

**Project 25 Compliance Assessment Program**  
**SDOC – HARRIS – XL-400P**  
**December 2, 2021**

**SUBSCRIBER PRODUCT INFORMATION**

<b>Subscriber Info</b>	<b>Detail</b>
Model Name:	XL-400P
Tested Software Versions:	XLPR06, XLPR13
Hardware Capabilities/Options & Software Options:	SW Options: P25 Trunking, P25 Phase 2 TDMA, AES-256 Encryption, P25 Data (for Short Message/Status Update/Message Update interoperability tests only) Frequency Bands: VHF, UHF, 700 MHz, 800 MHz

**TEST REQUIREMENTS CAB IDENTIFICATION**

This product was tested according to the P25 CAP Test Requirements Compliance Assessment Bulletin (CAB) indicated by the checked box.

<b>check one</b>	<b>P25 CAP Test Requirement CAB</b>	<b>Details</b>
	<b>P25-CAB-CAI_TEST_REQ – July 2017</b>	Includes August 2016 P25 CAP Test Requirements; Adds TDMA performance and interoperability testing and trunked supplementary data testing
<b>X</b>	<b>P25-CAB-CAI_TEST_REQ - October 2018</b>	Includes all July 2017 P25 CAP Test Requirements; Adds minor updates to conventional interoperability testing due to TIA standard update

**SUMMARY TEST REPORT IDENTIFIER<sup>1</sup>**

Summary Test Report (STR) Identifier:	STR-HARRIS-SUBSCRIBERS
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**CONTACT INFORMATION**

<b>Vendor Info</b>	<b>Details</b>
Vendor Name:	L3Harris Technologies (Communication Systems segment, PSPC sector)
Vendor Website URL:	<a href="https://www.l3harris.com/all-capabilities/public-safety-and-critical-communications">https://www.l3harris.com/all-capabilities/public-safety-and-critical-communications</a>
P25 CAP Contact Name:	David Prather
P25 CAP Contact Phone:	(434) 455-6742
P25 CAP Contact Email:	<a href="mailto:David.Prather@L3Harris.com">David.Prather@L3Harris.com</a>

<sup>1</sup> The Summary Test Report for this product is available upon request. Please send your STR request to [P25CAP@hq.dhs.gov](mailto:P25CAP@hq.dhs.gov) and please include the subscriber 'Vendor Name'.

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**ENCRYPTION STATEMENT**

This product complies with the P25 CAP Encryption Requirements CAB (P25-CAB-ENC\_REQ). The checked box indicates how the product was tested.

<b>X</b>	Tested with the AES 256 encryption algorithm and shall be available with AES 256 encryption at a minimum or without any encryption of any type.
	Tested without the AES 256 encryption algorithm and shall only be available without any encryption of any type.

**CONVENTIONAL PERFORMANCE**

The Subscriber product has been tested for Conventional Performance. All requirements were passed except for those requirements identified below under Unsupported or Failed Requirements.

P25 CAP Conventional Performance Testing Coverage

Receiver Tests: Reference Sensitivity, Faded Reference Sensitivity, Signal Delay Spread Capability, Adjacent Channel Rejection, Offset Adjacent Channel Rejection, Co-Channel Rejection, Spurious Response Rejection, Intermodulation Rejection, Signal Displacement Bandwidth, Late Entry Unsilence Delay, and Receiver Throughput Delay.

Transmitter Tests: Unwanted Emissions (Adjacent Channel Power Ratio), Transmitter Power and Encoder Attack Time, Transmitter Throughput Delay, Frequency Deviation for C4FM, and Modulation Fidelity, Transient Frequency Behavior.

Unsupported or Failed Requirements

1. None.

**TRUNKING PERFORMANCE - FDMA**

The Subscriber product has been tested for Trunking Performance - FDMA. All requirements were passed except for those requirements identified below under Unsupported or Failed Requirements.

P25 CAP FDMA Trunking Performance Testing Coverage

Receiver Tests: Reference Sensitivity, Faded Reference Sensitivity, Signal Delay Spread Capability, Adjacent Channel Rejection, Offset Adjacent Channel Rejection, Co-Channel Rejection, Spurious Response Rejection, Intermodulation Rejection, and Signal Displacement Bandwidth.

Transmitter Tests: Unwanted Emissions (Adjacent Channel Power Ratio), Power Attack time, Encoder Attack Time, Transmitter Throughput Delay, Frequency Deviation for C4FM, and Modulation Fidelity, Transient Frequency Behavior.

Trunked Tests: Trunking Control Channel Slot Times, Trunking Request Time, and Transmitter Time to Key on a Traffic Channel.

Unsupported or Failed Requirements

1. 45ms slot times not supported.

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**TRUNKING PERFORMANCE - TDMA**

The Subscriber product has been tested for Trunking Performance - TDMA. All requirements were passed except for those requirements identified below under Unsupported or Failed Requirements.

**P25 CAP TDMA Trunking Performance Testing Coverage**

**Receiver Tests:** Reference Sensitivity, Faded Reference Sensitivity, Signal Delay Spread Capability, Adjacent Channel Rejection, Offset Adjacent Channel Rejection, Co-Channel Rejection, Spurious Response Rejection, Intermodulation Rejection, and Signal Displacement Bandwidth.

**Transmitter Tests:** Unwanted Emissions (Adjacent Channel Power Ratio), Frequency Deviation for H-CPM, Modulation Fidelity, Symbol Rate Accuracy, H-CPM Logical Channel Power measurements, and H-CPM Channel Time Alignment.

**Unsupported or Failed Requirements**

1. None.

**CONVENTIONAL DIRECT MODE INTEROPERABILITY**

The Subscriber product has been tested for Conventional Direct Mode Interoperability. All test cases were passed except for those test cases identified below under Unsupported or Failed Test Cases. Test cases that passed but require specific, sometimes optional, product capabilities are also identified below.

**P25 CAP Direct Mode Interoperability Testing Coverage**

Network Access Code (NAC) Operation, Group Voice Call, Emergency Call, Unit-to-Unit Voice Call, Encryption, Call Alert, Radio Check, Message Update, Status Update, Status Query, and Radio Unit Monitor.

**Unsupported or Failed Test Cases**

1. Call Alert, Radio Check, Message Update, Status Update, Status Query, Radio Unit Monitor are unsupported

**Optional Product Capabilities Required to Pass Test Cases**

1. In order to pass the supported Encryption test case, a subscriber with the AES-256 Encryption capability is required.

**CONVENTIONAL REPEAT MODE INTEROPERABILITY**

The Subscriber product has been tested for Conventional Repeat Mode Interoperability. All test cases were passed except for those test cases identified below under Unsupported or Failed Test Cases. Test cases that passed but require specific, sometimes optional, product capabilities are also identified below.

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P25 CAP Repeat Mode Interoperability Testing Coverage

Network Access Code (NAC) Operation, Group Voice Call, Emergency Call, Unit-to-Unit Voice Call, Encryption, Call Alert, Radio Check, Message Update, Status Update, Status Query, and Radio Unit Monitor.

Unsupported or Failed Test Cases

1. Call Alert, Radio Check, Short Message, Status Update, Status Query, Radio Unit Monitor are unsupported.

Optional Product Capabilities Required to Pass Test Cases

1. In order to pass the supported Encryption test case, a subscriber with the AES-256 Encryption capability is required.

**CONVENTIONAL REPEAT MODE with DISPATCH MONITORING CONSOLE INTEROPERABILITY**

The Subscriber product has been tested for Conventional Repeat Mode with Dispatch Monitoring Console Interoperability. All test cases were passed except for those test cases identified below under Unsupported or Failed Test Cases. Test cases that passed but require specific, sometimes optional, product capabilities are also identified below.

P25 CAP Repeat Mode Interoperability Testing Coverage

Group Voice Call, Emergency Call, All Call, Unit-to-Unit Voice Call, Encryption, Emergency Alarm, Call Alert, Radio Check, Radio Unit Inhibit/Uninhibit, Message Update, Status Update, Status Query, and Radio Unit Monitor.

Unsupported or Failed Test Cases

1. Call Alert, Radio Check, All Call, Radio Unit Inhibit/Uninhibit, Status Query, and Radio Unit Monitor are unsupported.
2. For Message Update only the *SU 1 to DMC Message Update* test case is supported, and for Status Update only the *Status Update from SU 1 to DMC* test case is supported.
3. Test Cases not verified for rule of three due to operational limitations of the representative equipment used for interoperability testing –  
Supported test cases for Message Update

Optional Product Capabilities Required to Pass Test Cases

1. In order to pass the supported Encryption test case, a subscriber with the AES-256 Encryption capability is required.
2. In order to pass the supported Status Update and Message Update test cases, a subscriber with the P25 Data software option is required.

**TRUNKED SUBSCRIBER UNIT INTEROPERABILITY – FDMA**

The Subscriber product has been tested for Trunked Interoperability - FDMA. All test cases were passed except for those test cases identified below under Unsupported or Failed Test Cases. Test cases that passed but require specific, sometimes optional, product capabilities are also identified below.

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**P25 CAP FDMA Trunked Interoperability Testing Coverage**

Full Registration, Group Voice Call, Unit to Unit Voice Call, Broadcast Voice Call, Affiliation, Announcement Group Call, Emergency Alarm, Emergency Group Call, Encryption, Intra-Location Registration Area Roaming, Deregistration, System Call, Call Alert, Short Message, Status Query, Status Update, Radio Unit Monitoring, Radio Unit Disable/Re-Enable, and Radio Check.

**Unsupported or Failed Test Cases**

1. Unit-to-unit call queued with target availability check – traffic channel assignment before target availability check, and Status Query are not supported.
2. Test Cases not verified for rule of three due to operational limitations of the base station or infrastructure equipment used for interoperability testing –  
    In Home Operational Mode: Unit-to-Unit Call without Target Availability Check, Unit-to-Unit Call Queued without Target Availability Check, Short Message, System Call, Radio Unit Monitoring, Radio Unit Disable/Re-Enable and Radio Check.  
    In Inter-System Roaming Operational Mode: Unverified Registration, Group Voice Call, Unit-to-Unit Call, Broadcast Voice Call, Affiliation, Announcement Group Call, Emergency Call, Encryption, System Call, Call Alert, Short Message, Status Update, Radio Unit Monitoring, Radio Unit Disable/Re-Enable and Radio Check.
3. Inter-WACN Roaming Operational Mode not verified for rule of three due to operational limitations of the base station or infrastructure equipment used for interoperability testing.

**Optional Product Capabilities Required to Pass Test Cases**

1. In order to pass the FDMA trunked test cases, a subscriber with the P25 Trunking capability is required.
2. In order to pass the Encryption test case, a subscriber with the AES-256 Encryption capability is required.
3. In order to pass the supported Status Update and Short Message test cases, a subscriber with the P25 Data software option is required.

**TRUNKED SUBSCRIBER UNIT INTEROPERABILITY – TDMA**

The Subscriber product has been tested for Trunked Interoperability - TDMA. All test cases were passed except for those test cases identified below under Unsupported or Failed Test Cases. Test cases that passed but require specific, sometimes optional, product capabilities are also identified below.

**P25 CAP TDMA Trunked Interoperability Testing Coverage**

Registration, Group Voice Call, Unit-to-Unit Voice Call, Broadcast Call, Announcement Group Call, Emergency Group Call, Encryption Group Call, System Call, Radio Unit Monitoring, and Transmitting Subscriber Forced Preemption.

**Unsupported or Failed Test Cases**

1. Unit-to-unit call queued with target availability check – traffic channel assignment before target availability check, and Transmitting Subscriber Forced Preemption test case 1: TDMA SU Forced Audio Preemption are not supported.
2. Home Operational Mode test cases not verified for rule of three due to operational limitations of the base station or infrastructure equipment used for interoperability testing –

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Group Call Interrupt, Unit-to-Unit Call, System Call, Radio Unit Monitoring.


3. Inter-System and Inter-WACN Roaming Operational Modes were not verified for rule of three due to operational limitations of the base station or infrastructure equipment used for interoperability testing.

Optional Product Capabilities Required to Pass Test Cases

1. In order to pass the TDMA trunked test cases, a subscriber with the P25 Trunking and P25 Phase 2 TDMA capability is required.
2. In order to pass the supported Encryption test case, a subscriber with the AES-256 Encryption capability is required.

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**SIGNATURE AND DATE**

<hr/> <p>December 2, 2019</p> <hr/>	 <hr/>
Date Signed	Vendor's Authorized Representative <u>Signature</u>
<hr/> <p>David Prather</p> <hr/>	
Vendor's Authorized Representative <u>Printed Name</u>	

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**BURDEN STATEMENT**

OMB NO: 6040-0015 (additional questions are pending OMB approval)

EXPIRATION DATE: 6/30/2019 (additional questions are pending OMB approval)

An agency may not conduct or sponsor information collection and a person is not required to respond to this information collection unless it displays a current valid Office of Management and Budget control number and expiration date. The control number for this collection is 6040-0015 and this form will expire on 06/30/2019 (additional questions are pending OMB approval). The estimated average time to complete this form is 60 minutes per respondent. If you have any comments regarding the burden estimate, you can write to the U.S. Department of Homeland Security, Science and Technology Directorate, Washington, D.C. 20528.

DHS FORM 10044 – June 2009