

Project 25 Compliance Assessment Program
SDOC – EF Johnson – ATLAS 4500 VHF Repeater
February 08 2019

BASE STATION REPEATER PRODUCT INFORMATION

Base Station Repeater Info	Detail
Model Name:	ATLAS 4500 VHF Repeater
Tested Software Versions: ¹	1.0.1_27, 3.1.0-3
Hardware Capabilities/Options & Software Options:	136 MHz – 174 MHz, P25 Conventional, P25 Trunking, P25 TDMA Trunking

Test case results and updated software versions for this model can be found in the Summary Test Report identified below.

TEST REQUIREMENTS CAB IDENTIFICATION

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

check one	P25 CAP Test Requirement CAB	Details
	P25-CAB-CAI_TEST_REQ – August 2016²	Adds conventional interoperability testing to the March 2010 P25 CAP Test Requirements
✓	P25-CAB-CAI_TEST_REQ – July 2017³	Includes August 2016 P25 CAP Test Requirements; Adds TDMA performance and interoperability testing and trunked supplementary data testing

SUMMARY TEST REPORT IDENTIFIER⁴

Summary Test Report (STR) Identifier:	STR – EF Johnson – BASE STATION REPEATER
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CONTACT INFORMATION

Company Info	Details
Company Name:	EF Johnson Technologies INC.
Company Website URL:	https://www.efjohnson.com/
P25 CAP Contact Name:	Viet Vu
P25 CAP Contact Phone:	972-819-0942
P25 CAP Contact Email:	vvu@efji.com

¹ Current and previous software versions are listed in the 'Models & Software' worksheet tab of the Summary Test Report (STR).

² The following version of the 2016 CAB was used for testing: Baseline Common Air Interface Testing Requirements (August 2016).

³ The following version of the 2017 CAB was used for testing: Baseline Common Air Interface Testing Requirements (July 2017).

⁴ The Summary Test Report for this product is available upon request. Please send your STR request to P25CAP@hq.dhs.gov and please include the subscriber 'Vendor Name'.

Project 25 Compliance Assessment Program
SDOC – EF Johnson- ATLAS 4500 VHF Repeater
February 08 2019

CONVENTIONAL PERFORMANCE

The Base Station Repeater 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, 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 Throughput Delay, Frequency Deviation for C4FM, and Modulation Fidelity, Transient Frequency Behavior.

Unsupported or Failed Requirements

1. Late Entry Unsilence Delay, Receiver Throughput Delay, and Transmitter Throughput Delay are unsupported.

TRUNKING PERFORMANCE - FDMA

The Base Station Repeater 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, 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), Transmitter Throughput Delay, Frequency Deviation for C4FM, and Modulation Fidelity, Transient Frequency Behavior.

Trunked Tests: Time to Grant

Unsupported or Failed Requirements

1. 37.5 ms trunking control channel slot times unsupported.
2. Transmitter Throughput Delay is unsupported.

TRUNKING PERFORMANCE - TDMA

(only applicable for the 2017 CAB)

The Base Station Repeater 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, Adjacent Channel Rejection, Offset Adjacent Channel Rejection, Co-Channel Rejection, Spurious Response Rejection, Intermodulation Rejection, and Signal Displacement Bandwidth.

Project 25 Compliance Assessment Program
SDOC – EF Johnson- ATLAS 4500 VHF Repeater
February 08 2019

Transmitter Tests: Unwanted Emissions (Adjacent Channel Power Ratio), Modulation Fidelity, and Symbol Rate Accuracy.

Unsupported or Failed Requirements

1. None.

CONVENTIONAL REPEAT MODE INTEROPERABILITY

The Base Station Repeater product has been tested for Conventional Repeat Mode Interoperability. All test cases were passed except for those 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

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

Optional Product Capabilities Required to Pass Test Cases

1. None.

CONVENTIONAL REPEAT MODE with DISPATCH MONITORING CONSOLE INTEROPERABILITY

The Base Station Repeater 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. Emergency Call – test case 2 2.6.2.4.2, Message Update, Status Query, Radio Unit Monitor are unsupported.
2. Status Update – Test Case 1, Status Update from SU1 to DMC is supported.

Optional Product Capabilities Required to Pass Test Cases

1. None.

TRUNKED BASE STATION REPEATER INTEROPERABILITY – FDMA

(Baseline features are tested as part of the 2016 CAB. Additional features are tested as part of the 2017 CAB.)

Project 25 Compliance Assessment Program
SDOC – EF Johnson- ATLAS 4500 VHF Repeater
February 08 2019

The Base Station Repeater 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.

2016 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

2017 P25 CAP FDMA Trunked Interoperability Testing Coverage

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 Voice Call – test cases 2.2.3.4.4, 2.2.3.4.5, and 2.2.3.4.6, Short Message, Status Query, Radio Unit Monitor are unsupported.

Optional Product Capabilities Required to Pass Test Cases

1. None.

TRUNKED BASE STATION REPEATER INTEROPERABILITY – TDMA

(only applicable for the 2017 CAB)

The Base Station Repeater 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 Voice Call, Radio Unit Monitoring, and Transmitting Subscriber Forced Preemption are unsupported.

Optional Product Capabilities Required to Pass Test Cases

1. None.

**Project 25 Compliance Assessment Program
SDOC – EF Johnson- ATLAS 4500 VHF Repeater
February 08 2019**

SIGNATURE AND DATE

02/08/2019	
_____	_____
Date Signed	Vendor's Authorized Representative <u>Signature</u>

	Viet Vu

	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