Messages that qualify for ISPERN should be forwarded to the appropriate ISPERN control point for broadcast. If the message also has significant value to another discipline, such as Fire, EMS, EMA/ESDA, Highway Maintenance, or Conservation/Forestry, it can be broadcast on IREACH.

The base station call sign shall be broadcast at the end of each series of transmissions as an indication that the agency has concluded its use of the channel momentarily and is ready to accept traffic. Automatic station identifiers are specifically prohibited.
IREACH shall not be used by a single agency for field operations or as an intra-agency car-to-car channel. Paging and other forms of selective signaling will not be allowed on IREACH.

Manual http://www.illinois.gov/iema/LocalEMA/Documents/SCIP/IREACH_Manual.pdf

MABAS Mutual Aid Box Alarm System (Fire Tactical Operations Channels)

Channel Name	Analog / Digital	Wide / Narrow	Subscriber RX and Tone	Subscriber TX and Tone	Primary Use	Agencies Supported
IFERN (NIP VFIRE22)*	A	N	154.26500 CSQ/210.7**	154.26500 210.7	Fire Dispatch	Fire
IFERN 2 (NIP VFIRE26)*	A	N	154.30250 CSQ/67.0**	154.30250 67.0	Fire Dispatch and Staging	Fire
FGND RED	A	N	153.83000 CSQ/69.3**	153.83000 69.3	Fire Ground	Fire
FGND WHT (NIP VFIRE21)*	A	N	154.28000 CSQ/74.4**	154.28000 74.4	Fire Ground	Fire
FGND BLU (NIP VFIRE23)*	A	N	154.29500 CSQ/85.4**	154.29500 85.4	Fire Ground	Fire
FGND GLD	A	N	153.83750 CSQ/91.5**	153.83750 91.5	Fire Ground	Fire
FGND BLK (NIP VFIRE24)*	A	N	154.27250 CSQ/94.8**	154.27250 94.8	Fire Ground	Fire
FGND GRY (NIP VFIRE25)*	A	N	154.28750 CSQ/136.5**	154.28750 136.5	Fire Ground	Fire
MERCI 160 (NIP SAR NFM)*	A	N	155.16000 Varies	155.16000 Varies	Edwardsville	EMS
MERCI 220	A	N	155.22000 Varies	155.22000 Varies	Dispatch	EMS
MERCI 280	A	N	155.28000 CSQ/D156**	155.28000 D156	Point to Point	EMS
MERCI 340 (NIP VMED28)*	A	N	155.34000 CSQ/ 210.7**	155.34000 210.7	Statewide	EMS
MERCI 400	A	N	155.40000 Varies	155.40000 Varies	NE Illinois	EMS

NOTE: * indicates the channel has the same frequency as the non-federal Nation Interoperable Pool (NIP) channel but with an Illinois specific PL tone instead of the NIP PL Code of 156.7

**CTCSS Tones – Default operation should be carrier squelch receive (CSQ), CTCSS Transmit. If the user can enable/disable without programming the radio, the indicated CTCSS tone also could be programmed for receive, and the user instructed how and when to enable/disable.

Located at: http://www.mabas-il.org/MABASDispatchers/Pages/default.aspx

Definitions

IFERN – MABAS mutual aid dispatch and response frequency (base/mobile). Fixed base (FB) antenna tip 100 feet, power output must not exceed 100 watts effective radiated power (ERP). For Mobile 50 watts ERP preferred to limit interference and allow reuse of this channel.

IFERN2 – Alternate base/mobile mutual aid dispatch frequency. Fixed base (FB) antenna tip 100 feet, power output must not exceed 100 watts effective radiated power (ERP). For Mobile 50 watts ERP preferred to limit interference and allow reuse of this channel.

Fireground – Low power tactical frequencies not exceeding 10 watts effective radiated power used for on-scene communications between the Incident Commander and units working the incident.(RED, WHT, BLU, GOLD, BLK, GRY) fixed base (FB) operations are not supported by MABAS or the SIEC. **MERCI** – VHF ambulance to hospital frequencies. (155.280, 155.340 & 155.400 MHz)

Purpose:
To provide an operational guideline for member fire departments and their personnel for establishing an effective communications component for the Incident Action Plan at both routine and major emergency incidents.

Background:
The MABAS organization has grown significantly over the past few years in size, geographical service area and responsibility. The complex nature of the various incidents that member fire departments respond to has mandated the use of additional mutual aid dispatch, coordination and tactical operations radio channels to effectively manage these incidents. As a result, the MABAS Communications Committee has developed this recommended practice to assist local Incident Commanders with the task of implementing a communications plan at all emergency incidents and training evolutions.

Guideline:
The following guideline may be used by a fire service Incident Commander to develop the communications component of an Incident Action Plan.

Please consider that it is extremely difficult for a single individual to effectively monitor more than 1 or 2 radio frequencies during an emergency incident. As the communications plan becomes more complex, the Incident Commander must rely on aides to assist with communications management at the Command Post.

Occasionally, a jurisdiction may respond to multiple simultaneous incidents, or neighboring jurisdictions may experience simultaneous emergencies. Use of a single fireground channel for both incidents may be counterproductive and cause unnecessary harmful interference. Incident Commanders at subsequent incidents should consider adjusting their communications plan and assign a different primary fireground channel to avoid operational difficulties.

More continued on the next page

The recommended frequency use matrix on the following page can be used as a quick reference sheet for the Incident Commander or other communications personnel within the Command Post.

	Routine Incidents	Box-Alarms	Major Alarms	Mass Casualt	Fire & MCI	Tech Rescue	Haz-Mat	Water Rescue	Major Disaste
IC to Local Dispatcher	Dispatch	IFERN	IFERN	IFERN	IFERN	IFERN	IFERN	IFERN	IFERN
IC to MABAS Dispatcher		IFERN	IFERN	IFERN	IFERN	IFERN	IFERN	IFERN	IFERN
Staging		IFERN	IFERN	IFERN	IFERN	IFERN	IFERN	IFERN	IFERN
Scene/First Due	RED	RED	RED	RED	RED	RED	RED	RED	RED
Interior/Fire Companies	RED	RED	RED		RED				RED
Operations Officer	RED	RED	RED	RED	RED	RED			RED
Safety Officer	RED	RED	RED	RED	RED	RED	RED	RED	RED
RIT Team(s)	RED	RED	RED		RED				RED
Accountability	RED	RED	RED	RED	RED	RED	RED	RED	RED
Water Supply	RED/BLUE	BLUE	BLUE		BLACK	BLUE	BLUE		BLACK
Aerial Operations	RED/BLUE	BLUE	BLUE		BLACK	BLUE	BLUE		BLACK
Logistics		WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	GRAY
Public Information Officer		WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	GRAY
Liaison Officer(s)		WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	GRAY
Support Functions		WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	GRAY
Extrication & Manpower				RED					RED
Triage Sector				BLUE	BLUE				BLUE
Treatment Sector				BLUE	BLUE				BLUE
Transport to Ambulances				IFERN	IFERN				IFERN
Transport to Med Control				MERCI	MERCI				MERCI
Helicopter Landing Zone	IREACH	IREACH	IREACH	IREACH	IREACH	IREACH	IREACH	IREACH	IREACH
SRT Entry Teams						GOLD			GOLD
Haz-Mat Officer							RED		
Haz-Mat Resource							BLACK		
Haz-Mat Entry/Back- up							BLACK		
Divemaster/Dive								BLUE	
Boat Operations								BLUE	
Base Camp Operations									IFERN2
Fire Operations									RED
SRT Operations									WHITE
EMS Operations									BLUE
Interdisciplinary	IREACH	IREACH	IREACH	IREACH	IREACH	IREACH	IREACH	IREACH	IREACH

ESMARN Emergency Services Mutual Aid Radio Network

Channel Name	Analog / Digital	Wide / Narrow	Subscriber RX and Tone	Subscriber TX and Tone	Primary Use	Agencies Supported
ESMARN	A	N	155.02500 CSQ/123.0*	155.02500 123.0	Emergency Management	EMA

***CTCSS Tones** – Default operation should be carrier squelch receive (CSQ), CTCSS Transmit. If the user can enable/disable without programming the radio, the indicated CTCSS tone also could be programmed for receive, and the user instructed how and when to enable/disable.

- New or modified fixed base (FB) antenna tip 100 feet, power output must not exceed 100 watts effective radiated power (ERP).
- Mobiles 50 watts ERP preferred to limit interference and allow reuse of this channel.

The Emergency Services Mutual Aid Radio Network (ESMARN) is utilized throughout the state as an emergency management mutual aid channel. ESMARN is widely used in Illinois at the local emergency management agency level, providing a communications path for dispatch and notification as well as interoperability.

In Illinois and its adjoining states, the frequency known as ESMARN is used for local events where mutual aid and/or event notification is required. The use of ESMARN at the local level is both mobile-to-mobile and base-to-mobile communications. ESMARN is used by many local departments for paging of emergency management personnel as well as local services such as police, fire, and medical services.

Point to Point

Channel Name	Analog / Digital	Wide / Narrow	Subscriber RX and Tone	Subscriber TX and Tone	Primary Use	Agencies Supported
Point to Point	A	N	155.37000 CSQ	155.37000 CSQ	Law Enforcement Dispatch to Dispatch	All Law Dispatch

Law Enforcement PSAP to PSAP Communications Link

- New or modified fixed base (FB) antenna must not exceed tip height of 100 feet, power output must not exceed 100 watts effective radiated power (ERP).

State and National Interoperable Pool (NIP) Radio Channels INDEX

State VHF - Low Band Inter-system Shared Channels

Channel Name	Analog / Digital	Wide / Narrow	Subscriber RX and Tone	Subscriber TX and Tone	Primary Use	Agencies Supported
IEMA 1	A	W	45.44000 CSQ	45.44000 CSQ	Emergency Management	EMA
IEMA 2	A	W	45.28000 CSQ	45.28000 CSQ	Emergency Management	EMA
IEMA 3	A	W	45.36000 CSQ	45.36000 CSQ	Emergency Management	EMA
IEMA 4	A	W	45.40000 CSQ	45.40000 CSQ	Emergency Management	EMA
LESERN	A	W	45.56000 CSQ	45.56000 CSQ	Emergency Management	EMA

National Interoperable VHF Low Inter-system Band Channels (Non-Federal)

Channel Name	Analog / Digit-al	Wide / Narrow	Subscriber RX and Tone	Subscriber TX and Tone	Primary Use	Agencies Supported
LLAW1	A	W	39.46000 CSQ/156.7	45.86000 156.7	Law	Multi Agency
LLAW1D	A	W	39.46000 CSQ/156.7	39.46000 156.7	Law	Multi Agency
LFIRE2	A	W	39.48000 CSQ/156.7	45.48000 156.7	Fire (NEW)	Multi Agency
LFIRE2D	A	W	39.48000 CSQ/156.7	39.48000 156.7	Fire (NEW)	Multi Agency
LLAW3	A	W	45.86000 CSQ/156.7	39.46000 156.7	Law	Multi Agency
LLAW3D	A	W	45.86000 CSQ/156.7	45.86000 156.7	Law	Multi Agency
LFIRE4	A	W	45.88000 CSQ/156.7	39.48800 156.7	Fire	Multi Agency
LFIRE4D	A	W	45.88000 CSQ/156.7	45.88000 156.7	Fire	Multi Agency

CTCSS Tones – Default operation should be carrier squelch receive (CSQ), CTCSS Transmit. If the user can enable/disable without programming the radio, the indicated CTCSS tone also could be programmed for receive, and the user instructed how and when to enable/disable.

State VHF High Band Inter-system Shared Channels

Channel Name	Analog / Digital	Wide / Narrow	Subscriber RX and Tone	Subscriber TX and Tone	Primary Use	Agencies Supported
ISPERN	A	N	155.47500 CSQ/D156*	155.47500 D156	State and Local Interop	Law Enforcement
ISP HF-4	A	N	155.46000 CSQ	155.46000 CSQ	LE Car-to-Car	All State Law Enforcement
All ISP Districts Main HF 2	A	N	Various VHF	Various VHF	Dispatch	IDNR Law Enforcement & others
IREACH	A	N	155.05500 CSQ/D156*	155.05500 D156	Inter-agency	All
IEMA VHF 1	A	N	155.92500 CSQ	155.92500 CSQ	IEMA Dispatch	EMA
ESMARN	A	N	155.02500 CSQ/123.0*	155.02500 123.0	Emergency Management	EMA
Point to Point	A	N	155.37000 CSQ	155.37000 CSQ	Law Enforcement Dispatch to Dispatch	All Law Dispatch
IFERN	A	N	154.26500 CSQ/210.7*	154.26500 210.7	Fire Dispatch	Fire
IFERN 2	A	N	154.30250 CSQ/67.0*	154.30250 67.0	Fire Dispatch and Staging	Fire
FGND RED	A	N	153.83000 CSQ/69.3*	153.83000 69.3	Fire Ground	Fire
FGND WHT	A	N	154.28000 CSQ/74.4*	154.28000 74.4	Fire Ground	Fire
FGND BLU	A	N	154.29500 CSQ/85.4*	154.29500 85.4	Fire Ground	Fire
FGND GLD	A	N	153.83750 CSQ/91.5*	153.83750 91.5	Fire Ground	Fire
FGND BLK	A	N	154.27250 CSQ/94.8*	154.27250 94.8	Fire Ground	Fire
FGND GRY	A	N	154.28750 CSQ/136.5*	154.28750 136.5	Fire Ground	Fire
MERCI 160	A	N	155.16000 Varies	155.16000 Varies	Edwardsville	EMS
MERCI 220	A	N	155.22000 Varies	155.22000 Varies	Dispatch	EMS
MERCI 280	A	N	155.28000 CSQ/D156*	155.28000 D156	Point to Point	EMS
MERCI 340 **	A	N	155.34000 CSQ/ 210.7*	155.34000 210.7	Statewide	EMS
MERCI 400	A	N	155.40000 Varies	155.40000 Varies	NE Illinois	EMS

*In some regions of the state a PL code is used on both RX and TX. If you are not sure leave RX as CSQ

**155.3400 has a PL of 210.7 for statewide mutual aid use. In addition, each receiving hospital has unique CTCSS tone for communications

***CTCSS Tones** – Default operation should be carrier squelch receive (CSQ), CTCSS Transmit. If the user can enable/disable without programming the radio, the indicated CTCSS tone also could be programmed for receive, and the user instructed how and when to enable/disable.

National Interoperable VHF High Band Channels **(Non-Federal)**

Channel Name	Analog / Digit-al	Wide / Narrow	Subscriber RX and Tone	Subscriber TX and Tone	Primary Use	Agencies Supported
VCALL10	A	N	155.75250 CSQ/156.7	155.75250 156.7	Simplex Calling	Multi Agency
VTAC11*	A	N	151.13750 CSQ/156.7	151.13750 156.7	Simplex	Multi Agency
VTAC12*	A	N	154.45250 CSQ/156.7	154.45250 156.7	Simplex	Multi Agency
VTAC13*	A	N	158.73750 CSQ/156.7	158.73750 156.7	Simplex	Multi Agency
VTAC14*	A	N	159.47250 CSQ/156.7	159.47250 156.7	Simplex (SAR Interop)	Multi Agency
VFIRE21	A	N	154.28000 CSQ/156.7	154.28000 156.7	Fire Ground	Fire
VFIRE22	A	N	154.26500 CSQ/156.7	154.26500 156.7	Fire Ground	Fire
VFIRE23	A	N	154.29500 CSQ/156.7	154.29500 156.7	Fire Ground	Fire
VFIRE24	A	N	154.27250 CSQ/156.7	154.27250 156.7	Fire Ground	Fire
VFIRE25	A	N	154.28750 CSQ/156.7	154.28750 156.7	Fire Ground	Fire
VFIRE26	A	N	154.30250 CSQ/156.7	154.30250 156.7	Fire Ground	Fire
VMED28	A	N	155.34000 CSQ/156.7	155.34000 156.7	Interoperability	EMS
VMED29	A	N	155.34750 CSQ/156.7	155.34750 156.7	Interoperability	EMS
VLAW31	A	N	155.47500 CSQ/156.7	155.47500 156.7	Interoperability	Law
VLAW32**	A	N	155.48250 CSQ/156.7	155.48250 156.7	Interoperability	Law
VTAC33**	A	N	159.47250 CSQ/136.5	151.13750 136.5	Tactical Repeater	Multi Agency
VTAC34**	A	N	158.73750 CSQ/136.5	154.45250 136.5	Tactical Repeater	Multi Agency
VTAC35**	A	N	159.47250 CSQ/136.5	158.73750 136.5	Tactical Repeater	Multi Agency
VTAC36** ***	A	N	151.13750 CSQ/136.5	159.47250 136.5	Tactical Repeater	Multi Agency
VTAC37** ***	A	N	154.45250 CSQ/136.5	158.73750 136.5	Tactical Repeater	Multi Agency
VTAC38** ***	A	N	158.73750 CSQ/136.5	159.47250 136.5	Tactical Repeater	Multi Agency

* VTAC11-14 **PLEASE NOTE:** if using tactical repeater channels (VTAC33-38) the TX and RX are the same as the VTAC11-14 channels. Caution is to be used in planning interop comms in VHF using National Interoperable Channels (NIP)

** VTAC33-38 recommended for Deployable Tactical Repeater use only (FCC FB2T)

*** VTAC36-38 are preferred; VTAC 33-35 only use when necessary

VCALL/VTACs

- Rule of thumb programming 50 watts ERP for mobile operations. Designated emission is NARROW analog 12.5 KHz 11K3F3E.
- Fixed operation (FB) along with transportable operations (FBT) simplex will require an FCC license list FB and/or FBT station class to be identified.
- If licensing FB/FB2 operations, antenna height should be no more than 100 feet at 100 watts ERP.
- The SIEC does not support the pairing of these frequencies to create repeaters for fixed operations.
- The SIEC does recognize the need at times for a temporary operation in a repeated mode and supports VTAC36-38. If licensing FB2T operation for this, the antenna height should be no more than 50 feet at 50 watts ERP.
- Keep in mind, operating in a repeater configuration removes two frequencies available use in simple mode. This should only be utilized as a last resort.
- If implementing VTAC10-14 the calling channel (VCALL10) SHALL be installed. This installation should be monitored in a 24/7 dispatch center.

VFIRE22, 23, 21 & 25 are only availed for mobile (MO) operation with a maximum of 10 watts ERP in Illinois since these are part of the MABAS Fire Ground Suite.

VMED28 & 29 are available for base/mob. Operations and require a letter from the Illinois Department of Public Health to license. Antenna height should be no more than 100 feet at 100 watts ERP.

VLAW31 aka – ISPERN - VLAW31 CSQ 156.7 - ISPERN CSQ D156 note the difference

VLAW32 is only available for mobile (MO) operation with a maximum of 10 watts ERP

CTCSS Tones – Default operation should be carrier squelch receive (CSQ), CTCSS Transmit. If the user can enable/disable without programming the radio, the indicated CTCSS tone also could be programmed for receive, and the user instructed how and when to enable/disable.

State UHF Inter-system Shared Channels

Channel Name	Analog / Digital	Wide / Narrow	Subscriber RX and Tone	Subscriber TX and Tone	Primary Use	Agencies Supported
IDOT F4	A	N	453.70000 CSQ	458.70000 CSQ	Highway Maintenance	IDOT & Tollway
AMB TACT 1	A	N	458.02500 CSQ	458.02500 Varies	Transport	EMS
AMB TACT 2	A	N	458.07500 CSQ	458.07500 Varies	Transport	EMS
AMB TACT 3	A	N	458.12500 CSQ	458.12500 Varies	Transport	EMS
AMB TACT 4	A	N	458.17500 CSQ	458.17500 Varies	Transport	EMS
MED 1	A	N	463.00000 Varies	468.00000 Varies	Transport	EMS
MED 2	A	N	463.02500 Varies	468.02500 Varies	Transport	EMS
MED 3	A	N	463.05000 CSQ	468.05000 Varies	Transport	EMS
MED 4	A	N	463.07500 Varies	468.07500 Varies	Transport	EMS
MED 5	A	N	463.10000 Varies	468.10000 Varies	Transport	EMS
MED 6	A	N	463.12500 Varies	468.12500 Varies	Transport	EMS
MED 7	A	N	463.15000 Varies	468.15000 Varies	Transport	EMS
MED 8	A	N	463.17500 Varies	468.17500 Varies	Statewide Mutual Aid	EMS
MED 9	A	N	462.95000 Varies	467.95000 Varies	Transport	EMS
MED 10	A	N	462.97500 Varies	467.97500 Varies	Transport	EMS

Note: For MED Channels CTCSS varies across the state, but 210.7 is used for Statewide Communications during a disaster or mutual aid. UHF MED channels used per 47CFR 90.20(d)(65). In some regions of the state a PL code is used on both RX and TX. If you are not sure leave RX as CSQ

***CTCSS Tones** – Default operation should be carrier squelch receive (CSQ), CTCSS Transmit. If the user can enable/disable without programming the radio, the indicated CTCSS tone also could be programmed for receive, and the user instructed how and when to enable/disable.

National Interoperable UHF Channels (Non-Federal)

Channel Name	Analog / Digital	Wide / Narrow	Subscriber RX and Tone	Subscriber TX and Tone	Primary Use	Agencies Supported
UCALL40	A	N	453.21250 CSQ/156.7	458.21250 156.7	Inter-disciplinary Calling	Multi Agency
UCALL40D	A	N	453.21250 CSQ/156.7	453.21250 156.7	Inter-disciplinary Calling	Multi Agency
UTAC41	A	N	453.46250 CSQ/156.7	458.46250 156.7	Inter-disciplinary	Multi Agency
UTAC41D	A	N	453.46250 CSQ/156.7	453.46250 156.7	Inter-disciplinary	Multi Agency
UTAC42	A	N	453.71250 CSQ/156.7	458.71250 156.7	Inter-disciplinary	Multi Agency
UTAC42D	A	N	453.71250 CSQ/156.7	453.71250 156.7	Inter-disciplinary	Multi Agency
UTAC43	A	N	453.86250 CSQ/156.7	458.86250 156.7	Inter-disciplinary (SAR Interop)	Multi Agency
UTAC43D	A	N	453.86250 CSQ/156.7	453.86250 156.7	Inter-disciplinary	Multi Agency

CTCSS Tones – Default operation should be carrier squelch receive (CSQ), CTCSS Transmit. If the user can enable/disable without programming the radio, the indicated CTCSS tone also could be programmed for receive, and the user instructed how and when to enable/disable.

The designated NARROW emission is analog 12.5 KHz 11K2F3E.

SIEC UHF programming rule of thumb is 50 watts ERP for mobile operations.

Fixed operation (FB/FB2) along with transportable operations (FBT/FB2T) simplex or repeated will require an FCC license listing FB/FB2 and/or FBT/FB2T station class to be identified.

If licensing FB/FB2 operations, antenna height should be no more than 100 feet to tip of antenna and 100 watts ERP.

If implementing UTAC41-43D the calling channel (UCALL40) SHALL be installed. This installation should be monitored in a 24/7 dispatch center.

700 MHz Nationwide Interoperability Channels

700 MHz Nationwide Interoperability Channels			
Mode: P25 FDMA Common Air Interface NAC: $293 ($659_{10}$) Talk Group ID: $00001 ($1_{10}$) Manufacturer's ID: $00 ($0_{10}$)		Message ID: $0000000000000000000 ($0_{10}$) No encryption on calling channels: • Algorithm ID: $80 ($128_{10}$) • Key ID: $0000 ($0_{10}$)	
Primary Use	**Channel Name**	**Mobile RX (MHz)**	**Mobile TX (MHz)**
General Public Safety	7TAC51	769.14375	799.14375
General Public Safety	7TAC51D	769.14375	769.14375
Calling Channel*	7CALL50	769.24375	799.24375
Calling Channel*	7CALL50D	769.24375	769.24375
EMS	7MED65	769.39375	799.39375
EMS	7MED65D	769.39375	769.39375
EMS	7MED66	769.49375	799.49375
EMS	7MED66D	769.49375	769.49375
General Public Safety*	7TAC52	769.64375	799.64375
General Public Safety*	7TAC52D	769.64375	769.64375
General Public Safety*	7TAC55	769.74375	799.74375
General Public Safety*	7TAC55D	769.74375	769.74375
Fire	7FIRE63	769.89375	799.89375
Fire	7FIRE63D	769.89375	769.89375
Fire	7FIRE64	769.99375	799.99375
Fire	7FIRE64D	769.99375	769.99375
General Public Safety*	7TAC53	770.14375	800.14375
General Public Safety*	7TAC53D	770.14375	770.14375
General Public Safety*	7TAC56	770.24375	800.24375
General Public Safety*	7TAC56D	770.24375	770.24375
Law Enforcement	7LAW61	770.39375	800.39375
Law Enforcement	7LAW61D	770.39375	770.39375
Law Enforcement	7LAW62	770.49375	800.49375
Law Enforcement	7LAW62D	770.49375	770.49375
12.5KHz 8K10F1E, P25 digital utilizing NAC $293 Fixed or temporary fixed operations require FCC licensing. For direct / simplex operations, us RX frequency (base transmit) Refer to Regions 13 & 54 700MHz Plan for additional details and frequency listings. *Indicates channel is required to be programmed into 7/800MHz radios Channel names as listed in this table are required.			

700 MHz Nationwide Interoperability Channels			
Mode: P25 FDMA Common Air Interface NAC: \$293 (659_{10}) Talk Group ID: \$00001 (1_{10}) Manufacturer's ID: \$00 (0_{10})		Message ID: \$0000000000000000000 (0_{10}) No encryption on calling channels: • Algorithm ID: \$80 (128_{10}) • Key ID: \$0000 (0_{10})	
Primary Use	**Channel Name**	**Mobile RX (MHz)**	**Mobile TX (MHz)**
General Public Safety*	7TAC54	770.64375	800.64375
General Public Safety*	7TAC54D	770.64375	770.64375
Mobile Data	7DATA69	770.74375	800.74375
Mobile Data	7DATA69D	770.74375	770.74375
Mobile Repeater*	7MOB59	770.89375	800.89375
Mobile Repeater*	7MOB59D	770.89375	770.89375
Other Public Service	7GTAC57	770.99375	800.99375
Other Public Service	7GTAC57D	770.99375	770.99375
EMS	7MED86	773.00625	803.00625
EMS	7MED86D	773.00625	773.00625
General Public Safety*	7TAC71	773.10625	803.10625
General Public Safety*	7TAC71D	773.10625	773.10625
Calling Channel*	7CALL70	773.25625	803.25625
Calling Channel*	7CALL70D	773.25625	773.25625
EMS	7MED87	773.35625	803.35625
EMS	7MED87D	773.35625	773.35625
Fire	7FIRE83	773.50625	803.50625
Fire	7FIRE83D	773.50625	773.50625
General Public Safety*	7TAC72	773.60625	803.60625
General Public Safety*	7TAC72D	773.60625	773.60625
General Public Safety*	7TAC75	773.75625	803.75625
General Public Safety*	7TAC75D	773.75625	773.75625
Fire	7FIRE84	773.85625	803.85625
12.5KHz 8K10F1E, P25 digital utilizing NAC \$293 Fixed or temporary fixed operations require FCC licensing. For direct / simplex operations, us RX frequency (base transmit) Refer to Regions 13 & 54 700MHz Plan for additional details and frequency listings. *Indicates channel is required to be programmed into 7/800MHz P25 radios Channel names as listed in this table are required.			

700 MHz Nationwide Interoperability Channels			
Mode: P25 FDMA Common Air Interface NAC: \$293 (659_{10}) Talk Group ID: \$00001 (1_{10}) Manufacturer's ID: \$00 (0_{10})		Message ID: \$0000000000000000000 (0_{10}) No encryption on calling channels: • Algorithm ID: \$80 (128_{10}) • Key ID: \$0000 (0_{10})	
Primary Use	**Channel Name**	**Mobile RX (MHz)**	**Mobile TX (MHz)**
Law Enforcement	7LAW81	774.00625	804.00625
Law Enforcement	7LAW81D	774.00625	774.00625
General Public Safety*	7TAC73	774.10625	804.10625
General Public Safety*	7TAC73D	774.10625	774.10625
General Public Safety*	7TAC76	774.25625	804.25625
General Public Safety*	7TAC76D	774.25625	774.25625
Law Enforcement	7LAW82	774.35625	804.35625
Law Enforcement	7LAW82D	774.35625	774.35625
Mobile Repeater*	7MOB79	774.50625	804.50625
Mobile Repeater*	7MOB79D	774.50625	774.50625
General Public Safety*	7TAC74	774.60625	804.60625
General Public Safety*	7TAC74D	774.60625	774.60625
Mobile Data	7DATA89	774.75625	804.75625
Mobile Data	7DATA89D	774.75625	774.75625
Other Public Service*	7GTAC77	774.85625	804.85625
Other Public Service*	7GTAC77D	774.85625	774.85625
12.5KHz 8K10F1E, P25 digital utilizing NAC \$293 Fixed or temporary fixed operations require FCC licensing. For direct / simplex operations, us RX frequency (base transmit) Refer to Regions 13 & 54 700MHz Plan for additional details and frequency listings. *Indicates channel is required to be programmed into 7/800MHz P25 radios Channel names as listed in this table are required.			

Low Power 700 MHz Analog Nationwide Interoperability Channels

700 MHz Nationwide Interoperability Channels			
Primary Use	**Channel Name**	**Mobile RX (MHz)**	**Mobile TX (MHz)**
Fire	7FTAC1D	769.00625	769.00625
Fire	7FTAC1	769.00625	799.00625
Fire	7FTAC2D	774.93125	774.93125
Fire	7FTAC2	774.93125	804.93125
Fire	7FTAC3D	769.04375	769.04375
Fire	7FTAC3	769.04375	799.04375
General Public Safety	7GTAC4D	769.03125	769.03125
General Public Safety	7GTAC4	769.03125	799.03125
General Public Safety	7GTAC5D	774.95625	774.95625
General Public Safety	7GTAC5	774.95625	804.95625
Law	7LTAC6D	769.01875	769.01875
Law	7LTAC6	769.01875	799.01875
Law	7LTAC7D	774.94375	774.94375
Law	7LTAC7	774.94375	804.94375
Law	7LTAC8D	774.98125	774.98125
Law	7LTAC8	774.98125	804.98125
EMS	7MTAC9D	774.96875	774.96875
EMS	7MTAC9	774.96875	804.96875
General Public Safety	7NTAC10D	769.05625	769.05625
General Public Safety	7NTAC10	769.05625	799.05625
General Public Safety	7NTAC11D	769.06875	769.06875
General Public Safety	7NTAC11	769.06875	799.06875
General Public Safety	7NTAC12D	774.99375	774.99375
General Public Safety	7NTAC12	774.99375	804.99375

Notes:
Fixed or temporary fixed operations require FCC licensing.
For direct / simplex operations, us RX frequency (base transmit)
The Regions (13 & 54) as well as the SIEC are collaboratively managing the 700MHz low power. See the Region 13 or 54 plan for additional details and approvals

700 MHz Air to Ground

700 MHz Air to Ground			
Primary Use	**Channel Name**	**Mobile RX (MHz)**	**Mobile TX (MHz)**

700 MHz Deployable

700 Deployable Placeholder

800 MHz Nationwide Interoperability Channels (Non Federal)

800 MHz Nationwide Interoperability Channels (Non Federal)			
Primary Use	**Channel Name**	**Mobile RX (MHz)**	**Mobile TX (MHz)**
Calling	8CALL90	851.0125	806.0125
Calling – Direct	8CALL90D	851.0125	851.0125
Tactical	8TAC91	851.5125	806.5125
Tactical – Direct	8TAC91D	851.5125	851.5125
Tactical	8TAC92	852.0125	807.0125
Tactical – Direct	8TAC92D	852.0125	852.0125
Tactical	8TAC93	852.5125	807.5125
Tactical – Direct	8TAC93D	852.5125	852.5125
Tactical	8TAC94	853.0125	808.0125
Tactical – Direct	8TAC94D	853.0125	853.0125

Default operation should be carrier squelch receive, CTCSS 156.7(5A) transmit. If the user can enable/disable CTCSS without reprogramming the radio, the indicated CTCSS tone could also be programmed for receive, and the user instructed how and when to enable/disable.

Wideband FM 20K0F3E before and after re-banding.

A FCC license is not required for mobile operations as long as the agency a valid Public Safety FCC radio license holder.

16KHz 16K0F3E, 4k deviation is used for the 8TAC frequencies.

For direct / simplex operations, us RX frequency (base transmit)

Fixed or temporary fixed operations require FCC licensing.

For direct / simplex operations, us RX frequency (base transmit)

Refer to Regions 13 & 54 800MHz Plan for additional details and frequency listings.

*8TAC channels are required to be programmed into 800MHz

Channel names as listed in this table are required.

Programming Templates

Agencies that may need to work across a state border for mutual aid, should consider setting up a separate zone in the radio (if possible) with the National Interoperable Channel (NIP) names as opposed to relying on the Illinois name. (Police Example - Illinois = ISPERN; Wisconsin = VLAW31; National = VLAW31 // Fire Example - Illinois/Wisconsin/Indiana = MABAS BLUE; National = VFIRE23)

The Federal Communications Commission has designated multi-discipline interoperability channels in the UHF VHF (both low and high bands), UHF, 700 MHz and 800 MHz public safety radio bands. The term "multi-discipline" infers these channels are to be accessible for all public safety users to communicate to others within their discipline (police-to-police, fire-to-fire, etc.) as well as cross-discipline communications (police-to-fire, fire-to-local government, etc.) among all public safety users.

Below are examples of how these can be set up.

BASIC VHF INTEROPERABLE RADIO – EMA

CHANNEL	NAME	Mobile RX Freq	Mobile TX Freq	Tone RX	Tone TX
1	ESMARN	155.02500	155.02500	123.0*	123.0*
2					
3	IREACH	155.05500	155.05500	D156*	D156*
4					
5					
6					
7					
8					
9					
10	VCALL10	155.75250	155.75250	CSQ / 156.7**	156.7
11	VTAC11	151.13750	151.13750	CSQ / 156.7**	156.7
12	VTAC12	154.45250	154.45250	CSQ / 156.7**	156.7
13	VTAC13	158.73750	158.73750	CSQ / 156.7**	156.7
14	VTAC14	159.47250	159.47250	CSQ / 156.7**	156.7
15	NAT SAR	155.16000	155.16000	127.3	127.3
16					

NOTE: At no time will transmission of any form of digital signal be allowed on any state or national interoperability channel**.**

* New PL or DPL as of December 31. 2012

**NIFOG Recommendation: “Default operation should be carrier squelch receive, CTCSS 156.7 (5A) transmit. If the user can enable/disable CTCSS without reprogramming the radio, the indicated CTCSS tone should also be programmed for receive, and the user instructed how and when to enable/disable.”

BASIC VHF INTEROPERABLE RADIO – ILLINOIS FIRE ZONE

CHANNEL	NAME	Mobile RX Freq	Mobile TX Freq	Tone RX	Tone TX
1	IFERN	154.26500	154.26500	210.7	210.7
2	IFERN2	154.30250	154.30250	67.0	67.0
3	IREACH	155.05500	155.05500	D156*	D156*
4	FGND RED	153.83000	153.83000	69.3	69.3
5	FGND WHT	154.28000	154.28000	74.4	74.4
6	FGND BLU	154.29500	154.29500	85.4	85.4
7	FGND GLD	153.83750	153.83750	91.5	91.5
8	FGND BLK	154.27250	154.27250	94.8	94.8
9	FGND GRY	154.28750	154.28750	136.5	136.5
10	VCALL10	155.75250	155.75250	CSQ / 156.7**	156.7
11	VTAC11	151.13750	151.13750	CSQ / 156.7**	156.7
12	VTAC12	154.45250	154.45250	CSQ / 156.7**	156.7
13	VTAC13	158.73750	158.73750	CSQ / 156.7**	156.7
14	VTAC14	159.47250	159.47250	CSQ / 156.7**	156.7
15	NAT SAR	155.16000	155.16000	127.3	127.3
16	VMED29	155.34750	155.34750	CSQ / 156.7**	156.7

BASIC VHF INTEROPERABLE RADIO – NATIONAL FIRE ZONE

CHANNEL	NAME	Mobile RX Freq	Mobile TX Freq	Tone RX	Tone TX
1	IFERN	154.26500	154.26500	210.7	210.7
2	IFERN2	154.30250	154.30250	67.0	67.0
3	IREACH	155.05500	155.05500	D156*	D156*
4	VFIRE21	154.28000	154.28000	CSQ / 156.7**	156.7
5	VFIRE 22	154.26500	154.26500	CSQ / 156.7**	156.7
6	VFIRE23	154.29500	154.29500	CSQ / 156.7**	156.7
7	VFIRE24	154.27250	154.27250	CSQ / 156.7**	156.7
8	VFIRE25	154.28750	154.28750	CSQ / 156.7**	156.7
9	VFIRE26	154.30250	154.30250	CSQ / 156.7**	156.7
10	VCALL10	155.75250	155.75250	CSQ / 156.7**	156.7
11	VTAC11	151.13750	151.13750	CSQ / 156.7**	156.7
12	VTAC12	154.45250	154.45250	CSQ / 156.7**	156.7
13	VTAC13	158.73750	158.73750	CSQ / 156.7**	156.7
14	VTAC14	159.47250	159.47250	CSQ / 156.7**	156.7
15	NAT SAR	155.16000	155.16000	127.3	127.3
16	VMED29	155.34750	155.34750	CSQ / 156.7**	156.7

NOTE: At no time will transmission in any form of digital signal be allowed on any state or national interoperability channel**.** Both zones should be programmed. If space is limited in the radio, program only the Illinois zone

* New PL or DPL as of December 31. 2012

**NIFOG Recommendation: “Default operation should be carrier squelch receive, CTCSS 156.7 (5A) transmit. If the user can enable/disable CTCSS without reprogramming the radio, the indicated CTCSS tone should also be programmed for receive, and the user instructed how and when to enable/disable

BASIC VHF INTEROPERABLE RADIO - LAW

CHANNEL	NAME	Mobile RX Freq	Mobile TX Freq	Tone RX	Tone TX
1	ISPERN	155.47500	155.47500	CSQ	D156
2	IREACH	155.05500	155.05500	D156	D156
3	VLAW31	155.4750	155.4750	CSQ / 156.7**	156.7
4	VLAW32	155.4875	155.4875	CSQ / 156.7**	156.7
5	VTAC33	159.47250	151.13750	CSQ / 136.5**	136.5
6	VTAC34	158.73750	154.45250	CSQ / 136.5**	136.5
7	VTAC35	159.47250	158.73750	CSQ / 136.5**	136.5
8	VTAC36	151.13750	159.47250	CSQ / 136.5**	136.5
9	VTAC37	154.45250	158.73750	CSQ / 136.5**	136.5
10	VCALL10	155.75250	155.75250	CSQ / 156.7**	156.7
11	VTAC11	151.13750	151.13750	CSQ / 156.7**	156.7
12	VTAC12	154.45250	154.45250	CSQ / 156.7**	156.7
13	VTAC13	158.73750	158.73750	CSQ / 156.7**	156.7
14	VTAC14	159.47250	159.47250	CSQ / 156.7**	156.7
15	NAT SAR	155.16000	155.16000	127.3	127.3
16	VTAC38	158.73750	159.47250	CSQ / 136.5**	136.5

NOTE: At no time will transmission in any form of digital signal be allowed on any state or national interoperability channel**.**

**NIFOG Recommendation: “Default operation should be carrier squelch receive, CTCSS 156.7 (5A) transmit. If the user can enable/disable CTCSS without reprogramming the radio, the indicated CTCSS tone should also be programmed for receive, and the user instructed how and when to enable/disable.”

BASIC VHF INTEROPERABLE RADIO - EMS

CHANNEL	NAME	Mobile RX Freq	Mobile TX Freq	Tone RX	Tone TX
1	VMED28	155.34000	155.34000	CSQ / 156.7**	156.7
2	VMED29	155.34750	155.34750	CSQ / 156.7**	156.7
3	IREACH	155.05500	155.05500	D156*	D156*
4	MERCI340	155.34000	155.34000	Varies	Varies
5	MERCI400	155.40000	155.40000	Varies	Varies
6	MERCI280	155.28000	155.28000	Varies	Varies
7	MERCI220	155.22000	155.22000	Varies	Varies
8	MERCI60	155.16000	155.16000	Varies	Varies
9					
10	VCALL10	155.75250	155.75250	CSQ / 156.7**	156.7
11	VTAC11	151.13750	151.13750	CSQ / 156.7**	156.7
12	VTAC12	154.45250	154.45250	CSQ / 156.7**	156.7
13	VTAC13	158.73750	158.73750	CSQ / 156.7**	156.7
14	VTAC14	159.47250	159.47250	CSQ / 156.7**	156.7
15	NAT SAR	155.16000	155.16000	127.3	127.3
16	VMED29	155.34750	155.34750	CSQ / 156.7**	156.7

NOTE: At no time will transmission in any form of digital signal be allowed on any state or national interoperability channel**.**

* New PL or DPL as of December 31. 2012

**NIFOG Recommendation: “Default operation should be carrier squelch receive, CTCSS 156.7 (5A) transmit. If the user can enable/disable CTCSS without reprogramming the radio, the indicated CTCSS tone should also be programmed for receive, and the user instructed how and when to enable/disable.”

The State of Illinois, using federal homeland security grant monies, purchased 1,950 mobile radios, 180 portable radios, 201 hospital (MERCI) base stations, and 20 IREACH base stations which were distributed to local public health agencies, hospitals, local emergency management agencies, and law enforcement and fire departments in 2005 and 2006. Recipients of those VHF radios could exercise the option to add their local frequencies to the units, promoting the use of and familiarity with the instruments within the user communities through day-to-day use.

Common Name	Mobile Receive Frequency	Mobile Transmit Frequency	DCS / CTCSS
MERCI 160[1]	155.16000	155.16000	Varies
MERCI 220[2]	155.22000	155.22000	Varies
MERCI 280[3]	155.28000	155.28000	D156
MERCI 340[4]	155.34000	155.34000	210.7[4]
MERCI 400[5]	155.40000	155.40000	Varies
AMB TACT 1	458.02500	458.02500	Varies
AMB TACT 2	458.07500	458.07500	Varies
AMB TACT 3	458.12500	458.12500	Varies
AMB TACT 4	458.17500	458.17500	Varies
MED 1	463.00000	468.00000	Varies
MED 2	463.02500	468.02500	Varies
MED 3	463.05000	468.05000	Varies
MED 4	463.07500	468.07500	Varies
MED 5	463.10000	468.10000	Varies
MED 6	463.12500	468.12500	Varies
MED 7	463.15000	468.15000	Varies
MED 8	463.17500	468.17500	210.7
MED 9	463.95000	467.95000	Varies
MED 10	463.97500	467.97500	Varies

NOTE: At no time will transmission in any form of digital signal be allowed on any state or national interoperability channel.

[1] MERCI 160 use is limited to Edwardsville/Collinsville/Belleville area.
[2] MERCI 220 is designated as a dispatch channel.
[3] MERCI 280 is designated for hospital point to point and disaster-related communications.
[4] MERCI 340 CTCSS Code 210.7 Hz is used for statewide communications during disaster or mutual aid incidents.
[5] MERCI 400 use is limited to northeastern Illinois, generally north of North Avenue in the Chicago metro area.

BASIC UHF INTEROPERABLE RADIO

CHANNEL	NAME	Mobile RX Freq	Mobile TX Freq	Tone RX	Tone TX
1	UCALL40D	453.2125	453.2125	CSQ / 156.7**	156.7
2	UTAC41D	453.4625	453.4625	CSQ / 156.7**	156.7
3	UTAC42D	453.7125	453.7125	CSQ / 156.7**	156.7
4	UTAC43D	453.8625	453.8625	CSQ / 156.7**	156.7
5	UCALL40	453.2125	458.2125	CSQ / 156.7**	156.7
6	UTAC41	453.4625	458.4625	CSQ / 156.7**	156.7
7	UTAC42	453.7125	458.7125	CSQ / 156.7**	156.7
8	UTAC43	453.8625	458.8625	CSQ / 156.7**	156.7
9					
10					
11					
12					
13					
14					
15					
16					

NOTE: At no time will transmission in any form of digital signal be allowed on any state or national interoperability channel**.**

**NIFOG Recommendation: “Default operation should be carrier squelch receive, CTCSS 156.7 (5A) transmit. If the user can enable/disable CTCSS without reprogramming the radio, the indicated CTCSS tone should also be programmed for receive, and the user instructed how and when to enable/disable.”

BASIC 700 INTEROPERABLE RADIO

Note: the zone names ("Zone I, Zone II, Zone III, Zone IV, Zone V, and Zone VI") are examples. How they are numbered will be developed by the SIEC. Currently the 700 MHz template are known as zones STARCOM21 Interoperability Templates Zones BD through BI.

CHANNEL	NAME	Mobile RX Freq	Mobile TX Freq	Tone RX	Tone TX
Zone I					
1	7CAL50D	769.24375	769.24375	F7E	293
2	7TAC51D	769.14375	769.14375	F7E	293
3	7TAC52D	769.64375	769.64375	F7E	293
4	7TAC53D	770.14375	770.14375	F7E	293
5	7TAC54D	770.64375	770.64375	F7E	293
6	7TAC55D	769.74375	769.74375	F7E	293
7	7TAC56D	770.24375	770.24375	F7E	293
8	7GTAC57D	770.99375	770.99375	F7E	293
9	7CAL50	769.24375	799.24375	F7E	293
10	7TAC51	769.14375	799.14375	F7E	293
11	7TAC52	769.64375	799.64375	F7E	293
12	7TAC53	770.14375	800.14375	F7E	293
13	7TAC54	770.64375	800.64375	F7E	293
14	7TAC55	769.74375	799.74375	F7E	293
15	7TAC56	770.24375	800.24375	F7E	293
16	7GTAC57	770.99375	800.99375	F7E	293
Zone II					
1	7MOB59D	770.89375	770.89375	F7E	293
2	7MOB59D**A****	770.89375	770.89375	156.7	156.7
3	7LAW61D	770.39375	770.39375	F7E	293
4	7LAW62D	770.49375	770.49375	F7E	293
5	7FIRE63D	769.89375	769.89375	F7E	293
6	7FIRE64D	769.99375	769.99375	F7E	293
7	7MED65D	769.39375	769.39375	F7E	293
8	7MED66D	769.49375	769.49375	F7E	293
9	7MOB59	770.89375	800.89375	F7E	293
10	7MOB59**A****	770.89375	800.89375	156.7	156.7
11	7LAW61	770.39375	800.39375	F7E	293
12	7LAW62	770.49375	800.49375	F7E	293
13	7FIRE63	769.89375	799.89375	F7E	293
14	7FIRE64	769.99375	799.99375	F7E	293
15	7MED65	769.39375	799.39375	F7E	293
16	7MED66	769.49375	799.49375	F7E	293
Zone III					
1	7CAL70D	773.25625	773.25625	F7E	293
2	7TAC71D	773.10625	773.10625	F7E	293
3	7TAC72D	773.60625	773.60625	F7E	293

4	7TAC73D	774.10625	774.10625	F7E	293
5	7TAC74D	774.60625	774.60625	F7E	293
6	7TAC75D	773.75625	773.75625	F7E	293
7	7TAC76D	774.25625	774.25625	F7E	293
8	7GTAC77D	774.85625	774.85625	F7E	293
9	7CAL70	773.25625	803.25625	F7E	293
10	7TAC71	773.10625	803.10625	F7E	293
11	7TAC72	773.60625	803.60625	F7E	293
12	7TAC73	774.10625	804.10625	F7E	293
13	7TAC74	774.60625	804.60625	F7E	293
14	7TAC75	773.75625	803.75625	F7E	293
15	7TAC76	774.25625	804.25625	F7E	293
16	7GTAC77	774.85625	804.85625	F7E	293
Zone IV					
1	7MOB79D	774.50625	774.50625	F7E	293
2	7MOB79D**A****	774.50625	774.50625	156.7	156.7
3	7LAW81D	774.00625	774.00625	F7E	293
4	7LAW82D	774.35625	774.35625	F7E	293
5	7FIRE83D	773.50625	773.50625	F7E	293
6	7FIRE84D	773.85625	773.85625	F7E	293
7	7MED86D	773.00625	773.00625	F7E	293
8	7MED87D	773.35625	773.35625	F7E	293
9	7MOB79	774.50625	804.50625	F7E	293
10	7MOB79**A****	774.50625	804.50625	156.7	156.7
11	7LAW81	774.00625	804.00625	F7E	293
12	7LAW82	774.35625	804.35625	F7E	293
13	7FIRE83	773.50625	803.50625	F7E	293
14	7FIRE84	773.85625	803.85625	F7E	293
15	7MED86	773.00625	803.00625	F7E	293
16	7MED87	773.35625	803.35625	F7E	293
Zone V					
1	7FTAC1D	769.00625	769.00625	CSQ / 156.7*	156.7
2	7FTAC2D	774.93125	774.93125	CSQ / 156.7*	156.7
3	7FTAC3D	769.04375	769.04375	CSQ / 156.7*	156.7
4	7GTAC4D	769.03125	769.03125	CSQ / 156.7*	156.7
5	7GTAC5D	774.95625	774.95625	CSQ / 156.7*	156.7
6	7LTAC6D	769.01875	769.01875	CSQ / 156.7*	156.7
7	7LTAC7D	774.94375	774.94375	CSQ / 156.7*	156.7
8	7LTAC8D	774.98125	774.98125	CSQ / 156.7*	156.7
9	7FTAC1	769.00625	799.00625	CSQ / 156.7*	156.7
10	7FTAC2	774.93125	804.93125	CSQ / 156.7*	156.7
11	7FTAC3	769.04375	799.04375	CSQ / 156.7*	156.7
12	7GTAC4	769.03125	799.03125	CSQ / 156.7*	156.7
13	7GTAC5	774.95625	804.95625	CSQ / 156.7*	156.7
14	7LTAC6	769.01875	799.01875	CSQ / 156.7*	156.7
15	7LTAC7	774.94375	804.94375	CSQ / 156.7*	156.7

16	7LTAC8	774.98125	804.98125	CSQ / 156.7*	156.7
Zone VI					
1	7MTAC9D	774.96875	774.96875	CSQ / 156.7*	156.7
2	7NTAC10D	769.05625	769.05625	CSQ / 156.7*	156.7
3	7NTAC11D	769.06875	769.06875	CSQ / 156.7*	156.7
4	7NTAC12D	774.99375	774.99375	CSQ / 156.7*	156.7
5	7MTAC9	774.96875	804.96875	CSQ / 156.7*	156.7
6	7NTAC10	769.05625	799.05625	CSQ / 156.7*	156.7
7	7NTAC11	769.06875	799.06875	CSQ / 156.7*	156.7
8	7NTAC12	774.99375	804.99375	CSQ / 156.7*	156.7
9	Add Air To Ground				
10	Add Air To Ground				
11	Add Air To Ground				
12	Add Air To Ground				
13	Add Air To Ground				
14	Add Air To Ground				
15	Add Air To Ground				
16	Add Air To Ground				

*CTCSS Tones – Default operation should be carrier squelch receive (CSQ), CTCSS Transmit. If the user can enable/disable without programming the radio, the indicated CTCSS tone also could be programmed for receive, and the user instructed how and when to enable/disable.

** Analog Mode Operation - 7MOB59A, 7MOB59DA, 7MOB79A, and 7MOB79DA are the analog versions of the Mobile Repeater channel with a 156.7 PL Tone. This is specific to Illinois used for vehicular repeater operation.

BASIC 800 INTEROPERABLE RADIO

CHANNEL	NAME	Mobile RX Freq	Mobile TX Freq	Tone RX	Tone TX
Zone I					
1	8CALL90	851.0125	806.0125	CSQ / 156.7*	156.7
2	8CALL90D	851.0125	851.0125	CSQ / 156.7*	156.7
3	8TAC91	851.5125	806.5125	CSQ / 156.7*	156.7
4	8TAC91D	851.5125	851.5125	CSQ / 156.7*	156.7
5	8TAC92	852.0125	807.0125	CSQ / 156.7*	156.7
6	8TAC92D	852.0125	852.0125	CSQ / 156.7*	156.7
7	8TAC93	852.5125	807.5125	CSQ / 156.7*	156.7
8	8TAC93D	852.5125	852.5125	CSQ / 156.7*	156.7
9	8TAC94	853.0125	808.0125	CSQ / 156.7*	156.7
10	8TAC94D	853.0125	853.0125	CSQ / 156.7*	156.7

* Default operation should be carrier squelch receive, CTCSS 156.7(5A) transmit. If the user can enable/disable CTCSS without reprogramming the radio, the indicated CTCSS tone could also be programmed for receive, and the user instructed how and when to enable/disable.

Wideband FM 20K0F3E before and after re-banding.