

Project 25 Compliance Assessment Program

Summary Test Report

Harris XG-25P UHF-L

STR-Harris-XG25PUHFL141112

Test Item Description	
Manufacturer	Harris Corp
Manufacturer Contact	David Prather 434-455-6742
Product Name	Harris XG-25P UHF-L portable subscriber
Installed Options	XGPR04A firmware
Installed Vocoder	Enhanced Full Rate with system improvements

Test Description
P25-CAB-CAI_TEST_REQ – March 2010 , Section 2.1.1.1 – Project 25 Phase 1 Common Air Interface Conventional Subscriber Unit Performance
P25-CAB-CAI_TEST_REQ –March 2010 , Section 2.1.1.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance
P25-CAB-CAI_TEST_REQ - March 2010 , Section 2.1.3.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability

Laboratory Information (Performance)	
P25 CAP Laboratory Code	Harris Corp P25CAP081017
Date(s) of Test	November 12, 2014
Date of Issue	November 12, 2014

Laboratory Information	
P25 CAP Laboratory Code	Harris Corp P25CAP081017
Date(s) of Test	September 9, 2013
Date of Issue	May 1, 2014

Laboratory Information	
P25 CAP Laboratory Code	EF Johnson Technologies P25CAP081010
Date(s) of Test	August 8, 2013
Date of Issue	September 5, 2013

Laboratory Information	
P25 CAP Laboratory Code	Timco Engineering P25CAPTIMCO081016
Date(s) of Test	October 18, 2013; October 18, 2013
Date of Issue	October 22, 2013; October 23, 2013

Project 25 Compliance Assessment Program

Summary Test Report

Harris XG-25P UHF-L

STR-Harris-XG25PUHFL141112

Informative References	
Date	Title
March 2010	P25-CAB-CAI_TEST_REQ

Other Devices Tested with Harris XG-25P UHF-L		
Manufacturer	Product Name, Definition, and unique ID	Installed Options
Harris	MASTR V Subsystem Serial #s: 8529055, 8527186, 8527187, 8527188, 8090080, 8529054, 8527183, 8527184, 8527185	SR10A
EF Johnson Technologies	3800 Trunking Repeater Base Station	Rel 1.1.1-5
Tait	TN9400	V 1.40
Tait/Cassidian	Tait Cassidian P25 Core Network	EADS P25V11_06 E22

Project 25 Compliance Assessment Program

Summary Test Report

Harris XG-25P UHF-L

STR-Harris-XG25PUHFL141112

Performance Testing

P25-CAB-CAI_TEST_REQ – March 2010 , Section 2.1.1.1 – Project 25 Phase 1 Common Air Interface Conventional Subscriber Unit Performance		DTR-P25CAP081017-2141112H XG-25P UHF-L	
RECEIVER TESTS- UHF-L (P25 Conventional Mode)			
Test Case	Description	Requirement	Results
2.1.4	Reference Sensitivity	≤ -116 dBm	P1
2.1.5	Faded Reference Sensitivity (8 & 100 km/h)	≤ -108 dBm	P1
2.1.6	Signal Delay Spread Capability	≥ 50 us	P1
2.1.7	Adjacent Channel Rejection	≥ 60 dB	P1
2.1.8	Co-Channel Rejection	≤ 9 dB	P
2.1.9	Spurious Response Rejection	≥ 70 dB	P
2.1.10	Intermodulation Rejection	≥ 70 dB	P
2.1.11	Signal Displacement Bandwidth	≥ 1000 Hz	P
2.1.17	Late Entry Unscquelch Delay (No talk group or encryption)	≤ 125 ms	P
2.1.18	Receiver Throughput Delay	≤ 125 ms	P

P25-CAB-CAI TEST_REQ – March 2010 , Section 2.1.1.1 – Project 25 Phase 1 Common Air Interface Conventional Subscriber Unit Performance		DTR-P25CAP081017-2141112H XG-25P UHF-L	
TRANSMITTER TESTS- UHF-L (P25 Conventional Mode)			
Test Case	Description	Requirement	Results
2.2.8	Unwanted Emissions: Adjacent Power Ratio	≥ 67 dB	P
2.2.12	Transmitter Power and Encoder Attack Time		
	Transmitter Attack Time	≤ 50 ms	P
	Encoder Attack Time	≤ 100 ms	P
2.2.14	Transmitter Throughput Delay	≤ 125 ms	P
2.2.15	Frequency Deviation for C4FM		
	High level Signal Deviation	$2544 < f_{dev} \leq 3111$ Hz	P
	Low Level Signal Deviation	$848 < f_{dev} \leq 1037$ Hz	P
2.2.16	Modulation Fidelity	$\leq 5\%$	P
2.2.18	Transient Frequency Behavior		
	Time Interval $t_1 = 10$ ms	$ \Delta f \leq 12.5$ KHz	P2
	Time Interval $t_2 = 25$ ms	$ \Delta f \leq 6.25$ KHz	P
	Time Interval $t_3 = 10$ ms	$ \Delta f \leq 12.5$ KHz	P2

Project 25 Compliance Assessment Program

Summary Test Report

Harris XG-25P UHF-L

STR-Harris-XG25PUHFL141112

P25-CAB-CAI_TEST_REQ – March 2010 , Section 2.1.1.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance		DTR-P25CAP081017-2141112H XG-25P UHF-L	
RECEIVER TESTS- UHF-L (P25 Trunked Mode)			
Test Case	Description	Requirement	Results
2.1.4	Reference Sensitivity	≤ -116 dBm	P1
2.1.5	Faded Reference Sensitivity (8 & 100 km/h)	≤ -108 dBm	P1
2.1.6	Signal Delay Spread Capability	≥ 50 us	P1
2.1.7	Adjacent Channel Rejection	≥ 60 dB	P1
2.1.8	Co-Channel Rejection	≤ 9 dB	P
2.1.9	Spurious Response Rejection	≥ 70 dB	P
2.1.10	Intermodulation Rejection	≥ 70 dB	P
2.1.11	Signal Displacement Bandwidth	≥ 1000 Hz	P

P25-CAB-CAI TEST_REQ –March 2010 , Section 2.1.1.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance		DTR-P25CAP081017-2141112H XG-25P UHF-L	
TRANSMITTER TESTS- UHF-L (P25 Trunked Mode)			
Test Case	Description	Requirement	Results
2.2.8	Unwanted Emissions: Adjacent Power Ratio	≥ 67 dB	P
2.2.12	Transmitter Power and Encoder Attack Time		
	Transmitter Attack Time	≤ 50 ms	P
	Encoder Attack Time	≤ 100 ms	P
2.2.14	Transmitter Throughput Delay	≤ 125 ms	P
2.2.15	Frequency Deviation for C4FM		
	High level Signal Deviation	$2544 < f_{dev} \leq 3111$ Hz	P
	Low Level Signal Deviation	$848 < f_{dev} \leq 1037$ Hz	P
2.2.16	Modulation Fidelity	$\leq 5\%$	P
2.2.18	Transient Frequency Behavior		
	Time Interval $t_1 = 10$ ms	$ \Delta f \leq 12.5$ KHz	P2
	Time Interval $t_2 = 25$ ms	$ \Delta f \leq 6.25$ KHz	P
	Time Interval $t_3 = 10$ ms	$ \Delta f \leq 12.5$ KHz	P2

Project 25 Compliance Assessment Program

Summary Test Report

Harris XG-25P UHF-L

STR-Harris-XG25PUHFL141112

Trunking Performance Testing

P25-CAB-CAI TEST_REQ –March 2010 , Section 2.1.1.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance		DTR-P25CAP081017-2141112H XG-25P UHF-L	
Trunked Subscriber Tests- UHF-L			
Test Case	Description	Requirement	Results
2.3.1	Trunking Control Channel Slot Times (37.5-ms slot*)		
	Encode Attack Time	4.15 ms max 2.00 ms min	P
	RF Power Attack Time	4.15 ms max 0.00 ms min	P
	RF Power Turn Off Time	1.57 ms max	P
2.3.2	Trunking Request Time (37.5-ms slot*)	≤ 160 ms	P
2.3.3	Trunking Voice Access Time	≤ 400 ms	P
2.3.5	Transmitter Time to Key on a Traffic Channel	Short Channel Form	
	RF transmitter time to key on a working channel	≤ 150.0 ms	P
	Encoder transmit time	≤ 150.0 ms	P

** Harris base station and subscriber unit products operate with 37.5 ms ISP slot times, and do not support 45 ms ISP slot times.*

Project 25 Compliance Assessment Program

Summary Test Report

Harris XG-25P UHF-L

STR-Harris-XG25PUHFL141112

Trunking Interoperability Testing

P25-CAB-CAI_Test_REQ- March 2010, Section 2.1.3.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability		DTRP25CAP-081017-1120312H13	DTR-P25CAP-081010-13090501-Harris XG-25P	DTR-TIMCO081016 TAIT/TN9400/HARRIS	DTR-TIMCO081016 Tait/Cassidian/Harris
Harris Model Class: XGP Software		Harris MASTR V SR10A	EF Johnson 3800 Rel 1.1.1-5	Tait N9400 Ver 1.40	Tait Cassidian P25 Core Network EADS P25V11 06 E22
Test Case	Description				
2.2.1	Full registration				
2.2.1.4.1	Test case 1 - Valid registration				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.1.4.2	Test case 2 - Denied or refused registration				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.1.4.3	Test case 3 - Unverified registration				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.2	Group Voice Call				
2.2.2.4.1	Test case 1 - Group call granted				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.2.4.2	Test case 2 - Group call denied				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1

Project 25 Compliance Assessment Program

Summary Test Report

Harris XG-25P UHF-L

STR-Harris-XG25PUHFL141112

P25-CAB-CAI_Test_REQ- March 2010, Section 2.1.3.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability		DTRP25CAP-081017-1120312H13	DTR-P25CAP-081010-13090501-Harris XG-25P	DTR-TIMCO081016 TAIT/TN9400/HARRIS	DTR-TIMCO081016 Tait/Cassidian/Harris
Harris Model Class: XGP Software		Harris MASTR V SR10A	EF Johnson 3800 Rel 1.1.1-5	Tait N9400 Ver 1.40	Tait Cassidian P25 Core Network EADS P25V11 06 E22
Test Case	Description				
2.2.2.4.3	Test case 3 - Group call request queued				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.3	Unit-to-Unit Voice Call				
2.2.3.4.1	Test case 1 – Unit-to-Unit call with target availability check				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.3.4.2	Test case 2 – Unit-to-Unit call with target availability check denied by target				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.3.4.3	Test case 3 – Unit-to-Unit call queued with target availability check – traffic channel assignment after target availability check				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1

Project 25 Compliance Assessment Program

Summary Test Report

Harris XG-25P UHF-L

STR-Harris-XG25PUHFL141112

P25-CAB-CAI_Test_REQ- March 2010, Section 2.1.3.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability		DTRP25CAP-081017-1120312H13	DTR-P25CAP-081010-13090501-Harris XG-25P	DTR-TIMCO081016 TAIT/TN9400/HARRIS	DTR-TIMCO081016 Tait/Cassidian/Harris
Harris Model Class: XGP Software		Harris MASTR V SR10A	EF Johnson 3800 Rel 1.1.1-5	Tait N9400 Ver 1.40	Tait Cassidian P25 Core Network EADS P25V11_06 E22
Test Case	Description				
2.2.3.4.4	Test case 4 – Unit-to-Unit call queued with target availability check – traffic channel assignment before target availability check				
	Home operation	N1	N1	N1	N1
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.3.4.5	Test case 5 – Unit-to-Unit call without target availability check				
	Home operation	P	N1	N1	N1
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.3.4.6	Test case 6 – Unit-to-Unit call queued without target availability check				
	Home operation	P	N1	N1	N1
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.3.4.7	Test case 7 – Unit-to-Unit call denied				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.4	Broadcast Voice Call				
2.2.4.4.1	Test case 1 - Broadcast voice call				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1

Project 25 Compliance Assessment Program

Summary Test Report

Harris XG-25P UHF-L

STR-Harris-XG25PUHFL141112

P25-CAB-CAI_Test_REQ- March 2010, Section 2.1.3.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability		DTRP25CAP-081017-1120312H13	DTR-P25CAP-081010-13090501-Harris XG-25P	DTR-TIMCO081016 TAIT/TN9400/HARRIS	DTR-TIMCO081016 Tait/Cassidian/Harris
Harris Model Class: XGP Software		Harris MASTR V SR10A	EF Johnson 3800 Ref 1.1.1-5	Tait N9400 Ver 1.40	Tait Cassidian P25 Core Network EADS P25V11_06 E22
Test Case	Description				
2.2.5	Affiliation				
2.2.5.4.1	Test case 1 - Radio permitted to affiliate with new group				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.5.4.2	Test case 2 - Radio denied affiliation to new group				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.6	Announcement Group Call				
2.2.6.4.1	Test case 1 - Collection of talk groups receive call				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.7	Emergency Alarm				
2.2.7.4.1	Test case 1 - Emergency alarm				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1

Project 25 Compliance Assessment Program

Summary Test Report

Harris XG-25P UHF-L

STR-Harris-XG25PUHFL141112

P25-CAB-CAI_Test_REQ- March 2010, Section 2.1.3.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability		DTRP25CAP-081017-1120312H13	DTR-P25CAP-081010-13090501-Harris XG-25P	DTR-TIMCO081016 TAIT/TN9400/HARRIS	DTR-TIMCO081016 Tait/Cassidian/Harris
Harris Model Class: XGP Software		Harris MASTR V SR10A	EF Johnson 3800 Rel 1.1.1-5	Tait N9400 Ver 1.40	Tait Cassidian P25 Core Network EADS P25V11_06 E22
Test Case	Description				
2.2.8	Emergency Group Call				
2.2.8.4.1	Test case 1 - Emergency call				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.10	Encryption				
2.2.10.4.1	Test case 1 - Call privacy for encrypted call				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1
2.2.11	Intra-Location Registration Area Roaming				
2.2.11.4.1	Test case 1 - Idle radio				
	Home operation	P	P	P	P
	Inter-System operation	N1	N1	N1	N1
	Inter-WACN operation	N1	N1	N1	N1

Project 25 Compliance Assessment Program

Summary Test Report

Harris XG-25P UHF-L

STR-Harris-XG25PUHFL141112

Model Class Definition

Model Class Definition <small>(as of the date of this STR)</small>		Applied to: <i>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.3.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability</i>
Model Class Name	Product Name, Definition, Unique ID	Installed Options*
<u>XGP Software</u>	<u>Unity XG-100P</u>	<u>XGP Rxx</u>
	<u>Unity XG-100M</u>	<u>XGP Rxx</u>
	<u>XG-75P 7/8</u>	<u>XGP Rxx</u>
	<u>XG-75PE UHF-H</u>	<u>XGP Rxx</u>
	<u>XG-75P UHF-L</u>	<u>XGP Rxx</u>
	<u>XG-75P UHF-L 100mW</u>	<u>XGP Rxx</u>
	<u>XG-75P VHF</u>	<u>XGP Rxx</u>
	<u>XG-75M/M7300 7/8</u>	<u>XGP Rxx</u>
	<u>XG-75M/M7300 UHF-H</u>	<u>XGP Rxx</u>
	<u>XG-75M/M7300 UHF-L</u>	<u>XGP Rxx</u>
	<u>XG-75M/M7300 VHF 50W</u>	<u>XGP Rxx</u>
	<u>XG-75M/M7300 VHF 110W</u>	<u>XGP Rxx</u>
	<u>XG-25P 7/8</u>	<u>XGP Rxx</u>
	<u>XG-25P UHF-L</u>	<u>XGP Rxx</u>
	<u>XG-25P VHF</u>	<u>XGP Rxx</u>
	<u>XG-25M 7/8</u>	<u>XGP Rxx</u>
	<u>XG-25M UHF-L</u>	<u>XGP Rxx</u>
	<u>XG-25M VHF</u>	<u>XGP Rxx</u>
	<u>P5500 800</u>	<u>XGP Rxx</u>
	<u>P5500 VHF</u>	<u>XGP Rxx</u>
	<u>P5400 800</u>	<u>XGP Rxx</u>
	<u>P5400 UHF-H</u>	<u>XGP Rxx</u>
	<u>P5400 UHF-L</u>	<u>XGP Rxx</u>
	<u>P5400 VHF</u>	<u>XGP Rxx</u>
	<u>P7300 7/8</u>	<u>XGP Rxx</u>
	<u>P7300 UHF-H</u>	<u>XGP Rxx</u>

* Note: In the installed option designation “XGP Rxx”, the “xx” denotes the inclusion of any revision number, indicating that all revisions of XGP software are included in the model class for the associated product.

Project 25 Compliance Assessment Program

Summary Test Report

Harris XG-25P UHF-L

STR-Harris-XG25PUHFL141112

Test Case Result Definitions	
No Test performed	---
Test Does Not Apply to the Test Object	N/A
Test Object Meets Requirements	P (Pass)
Test Object Does Not Meet Requirements	F (Fail)
Test Object is Not Conclusive	I (Inconclusive)
Comments	
P1: Device under test passes requirements for both C4FM and WCQPSK	
P2: Device under test measured $ \Delta f \leq 12.5$ KHz for time intervals t_1 and t_3 , though not a requirement for transmitter carrier output power rating of ≤ 6 watts per TIA-102.CAAB-C section 3.2.18, last paragraph.	
N1: FNE does not support this feature	

The information contained herein has been provided by the manufacturer of the product with permission to make the information publically available. The Department of Homeland Security (DHS) is making this information available as a public service; however, DHS IS PROVIDING THE INFORMATION "AS IS." DHS MAKES NO EXPRESS OR IMPLIED WARRANTIES AND SPECIFICALLY, DHS MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, REGARDING THE ACCURACY OR USE OF THIS INFORMATION. Reference to any specific commercial products, processes, or services by trade name, trademark, manufacturer, or otherwise does not constitute an endorsement by or a recommendation from DHS.

OMB NO: 1640-0015

EXPIRATION DATE: 07/31/2015

Burden Statement

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 1640-0015 and this form will expire on 07/31/2015. 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 Department of Homeland Security, Science and Technology Directorate, Washington, DC 20528.

DHS FORM 10056 – June 2009