Policy #: 911-005.8
Previous Policy(s) #: 911-005.8: TDMA Compliance, Authorized Subscriber Units and Accessories
Effective Date: March 1, 2018
Revised: February 11, 2020; February 10, 2021; May 10, 2023

DEDIR System Subscriber Unit Requirements

Purpose:
The purpose of this policy is to ensure compliance with State of Illinois STARCOM21 and DuPage Emergency Dispatch Interoperable Radio (DEDIR System) requirements for equipment and accessories on DEDIR SYSTEM for the purpose of interoperability for emergency communications.

Additional Authority:
50 ILCS 750 Emergency Telephone System Act
OEX-003B-89 Amending Section 40-20 of the DuPage County Code Pertaining to the Emergency Telephone System Board

Goal:
It is the goal of the Emergency Telephone System Board of DuPage County (DuPage ETSB) to provide a standardized System of interoperable communication on the DEDIR SYSTEM for emergency service interoperability and cost effective, efficient maintenance and programming of the subscriber units, consoles, and other approved accessories.

Scope:
This policy shall apply to all DEDIR System users, vendors, maintainers, or other authorized agents receiving approval to access DEDIR System talk groups.

I. Policy Statement

DuPage ETSB leases a portion of the Motorola Solutions, Inc. STARCOM21 network in Illinois as an integrated component of its emergency dispatch System. The System permits communication between telecommunicators and the first responder personnel they dispatch in response to calls placed to 9-1-1.

The System also permits personnel from public safety agencies throughout the County to communicate with each other during joint emergency response situations.

DuPage ETSB has authorized and overseen the purchase of replacement portable and mobile radios for the DEDIR System on STARCOM21. Those authorized radio brands and models are to be programmed for the DEDIR System STARCOM21 System or other radio channels and talk groups as recommended by the ETSB PAC and approved by the ETS Board.

It is DuPage ETSB's responsibility to provide access to STARCOM21 with an overall coverage at 12 dB throughout the county-wide System based on the intergovernmental agreements (IGAs) entered into with the participating agencies or their PSAP on behalf of their agencies. 12 dB coverage was affirmed during testing throughout the DuPage ETSB 9-1-1 System geographic area in ¼ miles increments with the original tower deployment and the subscriber/radio unit set up as provided by DuPage ETSB per the IGA.

Since that test, steps have been taken to add resiliency to the System to ensure 12 dB coverage in the event that a tower site was disabled. The ancillary result of this resiliency is that some, but not all of the DEDIR System, may experience coverage as high as 16 dB coverage.

Any member agency that wants to alter a portable radio or deploy an accessory that is not part of the standard package provided by the ETSB for the DEDIR System radios per the IGA must request review of that item to ensure that it does not require a change in the radio's code plug or diminish the efficiency of the radio (ie: certain microphones and earpieces that are available today require a change in the code plug to operate effectively on the DEDIR System).

Any agency that wants to alter a subscriber unit or portable must complete the Policy #911-005.8: Subscriber Unit Requirements Radio Modification Form (Appendix B) indicating that they acknowledge the information contained in this policy and that DuPage ETSB has met its obligation per the IGA.

II. Authorized Subscriber Units

DEDIR System members should work with PAC prior to the purchase of any equipment that is not on the approved equipment list (Appendix C). Radios purchased after December 2022 must meet the following minimum specifications and receive prior approval before operation on the DEDIR System will be allowed:

- TDMA capable and enabled
- P25 Phase 2 Compliant
- Must have AES256 Encryption capabilities if requesting encrypted talk groups
- Must be submitted to and approved by ETSB PAC and ETS Board for operation on the System

All costs that are incurred by the ETSB or its maintainer to design, program or maintain non-DuPage purchased ETSB Radios will be billed to the organization or agency which owns/operates the radio(s) at a rate determined per vendor contract.

All radios that will affiliate to a TDMA talk group must have TDMA enabled. For talk groups that are patched to a legacy frequency (VHF), TDMA will not be functional but should be available. From time to time, ETSB may add additional approved radios to those radios to Appendix C. All radios which operate on the DuPage DEDIR System will be required by December 31, 2023 to be AES256 encryption capable and will not have access to any other DEDIRS talk groups other than the main Fire Dispatch Channels (Fire West, Fire East, Fire North, Fire South, FDACDC1, and FDACDC2).

III. GPS:

APXNext radios are both LMR and LTE GPS capable. All other APX series radios are LMR GPS capable. All radios should have GPS enabled and be properly added to the Computer Aided Dispatch software list for effective unit status location and information consistency.

LMR and LTE GPS will be enabled in all ETSB DEDIR SYSTEM radios. GPS data will be entered into the Computer Aided Dispatch software (CAD LISTS), so accurate logging of the GPS signals may be utilized and properly documented. LTE GPS will be utilized in properly equipped radios.

Radios that are LTE capable use this feature to automatically hunt to LTE if an LMR signal is not available.

IV. Process to Add Equipment to the DEDIR System

A. Adding Subscriber Units:
If a DEDIR System agency determines that it would like to purchase additional subscriber/radio units, all additions to the DEDIR System must be submitted to the ETSB via the Policy Advisory Committee (PAC) to ensure Grade of Service is maintained and applicable/required features are enabled in the subscriber units and the units are compatible with the DEDIR System and its interoperability plan. Radios must meet the requirements listed in Section II of this policy.

B. Airtime:
All additions to the DEDIR System must be submitted to the ETSB via the Policy Advisory Committee (PAC) to determine whether airtime will be provided by ETSB.

The ETSB Airtime contract will only be adjusted on an annual basis to include airtime costs for radios that can be paid with 9-1-1 surcharge. ETSB can bill an agency for airtime under its contract for radios that do not qualify for 9-1-1 surcharge financial support.

The airtime contract term begins January 1 of each year. Requests for airtime must be made by August 1 of any year to allow sufficient time for processing of change orders and budgeting through County Procurement. Requests after August 1 will not be considered until the next budget cycle. Unless otherwise approved, airtime will be the responsibility of the member user procuring new radios.

C. WAVE Access
WAVE access must be approved by the STARCOM21 member, which is ETSB. On behalf of ETSB, PAC has been assigned the approval task for WAVE applications. The cost for WAVE access is an agency/user cost.

V. Accessories

See Policy #911-005.8 Appendix C for ETSB supported equipment and accessories.

The ETSB has authorized the replacement of certain radio and equipment as shown in Appendix C of this policy subject to state and federal statutes and guidelines for acceptable costs.

A list of authorized accessories will be maintained by DuPage ETSB and posted on the ETSB Zendesk Portal in the DEDIR System tab. No modifications shall be made to subscriber units without prior approval by the ETS Board via PAC recommendation to ensure capability and proper radio function.

The ETS Board authorizes the PAC to make changes/additions/deletions to Appendices without having to bring such changes to the ETS Board.

In order to be eligible for accessory replacement, an agency must complete this policy's forms:

1. Policy #911-005.8: Appendix A: Annual Training Form, one per agency with roster; and
2. Policy #911-005.8: Appendix B: Radio Modification Notification Form, one per user requested change.

VI. Modification Request and Notification

Any member agency that wants to alter a portable radio or deploy an accessory that is not part of the standard package provided by the ETSB for the DEDIR System radios per the IGA must request review to ensure that it does not require a change in the code plug or diminish the efficiency of the radio (ie: certain microphones and earpieces that are available today require a change in the code plug to operate effectively on DEDIR System).

Any agency or user that wants to alter a subscriber unit or portable must complete the Policy #911-005.8 forms indicating that they acknowledge the information contained in this policy and that DuPage ETSB has met its obligation per the IGA.

The standard package is listed in Appendix C. Additional approved accessories and items are listed as acceptable.

Any user utilizing a subscriber unit on the DEDIR System must complete a Policy #911-005.8: Subscriber Units and Accessory Policy Modification Notification form if altering the subscriber unit. This form is necessary to ensure that replacement accessories are compatible with the ETSB authorized radios. A list of the modifications, including part numbers, will be kept on file to assist the ETSB system manager in diagnosing any radio service tickets requests relating to the performance of the subscriber unit.

The completed form must have the approval signature of the agency head, or their designee, prior to submission to ETSB.

A form should be completed each time a modification is made.

The form must be submitted to DuPage ETSB via https://dupageetsb.zendesk.com prior to making any changes.

The ETSB system manager will review the accessory items listed on the modification form to ensure compatibility with the subscriber unit/portable. If there are no compatibility issues, the system manager will sign off on the form and return it to ETSB.

The 9-1-1 System Coordinator will sign off on the form and a copy will be returned to the agency head and the requesting user.

Any damage resulting from a failure to report a modification to the radio will be the cost of the agency. The deducible for radios purchased after December 2022 is $5,000.

Use of a non-package Holster does not require a modification form, so long as the radio can function properly.

Policy adopted: May 10, 2023

Greg Schwarze, Chairman

Appendix A

Policy #911-005.8: Annual Training Form

As the Chief/Director for my agency, I hereby acknowledge that the DEDIR System users under my command and/or authority have received and been trained on DuPage ETSB Policy #911-005.8: DEDIR System Subscriber Unit Requirements.

In addition, going forward, this agency will:

1. On an annual basis review and train on DuPage ETSB Policy #911-005.8: DEDIR System Subscriber Unit Requirements.

2. Provide a copy of this form annually when training of subscriber users has been completed, including a roster of users submitted to DuPage ETSB via https://dupageetsb.zendesk.com.

[ ] By checking this box, the below signed acknowledges the information in this policy regarding the requirements of DuPage ETSB to provide 12 dB coverage within the service area; and that said coverage is accomplished via a combination of LMR towers and LTE coverage (for applicable radios) and the set-up of the provided subscriber units per the IGA. I further acknowledge that knowing this information, the above agency has trained their user members utilizing a DuPage ETSB subscriber unit. Any radio that has been altered from authorized ETSB specifications shall be noted through use of the Policy #911-005.8: Subscriber Unit Requirements Radio Modification Form; this document will be provided for each radio that has been altered. Each document shall include the user's signature and the agency head's signature. Those users are indicated on the submitted roster to include the type of alteration (model number of replaced equipment) with the completed Policy #911-005.8: Subscriber Unit Requirements Radio Modification Form.

[ ] By checking this box, this agency and the individual users understand that DuPage ETSB is not responsible for any coverage loss experienced by the user who has modified the radio and further acknowledge that failure to provide modification information negates ETSB's responsibility to ensure, to the best of its ability, adequate radio coverage.

[ ] By checking this box, this agency understands that annual training must be on file in order to qualify for accessory modifications.

Acknowledged and agreed to this _____day of _____, 20____

Signature: _____

Printed Name and Title: _____

Agency: _____

Date Training was completed: _____

[ ] Subscriber Unit or PSAP Roster Attached (required)

Appendix B

Policy #911-005.8: Radio Modification Form

I hereby acknowledge I have received and been trained on DuPage ETSB Policy #911-005.8: DEDIR System Subscriber Unit Requirements. The undersigned acknowledges the information in this policy requires DuPage ETSB to provide 12 dB of coverage within the service area; and that said coverage is accomplished via a combination of towers and the set-up of the provided subscriber units per IGA.

I further indicate that knowing this information, my agency has trained me utilizing a DuPage ETSB subscriber and will be allowing individual members to choose to alter the subscriber unit. I further acknowledge that as a user of a provided DuPage ETSB subscriber unit,

[ ] (initial) I choose to alter the subscriber/radio unit listed below in the following manner:

Radio Type:	
ETSB Asset Tag#:	
Serial Number:	
Alias:	

Alteration or modification: (include item model number etc)

	Item	Part Number & Vendor Name
1		
2		

[ ] (initial) I agree to have this modification listed on the annual roster and to submit a new form if, at any point, I want to make further modifications to the subscriber unit.

[ ] (initial) I agree to pay for any damage that may occur to the radio as a result of my modification.

I understand that certain modifications made to this radio may reduce the efficiency of this radio and by making these modifications may cause my radio to operate below the standards set by Motorola and that was designed to operate on the DEDIR System. I further understand that all the conditions set forth in the DEDIR System policies have been implemented to ensure first responder safety and DEDIR System standardization for interoperability; and that I agree to hold DuPage ETSB harmless for any catastrophic failure, coverage loss experienced by this user as a result of the alteration or failure to report any malfunction of the subscriber unit.

Acknowledged and agreed to this _____day of _____, 20____

_____ _____

Requestor Agency Head or their Designee

_____ _____

Printed Name and Title Printed Name and Title

Agency: _____

Date Training was completed: _____

Appendix C

DEDIRS Approved Radios
All models must have AES Encryption (if Encrypted channels are requested) and TDMA
APX4000
APX6000
APXNext
APXNextXN
APX8000
APX8000XE
APX8500 mobile radios (Dual Head, Remote Head, Dash Mount)
APX7000 series radios
APX7500 mobiles radios

Outside agency radios not supported by DEDIRS (Naperville Harris radios, Kenwood radios)

The standard radio package shall consist of:

APXNext (Police)

	Description	Part Number
1	APXNext single band radio	H45TGT9PW8AN
2	APXNext Batteries	NNTN9216A
1	Charging port	Either single charger or multi-charger (agency choice)
1	Plastic Holster	PMLN7947A
1	Remote Speaker Mic	PMMN4145a
1	Whip Antenna or	QA08243AA
1	Stubby Antenna	AN0000296A01

APXNext XN (Fire)

	Description	Part Number
1	APXNext XN Dual band radio	H45TGU9PW8AN
2	APXNext XN Non-Incendiary Batteries	PMNN4812A
1	Charging port	Either single charger or multi-charger (agency choice)
1	Fire Holster	PMLN8328 (Boston Leather)
1	XN Remote Speaker Mic	PMMN4138A
1	Dual Band VHF Antenna	AN000417A01

Authorized Accessories
The following accessories are approved for use on ETSB DEDIR System radios. *ETSB Provided* refers to equipment provided by DuPage ETSB for DEDIR System members. Replacement will be for normal wear and tear not for willful destruction or careless use of equipment. All agencies accessing the DEDIR System by IGA are responsible for their own equipment.

a. Microphones
b. Batteries (as needed, not blanket replacements)
c. Chargers or charger cup replacements
d. Antennas (only Motorola approved antenna)

The Agencies will be responsible for:
e. Radio Holsters

Authorized Accessories

Item	Radio Model	Part Number	ETSB Provided	Date Approved
Earpiece Impres2 Wire	APXNext	PMLN6129A	No	
Earpiece Accessory Kit 2	APXNext	PMLN6127A	No	
Earpiece RX Only Clear	APXNext	PMLN8120A	No	
Earpiece Audio ACCY	APXNext	BDN6783B	No	
Earpiece CMFRT EAR	APXNext	RLN5312B	No	
Earpiece Impres2 Wire	APXNext	PLMN6130A	No	
HYBRID Leather holster	APXNext	PMLN7948A	No	
3" Replacement Swivel Belt	APXNext	PMLN5409A	No	
Remote Speaker Mic / Police	APXNext	PMMN4123A	Yes	
Whip Antenna / Police	APXNext	QA08243AA	Yes	
Stubby Antenna / Police	APXNext	AN0000296A01	Yes	
Plastic Police Holster	APXNext	PMLN7947A	Yes*	
Remote Speaker Mic/ 1802	APXNext XN	PMMN4138A	Yes	
Fire Holster	APXNext XN	PMLN8328 (Boston Leather)	Yes*	
Plastic Fire Holster	APXNext XN	PMLN8601A	No	
3-inch belt clip	APXNext XN	PMLN8603A	No	
2.5-inch belt clip	APXNext XN	PMLN8602A	No	
Dual band VHF antenna	APXNext XN	AN000417A01	Yes	
Antenna Kit	APX8500 mobile	AN000131A02	Yes	

*Initial deployment only

Chapter 42

Accessories

Not all accessories are FCC certified to operate with all radio models or band splits. See the radio price pages for a list of FCC certified accessories or contact your sales representative for accessory compatibility.

Accessories for use in Hazard Zone

Accessories that are compatible with the radio, and can be used in the Hazard Zone include:

Table 24: Adapter

Part Number	Description
PMKN4262_	GCAI to 10-pin Adapter **CAUTION:** Motorola Solutions has not tested the 10-pin Adapter with any non-Motorola, third-party accessories that may be used by customers with Motorola Solutions two-way radios. Therefore, Motorola Solutions cannot guarantee that using certain non-Motorola accessories with Motorola Solution radios will comply with FCC regulations, audio safety standards or other relevant regulations, safety and performance standards.

Table 25: Antenna

Part Number	Description
AN000417A01_	All Band Antenna

Table 26: Battery

Part Number	Description
PMNN4812_	IMPRES 2 Battery

Table 27: Carry Case

Part Number	Description
PMLN8328_	Leather Carry Case

Table 28: Carry Straps

Part Number	Description
AY000223A01_	Boston Leather Fireman's Radio Strap with button back holder
AY000229A01_	Boston Leather Fireman's Radio Strap with button back holder - XL
RLN6486_	Boston Leather Fireman's Radio Strap
RLN6487_	Boston Leather Fireman's Radio Strap - XL

Part Number	Description
RLN6488_	Boston Leather Anti-Sway Strap for Boston Leather Fireman's Radio Strap

Table 29: Remote Speaker Microphones

Part Number	Description
PMMN4138_	XVN500 Remote Speaker Microphone

Prohibited Hazard Zone Accessories

Accessories that are compatible with the radio, but cannot be used in the Hazard Zone include:

Table 30: Audio Accessories

Part Number	Description
PMLN6127_	IMPRES 2 Wire Surveillance Black
PMLN6129_	2 Wire with Trans Tube Black
PMLN6130_	2 Wire with Trans Tube Beige

Table 31: Remote Speaker Microphones

Part Number	Description
PMMN4106_	XE500 RSM (Green with Channel Knob)
PMMN4106BLK_	XE500 RSM (Black with Channel Knob)
PMMN4107_	XE500 RSM (Green without Channel Knob)
PMMN4107BLK_	XE500 RSM (Black without Channel Knob)
PMMN4132_	XVE500 Remote Speaker Microphone, High Impact Green with Knob
PMMN4132ABLK_	XVE500 Remote Speaker Microphone, Black with Knob
PMMN4137A_	XVE500 Remote Speaker Microphone, High Impact Green, No Channel Knob
PMMN4137ABLK_	XVE500 Remote Speaker Microphone, Black, No Channel Knob

Table 32: Chargers

Part Number	Description
NNTN9115_ (Base: PS000337A01, US Line cord: 3087791G01)	IMPRES 2 Multi-Unit Charger, 6-Disp, US/NA/CA/LA Plug, Acc-Charger
NNTN9199_ (NNTN9178_ and PS000040A01)	IMPRES 2 Single-Unit Charger
NNTN9212_	APX NEXT Pocket (Only for use with NNTN8844_)

Table 33: Cables

Part Number	Description
CB000262A01_	Micro USB Programming Cable
PMKN4012_	Portable Programming Cable

For more information about supported accessories, see http://www.motorolasolutions.com.