



**COMMUNICATIONS GUIDELINE NUMBER 16-04**

**Base Station Implementation of Interoperability and Common  
Channels in New York State**

**Effective:** Immediately  
**Date issued:** June 22, 2016

**Valid:** Until revoked or superseded  
**Revision:** 0 (Initial Release)

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**SUMMARY:**

This document establishes a minimum level and standard configuration of programming for interoperability and common channels into base stations used by public safety in New York State.

**The minimum level of monitoring is the direct (simplex) configuration of the channel. The standard plan in New York will be for units to call in on the direct version of the calling channel.**

**DESCRIPTION:**

In order to facilitate interoperable communications and to ensure that public safety has the necessary common channels available throughout New York State for calling and assistance, this guideline contains the **minimum** channels that should be programmed into wide-area base stations and monitored so they are available to all public safety radio users when needed.

Counties and other public safety agencies are encouraged to support additional channels, such as tactical or regional mutual aid, on fixed infrastructure.

**JUSTIFICATION:**

In order to ensure public safety users have at least one common channel available to call for assistance or coordinate a response, agencies will implement those calling and common channels according to the document. The use of direct (simplex) configurations of the calling channels will permit implementation and use with a minimum amount of infrastructure and such parameters that ensure ease of operation and use.

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## LICENSING:

- In all cases, base stations **MUST** have a fixed point Federal Communications Commission (FCC) license for any of these channels. “License by rule” does not apply to base stations. <sup>1</sup>
- 700 MHz interoperability channel base stations require an approval letter from the NYS DHSES-OIEC before an application for an FCC license is made.<sup>2</sup>
- 800 MHz base stations require the approval of the controlling Regional Planning Committee (RPC) before an application for an FCC license is made.<sup>3</sup>
  - RPC plans have specific requirements and parameters that are required to be adhered to when constructing 851-854 MHz systems.
- Entities are encouraged to coordinate to ensure the best use of their respective interoperability sites, making the best use of available infrastructure. Therefore, licensing should allow for regional coverage across jurisdiction boundaries and sites should be utilized to cover maximum area, regardless of jurisdictional lines, with the agreement of the entities involved or DHSES. Consortiums should collaborate on planning and implementation of all interoperability channels.

## PERMITTED USES:

- Interoperable communications;
- Calling channel for units from another agency (e.g. out of county, etc.), including emergency calling. (This is not meant to be a substitute when normal shared channels are available).

## PROHIBITED USES:

- Dispatching a single agency;
- Substitution for an internal agency operational channel, except in the unusual circumstance of a radio system failure that renders life safety communications otherwise unavailable;
- Single agency tactical communications;
- Routine NCIC or DMV type checks;
- Temporary or permanent patching any other channel to a national interoperability **calling** channel;
  - This prohibition does not apply to patching for the purposes of bringing the interoperability channel to a dedicated console or trunked system talk group.
- Permanently patching any other channel to a national interoperability **tactical** channel;
  - This prohibition does not apply to temporary, incident based, patching.
  - This prohibition does not apply to patching for the purposes of bringing the interoperability channel to a dedicated console or trunked system talk group.
- Routine base station to base station communication;
- Permanent installation of VTAC33-38 repeaters at fixed sites. Consistent with NIFOG recommendations, **VTAC33-38 are permitted for deployable tactical repeaters only.**

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<sup>1</sup> FCC 00-348, para 90; 47 CFR 90.421(a)(3); 47 CFR 90.525(a); FCC 87-112, para 34.

<sup>2</sup> 47 CFR 90.525(b)

<sup>3</sup> 47 CFR 90.16

### **MONITORING AND ANSWERING CALLS:**

- Agencies implementing a calling and/or tactical channel(s) must monitor the direct configuration of the calling channel in each band.
- Agencies implementing base stations on any calling channel must provide 24 hour a day, 7 day a week monitoring of those calling channel(s). **The minimum level of monitoring is the direct (simplex) configuration of the channel. The standard plan in New York will be for units to call in on the direct version of the calling channel.**
- It is strongly recommended that agencies also monitor the repeater input channel (if the channel has a repeater input frequency).
- Calling channels must be implemented in such a way that the direct channel is monitored at all times (except when the base is in transmit mode) and the reception is prioritized. Reception on additional receivers, or channels scanned, must not prevent the reception of incoming transmissions on the direct calling channel.

### **REPEATER ACTIVATION:**

For agencies that deploy national interoperability calling or tactical channel repeaters, the following applies:

- The repeater function (calling or tactical) **shall remain disabled** unless in active interoperable use. Failure to do so causes harmful interference.
- Appropriate notifications must be made:
  - All agencies must make a verbal on-channel announcement at the time of activation.
  - All agencies activating repeaters on national interoperability channels must announce the activation of that/those repeater(s) utilizing the State of Connecticut email listserv. Specific sign-up details may be obtained by contacting OIEC.
- The repeater mode of operation must be disabled once the event or incident is concluded:
  - Agencies must make a verbal on-channel announcement that the channel use is being discontinued.
  - Deactivation notification of that/those repeater(s) utilizing the State of Connecticut email listserv.

### **UNIT CALL-SIGN IDENTIFICATION AND PLAIN LANGUAGE:**

- Users shall identify their agency when initiating transmissions on interoperability and common channels e.g. "Anytown Police K-9 to Empire County, requesting staging information").
- Users shall utilize plain language when operating on interoperability and common channels.
- Automatic Number Identification (ANI) is prohibited on these channels due to conflicting modes and protocols.

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## TECHNICAL PARAMETERS:

- The use of a radio programmed “**time out timer**” is mandatory, with base transmissions not permitted to exceed 120 seconds (2 minutes) each.
- The New York State standard is that calling channels will be implemented in their simplex (direct) mode of operation. Additional monitoring of the repeater input is strongly recommended. However, this implementation must not impair the ability of the station to monitor the direct channel for calling units.
- Agencies installing national interoperability calling channel base stations and/or repeaters must install at least one tactical channel base station (recommended frequency agile) in the same band(s) as the calling channel and with comparable coverage. This provides a channel for tactical communications.
- While implementing agencies must install at least one tactical channel base station, agencies may at their discretion install tactical channel repeaters on the UHF, 700 and 800 MHz bands. However, the implementation of either form of tactical channel must not impair the ability of the station to monitor the direct calling channel for calling units.
- Any repeaters installed on any national interoperability channel (calling or tactical), must implement the following repeater identification scheme:
  - While in repeat disable mode and no communications are otherwise occurring, no regular identification is transmitted
  - While in active use in direct mode, identification shall be compliant with FCC regulations
  - While in repeater active mode, identification shall be compliant with FCC regulations, including at a minimum, transmission of an automatic CW ID (Morse Code). This is necessary to identify repeaters on the air and provide the ability to locate and contact the licensee if the repeater remains in repeat mode when not in use.
- All repeaters shall have, at a minimum, over the air DTMF repeater control (enable/disable). The appropriate controlling codes will be provided to repeater station operators by OIEC, and will be so designed as to avoid accidental or malicious activations. This does not preclude the use of additional means of repeater control, such as wireline. The repeater mode for all interoperability channels (calling or tactical) shall remain disabled unless in active interoperable use AND appropriate notifications have been made. Failure to do so causes harmful interference
- It is suggested that users above “Line-A” who are experiencing problems obtaining FCC licenses on the VHF or UHF interoperability channels notify OIEC. A temporary work around may be the licensing of a base station at 5 watts ERP while a high power license is sought.<sup>4</sup>
- Encryption is not permitted on VHF, UHF and 800 MHz national interoperability channels.<sup>5</sup> It is also not permitted on the 700 MHz calling channels.
- Caution must be exercised when any patching (field, console or fixed) occurs. These are common channels and patching entities MUST confirm that other agencies have not created a similar patch that could create a loop.
- Entities sharing interoperability channel infrastructure must have procedures and training developed to ensure technically correct use of that shared infrastructure (e.g. repeater activations, patches, etc.)

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<sup>4</sup> Amending Annex to the Technical Annex to the Exchange of Notes of October 24, 1962 Between the Government of Canada and the Government of the United States Constituting an Agreement for Radio Frequency Coordination and Use of Radio Frequencies Above Thirty Megacycles per Second. Arrangement “A”, paragraph 4.

<sup>5</sup> FCC Report and Order in docket PS 13-209, Released April 25, 2016. Analog FM is required; therefore the use of encryption would be limited to legacy analog modes and therefore has been prohibited here.

**NOTE ALL FREQUENCIES BELOW ARE ARRANGED FOR BASE STATION PROGRAMMING AND MAY DIFFER FROM THAT OF MOBILES/PORTABLES**

**Minimum for All Implementing Agencies (Direct Calling Channels)**

<i>Channel name</i>	<i>BASE Receive Frequency</i>	<i>BASE Receive CTCSS</i>	<i>BASE Transmit Frequency</i>	<i>BASE Transmit CTCSS</i>	<i>Mode</i>
VCALL10	155.7525 MHz	156.7 Hz	155.7525 MHz	156.7 Hz	Analog Narrowband
UCALL40D	453.2125 MHz	156.7 Hz	453.2125 MHz	156.7 Hz	Analog Narrowband
8CALL90D	851.0125 MHz	156.7 Hz	851.0125 MHz	156.7 Hz	Analog 16K0F3E

**Additional Channel for Law Enforcement Agencies**

<i>Channel name</i>	<i>BASE Receive Frequency</i>	<i>BASE Receive CTCSS</i>	<i>BASE Transmit Frequency</i>	<i>BASE Transmit CTCSS</i>	<i>Mode</i>
NYLAW1 <sup>6</sup>	155.370 MHz	110.9 <sup>7</sup> Hz	155.370 MHz	110.9 Hz	Analog Narrowband

**Additional Channel for Fire Agencies**

<i>Channel name</i>	<i>BASE Receive Frequency</i>	<i>BASE Receive CTCSS</i>	<i>BASE Transmit Frequency</i>	<i>BASE Transmit CTCSS</i>	<i>Mode</i>
LFIRE4D	45.88 MHz	156.7 <sup>8</sup> Hz	45.88 MHz	156.7 Hz	Analog Wideband

**Additional Channel for Emergency Medical Service Agencies**

<i>Channel name</i>	<i>BASE Receive Frequency</i>	<i>BASE Receive CTCSS</i>	<i>BASE Transmit Frequency</i>	<i>BASE Transmit CTCSS</i>	<i>Mode</i>
NYMED715	155.715 MHz	156.7 Hz <sup>9</sup>	155.715 MHz	156.7 Hz	Analog Narrowband

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<sup>6</sup> Use is restricted to Law Enforcement Use Only. Non Law Enforcement Agencies shall not install NYLAW1 without the permission of NYS DHSES-OIEC. See NYLAW1 Guideline for more information.

<sup>7</sup> The use of a 110.9 Hz receive CTCSS is consistent with the New York State NYLAW1 guideline, however discretion is left to the implementing agency on whether to configure the base for 110.9 Hz receive CTCSS or carrier squelch. No other CTCSS shall be used.

<sup>8</sup> Carrier Squelch is recommended for backwards compatibility on LFIRE4D. However, if the base station is receiving unwanted interference, the use of 156.7 Hz CTCSS is permitted. See "New York State Interoperability Channel Naming: 45.88" for more information.

<sup>9</sup> Due to the large number of licenses on this channel, it is highly recommended a CTCSS be implemented on base station receive. Mobile/portables guidelines have and are being updated to reflect the same tone for transmit. It is recognized this may be an extended transition and implementing agencies may use base receive carrier squelch instead at their discretion.

**List of TAC Channels Available for Implementation**

<i>Channel name</i>	<i>BASE Receive Frequency</i>	<i>BASE Receive CTCSS</i>	<i>BASE Transmit Frequency</i>	<i>BASE Transmit CTCSS</i>	<i>Mode</i>
VTAC11	151.1375	156.7	151.1375	156.7	Analog Narrowband
VTAC12	154.4525	156.7	154.4525	156.7	Analog Narrowband
VTAC13	158.7375	156.7	158.7375	156.7	Analog Narrowband
VTAC14	159.4725	156.7	159.4725	156.7	Analog Narrowband
UTAC41	458.4625	156.7	453.4625	156.7	Analog Narrowband
UTAC41D	453.4625	156.7	453.4625	156.7	Analog Narrowband
UTAC42	458.7125	156.7	453.7125	156.7	Analog Narrowband
UTAC42D	453.7125	156.7	453.7125	156.7	Analog Narrowband
UTAC43	458.8625	156.7	453.8625	156.7	Analog Narrowband
UTAC43D	453.8625	156.7	453.8625	156.7	Analog Narrowband
700 MHz	See New York Statewide 700MHz Public Safety National Interoperability Channel Plan for details of county by county planning when choosing the appropriate TAC channels <sup>10</sup>				P-25 Digital
800 MHz	See local Regional Planning Committee (8, 30 or 55) plan for specific county by county planning and application process				Analog 16K0F3E

**NOTE ALL FREQUENCIES ABOVE ARE ARRANGED FOR BASE STATION PROGRAMMING AND MAY DIFFER FROM THAT OF MOBILES/PORTABLES**

**MISUSE OF CHANNELS:**

- **Concerns** regarding this document or misuse of interoperability and common channels should be reported to the New York State Division of Homeland Security and Emergency Services, Office of Interoperable and Emergency Communications by Email: [DHSES.OIEC@dhSES.ny.gov](mailto:DHSES.OIEC@dhSES.ny.gov) or Phone: 518-322-4911.
- **Issues affecting the immediate use of these channels or interference** should be reported to the FCC public safety support center at 202-418-1122.

<sup>10</sup> Available on the New York State DHSES OIEC webpage