

## Project 25 Compliance Assessment Program

### Summary Test Report

XTS 2500, XTS 1500 Portable Subscribers

STR-MOT-XTS2500-02122013

February 12, 2013

Device Under Test Description	
<b>Manufacturer</b>	Motorola Solutions
<b>Manufacturer Contact</b>	Debra Brown 847-576-3318
<b>Product Name</b>	XTS 2500, XTS 1500 Portable Subscribers
<b>Frequency Bands</b>	VHF, UHF, 700/800MHz
<b>Installed Options</b>	Trunking, Encryption
<b>Installed Vocoder</b>	Baseline 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. (Home Configuration tests are the same as the September 2009 CAB. Inter-System and Inter-WACN roaming configurations are not supported on the Motorola infrastructure.)

Informative References	
Date	Title
March 2010	P25-CAB-CAI_TEST_REQ

Other Devices Tested with Motorola Solutions XTS 2500, XTS 1500 Subscribers		
Manufacturer	Product Name and Definition	Installed Options
Motorola Solutions	ASTRO®25	System Release 7.7
		System Release 7.8
		System Release 7.9
		System Release 7.11
		System Release 7.13
Harris	Harris Master V P25 Station	System Release PR9B
Tait/EADS	P25 Trunked Radio System	TaitNet P25/EADS COR P25 Network
Cassidian	Cassidian COR P25 Infrastructure	TB5000i Base Station Model Class
PowerTrunk	PowerTrunk 25 FNE B800014	System Release Ver. 9.4.52
EF Johnson	Trunking	System Release 3.1-RC1

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### Testing Laboratory Information

Laboratory Information	
<b>P25 CAP Laboratory Code</b>	Motorola Performance CAI Subscriber FL P25CAP081014
<b>Date(s) of Test</b>	February 7 2011; August 19-October 6, 2009
<b>Date of Issue</b>	February 16, 2011; September 1-October 6, 2009
<b>P25 CAP Laboratory Code</b>	TIMCO Engineering Inc.(Infrastructure used Motorola Solutions) P25CAP081016
<b>Date(s) of Test</b>	March 3, 2011
<b>Date of Issue</b>	March 8, 2011
<b>P25 CAP Laboratory Code</b>	Harris Corp P25CAP081017
<b>Date(s) of Test</b>	January 20, 2011
<b>Date of Issue</b>	January 24, 2011
<b>P25 CAP Laboratory Code</b>	Teltest Laboratories (Infrastructure used TAIT/EADS) P25CAP081015
<b>Date(s) of Test</b>	October 28, 2010
<b>Date of Issue</b>	November 15, 2010
<b>P25 CAP Laboratory Code</b>	TIMCO Engineering Inc.(Infrastructure used PowerTrunk) P25CAP081016
<b>Date(s) of Test</b>	June 14, 2010
<b>Date of Issue</b>	June 28, 2010
<b>P25 CAP Laboratory Code</b>	EF Johnson Technologies P25CAP081010
<b>Date(s) of Test</b>	October 14, 2009
<b>Date of Issue</b>	November 16, 2009

### Performance Test Cases and Results

<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.1.1 – Project 25 Phase 1 Common Air Interface Conventional Subscriber Unit Performance</b>		DTR-P25CAP081014-P25-0012 (136-174MHz) DTR-P25CAP081014-P25-0013 (UHF-R1 380-470MHz) DTR-P25CAP081014-P25-0011 (UHF-R2 450-520MHz) DTR-P25CAP081014-P25-0014 (700/800MHz)	
<b>PERFORMANCE – Conventional Receiver Tests XTS 2500, XTS 1500 (VHF 136-174, UHF-R1 380-470, UHF-R2 450-520, 700, 800)</b>			
Test Case	Description	Requirement	Results
<b>2.1.4</b>	Reference Sensitivity	≤ -116 dBm	P1
<b>2.1.5</b>	Faded Reference Sensitivity	≤ -108 dBm	P2
<b>2.1.6</b>	Signal Delay Spread Capability	≥ 50 μs	P3
<b>2.1.7</b>	Adjacent Channel Rejection	≥ 60 dB	P4
<b>2.1.8</b>	Co-Channel Rejection	≤ 9 dB	P
<b>2.1.9</b>	Spurious Response Rejection	≥ 70 dB	P
<b>2.1.10</b>	Intermodulation Rejection	≥ 70 dB	P
<b>2.1.11</b>	Signal Displacement Bandwidth	≥ 1000 Hz	P
<b>2.1.17</b>	Late Entry Unscquelch Delay		
	No Talk Group or Encryption	≤ 125 ms	P
	Talk Group Only	≤ 370 ms	P
	Encryption Only	≤ 370 ms	P
	Both (On Clear or Encrypted Channel)	≤ 460 ms	P
<b>2.1.18</b>	Receiver Throughput Delay	≤ 125 ms	P

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<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.1.1 – Project 25 Phase 1 Common Air Interface Conventional Subscriber Unit Performance</b>		DTR-P25CAP081014-P25-0014 (700/800MHz)	
<b>PERFORMANCE – Conventional Transmitter Tests XTS 2500, XTS 1500 (800MHz)</b>			
Test Case	Description	Requirement	Results
2.2.8	Unwanted Emissions: Adjacent Channel Power Ratio	$\geq 67$ dB	P
2.2.12	Transmitter Power Attack Time	$\leq 50$ ms	P
	Encoder Attack Time	$\leq 100$ ms	P
2.2.14	Transmitter Throughput Delay	$\leq 125$ ms	P
2.2.15	Frequency Deviation for C4FM		
	High Level signal Deviation	$2544 \leq fdev \leq 3111$ Hz	P
	Low Level Signal Deviation	$848 \leq fdev \leq 1037$ Hz	P
2.2.16	Modulation Fidelity	$\leq 5\%$	P
2.2.18	Transient Frequency Behavior		
	Time Interval $t_1 = 20.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P
	Time Interval $t_2 = 50.0$ ms	$\{\Delta f\} \leq 6.25$ kHz	P
	Time Interval $t_3 = 10.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P

<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.1.1 – Project 25 Phase 1 Common Air Interface Conventional Subscriber Unit Performance</b>		DTR-P25CAP081014-P25-0014 (700/800MHz)	
<b>PERFORMANCE – Conventional Transmitter Tests XTS 2500, XTS 1500 (700MHz)</b>			
Test Case	Description	Requirement	Results
2.2.8	Unwanted Emissions: Adjacent Channel Power Ratio		
	Offset From Center Frequency (kHz)	ACPR (dB)	
	9.375	40	P
	15.625, 21.875, 37.5	60	P
	62.5, 87.5, 150, 250, 350	65	P
	>400 kHz to 12 MHz	75	P
	12 MHz to paired RX Band	75	P
	In the Paired RX Band	100	P
2.2.12	Transmitter Power Attack Time	$\leq 50$ ms	P
	Encoder Attack Time	$\leq 100$ ms	P
2.2.14	Transmitter Throughput Delay	$\leq 125$ ms	P
2.2.15	Frequency Deviation for C4FM		
	High Level signal Deviation	$2544 \leq fdev \leq 3111$ Hz	P
	Low Level Signal Deviation	$848 \leq fdev \leq 1037$ Hz	P
2.2.16	Modulation Fidelity	$\leq 5\%$	P
2.2.18	Transient Frequency Behavior		
	Time Interval $t_1 = 20.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P
	Time Interval $t_2 = 50.0$ ms	$\{\Delta f\} \leq 6.25$ kHz	P
	Time Interval $t_3 = 10.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P

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<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.1.1 – Project 25 Phase 1 Common Air Interface Conventional Subscriber Unit Performance</b>		DTR-P25CAP081014-P25-0013 (UHF-R1 380-470MHz) DTR-P25CAP081014-P25-0011 (UHF-R2 450-520MHz)	
<b>PERFORMANCE - Conventional Transmitter Tests XTS 2500, XTS 1500 (UHF-R1 380-470MHz; UHF-R2 450-520MHz)</b>			
Test Case	Description	Requirement	Results
2.2.8	Unwanted Emissions: Adjacent Channel Power Ratio	≥ 67 dB	P
2.2.12	Transmitter Power 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	$2544 \leq f_{dev} \leq 3111$ Hz	P
	Low Level Signal Deviation	$848 \leq f_{dev} \leq 1037$ Hz	P
2.2.16	Modulation Fidelity	≤ 5%	P
2.2.18	Transient Frequency Behavior		
	Time Interval $t_1 = 10.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P
	Time Interval $t_2 = 25.0$ ms	$\{\Delta f\} \leq 6.25$ kHz	P
	Time Interval $t_3 = 10.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P

<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.1.1 – Project 25 Phase 1 Common Air Interface Conventional Subscriber Unit Performance</b>		DTR-P25CAP081014-P25-0012 (136-174MHz)	
<b>PERFORMANCE – Conventional Transmitter Tests XTS 2500, XTS 1500 (VHF 136-174)</b>			
Test Case	Description	Requirement	Results
2.2.8	Unwanted Emissions: Adjacent Channel Power Ratio	≥ 67 dB	P
2.2.12	Transmitter Power 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	$2544 \leq f_{dev} \leq 3111$ Hz	P
	Low Level Signal Deviation	$848 \leq f_{dev} \leq 1037$ Hz	P
2.2.16	Modulation Fidelity	≤ 5%	P
2.2.18	Transient Frequency Behavior		
	Time Interval $t_1 = 5.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P
	Time Interval $t_2 = 20.0$ ms	$\{\Delta f\} \leq 6.25$ kHz	P
	Time Interval $t_3 = 5.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P

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<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.1.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance</b>		DTR-P25CAP081014-P25-0012 (136-174MHz) DTR-P25CAP081014-P25-0013 (UHF-R1 380-470MHz) DTR-P25CAP081014-P25-0011 (UHF-R2 450-520MHz) DTR-P25CAP081014-P25-0014 (700/800MHz)	
<b>PERFORMANCE – Trunked Receiver Tests XTS 2500, XTS 1500 (VHF 136-174, UHF-R1 380-470, UHF-R2 450-520, 700, 800)</b>			
Test Case	Description	Requirement	Results
2.1.4	Reference Sensitivity	≤ -116 dBm	P1
2.1.5	Faded Reference Sensitivity	≤ -108 dBm	P2
2.1.6	Signal Delay Spread Capability	≥ 50 μs	P3
2.1.7	Adjacent Channel Rejection	≥ 60 dB	P4
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

<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.1.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance</b>		DTR-P25CAP081014-P25-0014 (700/800MHz)	
<b>PERFORMANCE – Trunked Transmitter Tests XTS 2500, XTS 1500 (800MHz)</b>			
Test Case	Description	Requirement	Results
2.2.8	Unwanted Emissions: Adjacent Channel Power Ratio	≥ 67 dB	P
2.2.12	Transmitter Power 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 ≤ fdev ≤ 3111 Hz	P
	Low Level Signal Deviation	848 ≤ fdev ≤ 1037 Hz	P
2.2.16	Modulation Fidelity	≤ 5%	P
2.2.18	Transient Frequency Behavior		
	Time Interval t <sub>1</sub> = 20.0 ms	{Δf} ≤ 12.5 kHz	P
	Time Interval t <sub>2</sub> = 50.0 ms	{Δf} ≤ 6.25 kHz	P
	Time Interval t <sub>3</sub> = 10.0 ms	{Δf} ≤ 12.5 kHz	P

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<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.1.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance</b>		DTR-P25CAP081014-P25-0014 (700/800MHz)	
<b>PERFORMANCE – Trunked Transmitter Tests XTS 2500, XTS 1500 (700MHz)</b>			
Test Case	Description	Requirement	Results
<b>2.2.8</b>	Unwanted Emissions: Adjacent Channel Power Ratio		
	Offset From Center Frequency (kHz)	ACPR (dB)	
	9.375	40	P
	15.625, 21.875, 37.5	60	P
	62.5, 87.5, 150, 250, 350	65	P
	>400 kHz to 12 MHz	75	P
	12 MHz to paired RX Band	75	P
	In the Paired RX Band	100	P
<b>2.2.12</b>	Transmitter Power Attack Time	≤ 50 ms	P
	Encoder Attack Time	≤ 100 ms	P
<b>2.2.14</b>	Transmitter Throughput Delay	≤ 125 ms	P
<b>2.2.15</b>	Frequency Deviation for C4FM		
	High Level signal Deviation	$2544 \leq f_{dev} \leq 3111$ Hz	P
	Low Level Signal Deviation	$848 \leq f_{dev} \leq 1037$ Hz	P
<b>2.2.16</b>	Modulation Fidelity	≤ 5%	P
<b>2.2.18</b>	Transient Frequency Behavior		
	Time Interval $t_1 = 20.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P
	Time Interval $t_2 = 50.0$ ms	$\{\Delta f\} \leq 6.25$ kHz	P
	Time Interval $t_3 = 10.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P

<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.1.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance</b>		DTR-P25CAP081014-P25-0013 (UHF-R1 380-470MHz) DTR-P25CAP081014-P25-0011 (UHF-R2 450-520MHz)	
<b>PERFORMANCE – Trunked Transmitter Tests XTS 2500, XTS 1500 (UHF-R1 380-470MHz; UHF-R2 450-520MHz)</b>			
Test Case	Description	Requirement	Results
<b>2.2.8</b>	Unwanted Emissions: Adjacent Channel Power Ratio	≥ 67 dB	P
<b>2.2.12</b>	Transmitter Power Attack Time	≤ 50 ms	P
	Encoder Attack Time	≤ 100 ms	P
<b>2.2.14</b>	Transmitter Throughput Delay	≤ 125 ms	P
<b>2.2.15</b>	Frequency Deviation for C4FM		
	High Level signal Deviation	$2544 \leq f_{dev} \leq 3111$ Hz	P
	Low Level Signal Deviation	$848 \leq f_{dev} \leq 1037$ Hz	P
<b>2.2.16</b>	Modulation Fidelity	≤ 5%	P
<b>2.2.18</b>	Transient Frequency Behavior		
	Time Interval $t_1 = 10.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P
	Time Interval $t_2 = 25.0$ ms	$\{\Delta f\} \leq 6.25$ kHz	P
	Time Interval $t_3 = 10.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P

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<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.1.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance</b>		DTR-P25CAP081014-P25-0012 (136-174MHz)		
<b>PERFORMANCE – Trunked Transmitter Tests XTS 2500, XTS 1500 (VHF 136-174)</b>				
Test Case	Description	Requirement	Results	
2.2.8	Unwanted Emissions: Adjacent Channel Power Ratio	$\geq 67$ dB	P	
2.2.12	Transmitter Power Attack Time	$\leq 50$ ms	P	
		Encoder Attack Time	$\leq 100$ ms	P
2.2.14	Transmitter Throughput Delay	$\leq 125$ ms	P	
2.2.15	Frequency Deviation for C4FM High Level signal Deviation	$2544 \leq f_{dev} \leq 3111$ Hz	P	
		Low Level Signal Deviation	$848 \leq f_{dev} \leq 1037$ Hz	P
2.2.16	Modulation Fidelity	$\leq 5\%$	P	
2.2.18	Transient Frequency Behavior Time Interval $t_1 = 5.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P	
		Time Interval $t_2 = 20.0$ ms	$\{\Delta f\} \leq 6.25$ kHz	P
		Time Interval $t_3 = 5.0$ ms	$\{\Delta f\} \leq 12.5$ kHz	P

<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.1.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance</b>		DTR-P25CAP081014-P25-0014 (700/800MHz)		
<b>PERFORMANCE – Trunked Subscriber Tests XTS 2500, XTS 1500 (700/800MHz)</b>				
Test Case	Description	Requirement	Results	
2.3.1	Trunking Control Channel Slot Time (45 ms slot) Encode Attack Time	$2.00\text{ms} \leq t \leq 11.65\text{ms}$	P	
		RF Power Attack Time	$0.00\text{ms} \leq t \leq 11.65\text{ms}$	P
		RF Power Turn Off Time	$\leq 1.57$ ms	P
		2.3.2	Trunking Request Time	$\leq 167.5$ ms
2.3.3	Trunking Voice Access Time	$\leq 590$ ms	P5	
2.3.5	Transmit Time to Key on Traffic Channel	$\leq 150.0$ ms	P	

<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.1.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance</b>		DTR-P25CAP081014-P25-0010 (UHF-R1 380-470MHz) DTR-P25CAP081014-P25-0008 (UHF-R2 450-520MHz)		
<b>PERFORMANCE – Trunked Subscriber Tests XTS 2500, XTS 1500 (UHF-R1 380-470MHz; UHF-R2 450-520MHz)</b>				
Test Case	Description	Requirement	Results	
2.3.1	Trunking Control Channel Slot Time (45 ms slot) Encode Attack Time	$2.00\text{ms} \leq t \leq 11.65\text{ms}$	P	
		RF Power Attack Time	$0.00\text{ms} \leq t \leq 11.65\text{ms}$	P
		RF Power Turn Off Time	$\leq 1.57$ ms	P
		2.3.2	Trunking Request Time	$\leq 167.5$ ms
2.3.3	Trunking Voice Access Time	$\leq 490$ ms	P5	
2.3.5	Transmit Time to Key on Traffic Channel	$\leq 150.0$ ms	P	

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<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.1.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance</b>		DTR-P25CAP081014-P25-0012 (136-174MHz)	
<b>PERFORMANCE – Trunked Subscriber Tests XTS 2500, XTS 1500 (VHF 136-174)</b>			
<b>Test Case</b>	<b>Description</b>	<b>Requirement</b>	<b>Results</b>
<b>2.3.1</b>	Trunking Control Channel Slot Time (45 ms slot)		
	Encode Attack Time	$2.00\text{ms} \leq t \leq 11.65\text{ms}$	P
	RF Power Attack Time	$0.00\text{ms} \leq t \leq 11.65\text{ms}$	P
	RF Power Turn Off Time	$\leq 1.57 \text{ ms}$	P
<b>2.3.2</b>	Trunking Request Time	$\leq 167.5 \text{ ms}$	P
<b>2.3.3</b>	Trunking Voice Access Time	$\leq 577 \text{ ms}$	P5
<b>2.3.5</b>	Transmit Time to Key on Traffic Channel	$\leq 150.0 \text{ ms}$	P



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### Interoperability Test Cases and Results

P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.3.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability		DTR- TIMCO0810 16 XTS	DTR- P25CAP08 1017 - 1110120 M01	DTR- P25CAP081 015 -3206	DTR- P25CAP081 015 -3212	DTR- TIMCO0810 16 XTS5000	DTR- P25CAP081 010 - 09111601
Motorola Solutions Model Class XTS2500, XTS1500 Subscribers		Motorola Astro 25 System	Harris System	Tait/EADS COR P25 Network	Cassidian COR P25 TB5000i	Power Trunk25 System	EFJ System
Test Case	Description	Results					
<b>2.2.1</b>	<b>Full Registration</b>						
<b>2.2.1.4.1</b>	Test Case 1 - Valid Registration						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.1.4.2</b>	Test Case 2 – Denied or Refused Registration						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.1.4.3</b>	Test Case 3 – Unverified Registration						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.2</b>	<b>Group Voice Call</b>						
<b>2.2.2.4.1</b>	Test Case 1 - Group Call Granted						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.2.4.2</b>	Test Case 2 - Group Call Denied						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.2.4.3</b>	Test Case 3 - Group Call Request Queued						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3

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P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.3.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability		DTR-TIMCO0810 16 XTS	DTR-P25CAP08 1017 - 1110120 M01	DTR-P25CAP081 015 -3206	DTR-P25CAP081 015 -3212	DTR-TIMCO0810 16 XTS5000	DTR-P25CAP081 010 - 09111601
Motorola Solutions Model Class XTS2500, XTS1500 Subscribers		Motorola Astro 25 System	Harris System	Tait/EADS COR P25 Network	Cassidian COR P25 TB5000i	Power Trunk25 System	EFJ System
Test Case	Description	Results					
<b>2.2.3</b>	<b>Unit-to-Unit Voice Call</b>						
<b>2.2.3.4.1</b>	Test Case 1 - Unit-to-Unit Call with Target Availability Check						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.3.4.2</b>	Test Case 2 - Unit-to-Unit Call with Target Availability Check Denied by Target						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.3.4.3</b>	Test Case 3 - Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment After Target Availability Check						
	Home Configuration	P	P	N/A2	N/A2	N4	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.3.4.4</b>	Test Case 4 - Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment Before Target Availability Check						
	Home Configuration	N/A1	N/A1	P	P	P	N/A1
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3

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Summary Test Report

XTS 2500, XTS 1500 Portable Subscribers

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P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.3.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability		DTR-TIMCO0810 16 XTS	DTR-P25CAP08 1017 - 1110120 M01	DTR-P25CAP081 015 -3206	DTR-P25CAP081 015 -3212	DTR-TIMCO0810 16 XTS5000	DTR-P25CAP081 010 - 09111601
Motorola Solutions Model Class XTS2500, XTS1500 Subscribers		Motorola Astro 25 System	Harris System	Tait/EADS COR P25 Network	Cassidian COR P25 TB5000i	Power Trunk25 System	EFJ System
Test Case	Description	Results					
<b>2.2.3.4.5</b>	Test Case 5 - Unit-to-Unit Call without Target Availability Check						
	Home Configuration	N1	N1	N1	N1	N5	N1
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.3.4.6</b>	Test Case 6 - Unit-to-Unit Call Queued without Target Availability Check						
	Home Configuration	N1	N1	N1	N1	N5	N1
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.3.4.7</b>	Test Case 7 - Unit-to-Unit Call Denied						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.4</b>	<b>Broadcast Voice Call</b>						
<b>2.2.4.4.1</b>	Test Case 1 - Broadcast Voice Call						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.5</b>	<b>Affiliation</b>						
<b>2.2.5.4.1</b>	Test Case 1 - Radio Permitted to Affiliate with New Group						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3

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P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.3.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability		DTR-TIMCO0810 16 XTS	DTR-P25CAP08 1017 - 1110120 M01	DTR-P25CAP081 015 -3206	DTR-P25CAP081 015 -3212	DTR-TIMCO0810 16 XTS5000	DTR-P25CAP081 010 - 09111601
Motorola Solutions Model Class XTS2500, XTS1500 Subscribers		Motorola Astro 25 System	Harris System	Tait/EADS COR P25 Network	Cassidian COR P25 TB5000i	Power Trunk25 System	EFJ System
Test Case	Description	Results					
<b>2.2.5.4.2</b>	Test Case 2 - Radio Denied Affiliation to New Group						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.6</b>	<b>Announcement Group Call</b>						
<b>2.2.6.4.1</b>	Test Case 1 - Collection of Talk Groups Receive Call						
	Home Configuration	P	P	P	P	N6	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.7</b>	<b>Emergency Alarm</b>						
<b>2.2.7.4.1</b>	Test Case 1 - Emergency Alarm						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.8</b>	<b>Emergency Group Call</b>						
<b>2.2.8.4.1</b>	Test Case 1 - Emergency Call						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3

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<b>P25-CAB-CAI_TEST_REQ – March 2010, Section 2.1.3.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability</b>		DTR-TIMCO0810 16 XTS	DTR-P25CAP08 1017 - 1110120 M01	DTR-P25CAP081 015 -3206	DTR-P25CAP081 015 -3212	DTR-TIMCO0810 16 XTS5000	DTR-P25CAP081 010 - 09111601
<b>Motorola Solutions Model Class XTS2500, XTS1500 Subscribers</b>		Motorola Astro 25 System	Harris System	Tait/EADS COR P25 Network	Cassidian COR P25 TB5000i	Power Trunk25 System	EFJ System
<b>Test Case</b>	<b>Description</b>	<b>Results</b>					
<b>2.2.10</b>	<b>Encryption</b>						
<b>2.2.10.4.1</b>	Test Case 1 - Call Privacy for Encrypted Call						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3
<b>2.2.11</b>	<b>Intra-Location Registration Area Roaming</b>						
<b>2.2.11.4.1</b>	Test Case 1 - Idle Radio						
	Home Configuration	P	P	P	P	P	P
	Inter-System Roaming Configuration	N2	N2	N2	N2	N2	N2
	Inter-WACN Roaming Configuration	N3	N3	N3	N3	N3	N3

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### Summary Test Report

XTS 2500, XTS 1500 Portable Subscribers

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<b>Model Class: XTS2500, XTS1500 Portable Subscribers</b>	
<b>Product Name, Definition and Unique ID</b>	<b>Model Number and Installed Options</b>
<b>700/800 MHz</b>	
XTS2500 700/800MHz Portable; Firmware/DSP: R12 thru R19	H46UCC9PW5-N, H46UCD9PW5-N, H46UCF9PW6-N, H46UCH9PW7-N Options: Trunking and Encryption
XTS1500 700/800MHz Portable Firmware/DSP: R12 thru R19	H66UCC9PW5-N, H66UCD9PW5-N Options: Trunking
<b>VHF</b>	
XTS2500 VHF Portable; Firmware/DSP: R12 thru R19	H46KDC9PW5-N, H46KDD9PW5-N, H46KDF9PW6-N, H46KDH9PW7-N Options: Trunking and Encryption
XTS1500 VHF Portable Firmware/DSP: R12 thru R19	H66KDC9PW5-N, H66KDD9PW5-N Options: Trunking
<b>UHF-R1</b>	
XTS2500 UHF R1 Portable; Firmware/DSP: R12 thru R19	H46QDC9PW5-N, H46QDD9PW5-N, H46QDF9PW6-N, H46QDH9PW7-N Options: Trunking and Encryption
XTS1500 UHF R1 Portable Firmware/DSP: R12 thru R19	H66QDC9PW5-N H66QDD9PW5-N Options: Trunking
<b>UHF-R2</b>	
XTS2500 UHF R2 Portable; Firmware/DSP: R12 thru R19	H46SDC9PW5-N, H46SDD9PW5-N, H46SDF9PW6-N, H46SDH9PW7-N Options: Trunking and Encryption
XTS1500 UHF R2 Portable Firmware/DSP: R12 thru R19	H66SDC9PW5-N, H66SDD9PW5-N Options: Trunking

<b>Model Class: ASTRO 25 System</b>	
<b>Product Name, Definition and Unique ID</b>	<b>Model Number and Installed Options</b>
Motorola ASTRO 25 Trunked System	Release 7.7
Motorola ASTRO 25 Trunked System	Release 7.8
Motorola ASTRO 25 Trunked System	Release 7.9
Motorola ASTRO 25 Trunked System	Release 7.11
Motorola ASTRO 25 Trunked System	Release 7.13

<b>Test Case Result Definitions</b>	
<b>No Test Performed</b>	---
<b>Test Does Not Apply to the Test Object</b>	N/A
<b>Test Object Meets Requirements</b>	P (Pass)
<b>Test Object Does Not Meet Requirements</b>	F (Fail)
<b>Test Object is Not Conclusive</b>	I (Inconclusive)
<b>Comments</b>	
P1: Motorola subscriber passes Reference Sensitivity ( $\leq -116$ dBm) specification for C4FM (Non-Simulcast) and Simulcast modulations.	
P2: Motorola subscriber passes Faded Reference Sensitivity ( $\leq -108$ dBm) specification for C4FM (Non-Simulcast) and Simulcast modulations.	
P3: Motorola subscriber passes Signal Delay Spread Capability specification for C4FM (Non-Simulcast) ( $\geq 50$ $\mu$ s) and Simulcast ( $\geq 80$ $\mu$ s) modulations.	
P4: Motorola subscriber passes Adjacent Channel Rejection ( $\geq 60$ dB) specification for C4FM (Non-Simulcast) and Simulcast modulations.	
P5: Trunking Voice Access Time will vary dependent on actual system design and implementation.	
P6: The XTS 2500 portable supports encryption. The XTS 1500 portable does not support encryption. Please see XTS Model Class table to identify the XTS 1500 models that do not support encryption.	

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### Summary Test Report

XTS 2500, XTS 1500 Portable Subscribers

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N1: Motorola Subscribers do not support unit-to-unit call without target availability check.
N2: Motorola, Harris, Tait/EADS Infrastructures and Motorola Subscribers do not support the Inter-System Roaming Configuration.
N3: Motorola, Harris, Tait/EADS Infrastructures and Motorola Subscribers do not support Inter-WACN Roaming Configurations.
N4: PowerTrunk25 FNE does not support checking for destination availability if no channel traffic resources are available.
N5: PowerTrunk25 FNE does not support unit to unit call without target availability check.
N6: PowerTrunk25 FNE does not support announcement group call.
N/A1: Test Case 2.2.3.4.4 is not applicable for Motorola subscribers on Motorola, Harris and EFJ infrastructures; see results of test case 2.2.3.4.3.
N/A2: Test Case 2.2.3.4.3 is not applicable for Motorola subscribers on Tait/EADS, Cassidian, PowerTrunk infrastructures; see results of test case 2.2.3.4.4.

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**OMB NO:** 1640-0015

**EXPIRATION DATE:** 07/31/2015

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