

## **Project 25 Compliance Assessment Program**

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

#### SUPPLIER

<b>Supplier Info</b>	<b>Detail</b>
<b>Name:</b>	AIRBUS DS COMMUNICATIONS (AIRBUS DSC)
<b>Contact:</b>	John Szpak (469) 365-4980

#### PRODUCT

<b>Product Info</b>	<b>Detail</b>
<b>Product Name:</b>	Airbus DSC TB5500I Series Fixed Base Station/Repeater with VESTA Radio Software
<b>Installed Hardware Options:</b>	Trunking, Trunking Control Channel, Trunking Traffic Channel, Conventional
<b>Installed Hardware Options:</b>	Airbus DSC P25 VESTA Radio Infrastructure TBCB1A (136-174 MHz 50 Watts)
<b>Installed Software Options:</b>	Airbus DSC P25 VESTA Radio V11_06(V2.05), V11_07 (V2.06), V11_08(V2.07)
<b>Installed Vocoder:</b>	Baseline with System Improvements utilized for interoperability tests, no vocoder in base station/repeater

<b>Product Info</b>	<b>Detail</b>
<b>Product Name:</b>	Airbus DSC TB5500I Series Fixed Base Station/Repeater with VESTA Radio Software
<b>Installed Hardware Options:</b>	Trunking, Trunking Control Channel, Trunking Traffic Channel, Conventional
<b>Installed Hardware Options:</b>	Airbus DSC P25 VESTA Radio Infrastructure TBCB1A (136-174 MHz 100 Watts)
<b>Installed Software Options:</b>	Airbus DSC P25 VESTA Radio V11_06(V2.05), V11_07 (V2.06), V11_08(V2.07)
<b>Installed Vocoder:</b>	Baseline with System Improvements utilized for interoperability tests, no vocoder in base station/repeater

**August 8, 2017**

Page 1 of 19

## Project 25 Compliance Assessment Program

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

Product Info	Detail
Product Name:	Airbus DSC TB5500I Series Fixed Base Station/Repeater with VESTA Radio Software
Installed Hardware Options:	Trunking Trunking Control Channel, Trunking Traffic Channel, Conventional
Installed Hardware Options:	Airbus DSC P25 VESTA Radio Infrastructure TBCB1A (762-870 MHz 100 Watts)
Installed Software Options:	Airbus DSC P25 VESTA Radio V11_06(V2.05), V11_07 (V2.06), V11_08(V2.07)
Installed Vocoder:	Baseline with System Improvements

#### TESTS

Description
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.1.1 – Project 25 Phase 1 Common Air Interface Conventional Base Station/Repeater Performance
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.1.2 – Project 25 Phase 1 Common Air Interface Trunked Base Station/Repeater Performance
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.3.2 – Project 25 Phase 1 Common Air Interface Conventional Base Station/Repeater Interoperability
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.3.2 – Project 25 Phase 1 Common Air Interface Trunked Base Station/Repeater Interoperability

#### LABORATORY INFORMATION

Laboratory	Details
P25 CAP Laboratory Code:	P25CAP081015, Tait Electronics Ltd Teltest Laboratories
Date(s) of Test:	Nov. 15, 2013 to Nov.20, 2013
Detailed Test Report:	DTR-P25CAP081015-3528
Date of Issue:	Nov. 25, 2013 (TBCB1A)
Date(s) of Test:	Nov. 10, 2013 to Nov.15, 2013:
Detailed Test Report:	DTR-P25CAP081015-3516
Date of Issue:	Nov. 20, 2013 (TBCB1B)
Date(s) of Test:	Nov. 15, 2013 to Nov.20, 2013:
Detailed Test Report:	DTR-P25CAP081015-3434
Date of Issue:	Nov. 18, 2013

August 8, 2017

Page 2 of 19

## Project 25 Compliance Assessment Program

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

Laboratory	Details
<b>P25 CAP Laboratory Code:</b>	P25CAPTIMCO081016, TIMCO Engineering Inc.
<b>Date(s) of Test:</b>	Oct. 18, 2013:
<b>Detailed Test Report:</b>	DTR-TIMCO081016 TAIT/CASSIDIAN/HARRIS
<b>Date of Issue:</b>	Nov. 7, 2013
<b>Date(s) of Test:</b>	Oct. 16, 2013
<b>Detailed Test Report:</b>	DTR-TIMCO081016 TAIT/CASSIDIAN/KENWOOD
<b>Date of Issue:</b>	Oct. 29, 2013
<b>Date(s) of Test:</b>	Oct. 18, 2013
<b>Detailed Test Report:</b>	DTR-TIMCO081016 TAIT/CASSIDIAN/RELM
<b>Date of Issue:</b>	Nov. 29, 2013

#### NORMATIVE REFERENCES

Date	Title
August 2016	P25-CAB-CAI_TEST_REQ August 2016

#### RECEIVER PERFORMANCE TESTING (136-174, 762-805 MHZ, 806-870 MHZ) – CONVENTIONAL

Test Identification	Detailed Test Report Identification
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.1.1 – Project 25 Phase 1 Common Air Interface Conventional Base Station/Repeater Performance	DTR-P25CAP081015-3528 DTR-P25CAP081015-3516 DTR-P25CAP081015-3434

Test Case	Description	Requirement	Results
3.1.4	Reference Sensitivity	≤ -116 dBm (Class A)	P
3.1.5	Faded Reference Sensitivity	≤ -108 dBm (Class A)	P
3.1.7.1	Adjacent Channel Rejection	≥ 60 dB (Class A)	P
3.1.8	Co-Channel Rejection – C4FM	≤ 9 dB	P
3.1.8	Co-Channel Rejection – Standard Simulcast	≤ 9 dB	P
3.1.9	Spurious Response Rejection	≥ 90 dB (Class A)	P
3.1.10	Intermodulation Rejection – C4FM	≥ 80 dB (Class A)	P
3.1.10	Intermodulation Rejection – Standard Simulcast	≥ 80 dB (Class A)	P
3.1.11	Signal Displacement Bandwidth	≥ 1000 Hz	P

August 8, 2017

3 of 19

## Project 25 Compliance Assessment Program

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

Test Case	Description	Requirement	Results
3.1.17	Late Entry Unsilence Delay No Talk Group or Encryption	$\leq 125$ ms	U1
3.1.17	Late Entry Unsilence Delay: Talk Group Only, Unencrypted Transmission	$\leq 370$ ms	U1
3.1.17	Late Entry Unsilence Delay: Encryption Only, Encrypted Transmission	$\leq 370$ ms	U1
3.1.17	Late Entry Unsilence Delay: Both Talk Group and Encryption, Encrypted Transmission	$\leq 460$ ms	U1
3.1.18	Receiver Throughput Delay	$\leq 125$ ms	U1

#### TRANSMITTER PERFORMANCE TESTING (136-174 MHz) – CONVENTIONAL

Test Identification	Detailed Test Report Identification
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.1.1 – Project 25 Phase 1 Common Air Interface Conventional Base Station/Repeater Performance	DTR-P25CAP081015-3528 DTR-P25CAP081015-3516

Test Case	Description	Requirement	Results
3.2.8	Unwanted Emissions: Non-Spurious Adjacent Channel Power Ratio	$\geq 67$ dB	P
3.2.14	Transmitter Throughput Delay	$\leq 125$ ms	U1
3.2.15	Frequency Deviation for C4FM: High Level Signal Deviation	$2544 < f_{dev} \leq 3111$ Hz	P
3.2.15	Frequency Deviation for C4FM: Low Level Signal Deviation	$848 < f_{dev} \leq 1037$ Hz	P
3.2.16	Modulation Fidelity - C4FM	$\leq 5\%$ (Class A)	P
3.2.16	Modulation Fidelity - CQPSK	$\leq 5\%$ (Class A)	U
3.2.16	Modulation Fidelity – Standard Simulcast	$\leq 5\%$ (Class A)	P
3.2.18	Transient Frequency Behavior Time Interval $t_1 = 5$ ms	$ \Delta f  \leq 12.5$ kHz	P
3.2.18	Transient Frequency Behavior Time Interval $t_2 = 20$ ms	$ \Delta f  \leq 6.25$ kHz	P
3.2.18	Transient Frequency Behavior Time Interval $t_3 = 5$ ms	$ \Delta f  \leq 12.5$ kHz	P

August 8, 2017

4 of 19

## Project 25 Compliance Assessment Program

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

#### TRANSMITTER PERFORMANCE TESTING (762-805 MHz) – CONVENTIONAL

Test Identification	Detailed Test Report Identification
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.1.1 – Project 25 Phase 1 Common Air Interface Conventional Base Station/Repeater Performance	DTR-P25CAP081015-3434

#### Test Case 2.2.8 – Unwanted Emissions: Adjacent Channel Power Ratio - 762-805 MHz

Test Case	Offset from Center Frequency (KHz)	Measurement Bandwidth (KHz)	ACPR (dB)	Results
3.2.8.2	9.375	6.25	≥ 40	P
3.2.8.2	15.625	6.25	≥ 60	P
3.2.8.2	21.875	6.25	≥ 60	P
3.2.8.2	37.5	25	≥ 60	P
3.2.8.2	62.5	25	≥ 65	P
3.2.8.2	87.5	25	≥ 65	P
3.2.8.2	150	100	≥ 65	P
3.2.8.2	250	100	≥ 65	P
3.2.8.2	350	100	≥ 65	P
3.2.8.2	> 400 KHz to 12 MHz	30 (s)	≥ 80	P
3.2.8.2	12 MHz to paired receive band	30 (s)	≥ 80	P
3.2.8.2	In paired receive band	30 (s)	≥ 100	P

Test Case	Description	Requirement	Results
3.2.14	Transmitter Throughput Delay	≤ 125 ms	U1
3.2.15	Frequency Deviation for C4FM: High-Level Signal Deviation	$2544 < f_{dev} \leq 3111$ Hz	P
3.2.15	Frequency Deviation for C4FM: Low-Level Signal Deviation	$848 < f_{dev} \leq 1037$ Hz	P
3.2.16	Modulation Fidelity – C4FM	≤ 5% (Class A)	P
3.2.16	Modulation Fidelity – CQPSK	≤ 5% (Class A)	U
3.2.16	Modulation Fidelity – Standard Simulcast	≤ 5% (Class A)	P
3.2.18	Transient Frequency Behavior: Time Interval $t_1 = 20$ ms	$ \Delta f  \leq 12.5$ kHz	P

August 8, 2017

5 of 19

## Project 25 Compliance Assessment Program

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

Test Case	Description	Requirement	Results
3.2.18	Transient Frequency Behavior: Time Interval $t_2 = 50$ ms	$ \Delta f  \leq 6.25$ kHz	P
3.2.18	Transient Frequency Behavior: Time Interval $t_3 = 10$ ms	$ \Delta f  \leq 12.5$ kHz	P

#### TRANSMITTER PERFORMANCE TESTING (806-870 MHZ) – CONVENTIONAL

Test Identification	Detailed Test Report Identification
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.1.1 – Project 25 Phase 1 Common Air Interface Conventional Base Station/Repeater Performance	DTR-P25CAP081015-3434

Test Case	Description	Requirement	Results
3.2.8	Unwanted Emissions: Non-Spurious Adjacent Channel Power Ratio	$\geq 67$ dB	P
3.2.14	Transmitter Throughput Delay	$\leq 125$ ms	U1
3.2.15	Frequency Deviation for C4FM: High Level Signal Deviation	$2544 < f_{dev} \leq 3111$ Hz	P
3.2.15	Frequency Deviation for C4FM: Low Level Signal Deviation	$848 < f_{dev} \leq 1037$ Hz	P
3.2.16	Modulation Fidelity - C4FM	$\leq 5\%$ (Class A)	P
3.2.16	Modulation Fidelity - CQPSK	$\leq 5\%$ (Class A)	U
3.2.16	Modulation Fidelity – Standard Simulcast	$\leq 5\%$ (Class A)	P
3.2.18	Transient Frequency Behavior Time Interval $t_1 = 20$ ms	$ \Delta f  \leq 12.5$ kHz	P
3.2.18	Transient Frequency Behavior Time Interval $t_2 = 50$ ms	$ \Delta f  \leq 6.25$ kHz	P
3.2.18	Transient Frequency Behavior Time Interval $t_3 = 10$ ms	$ \Delta f  \leq 12.5$ kHz	P

August 8, 2017

## Project 25 Compliance Assessment Program

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

#### RECEIVER PERFORMANCE TESTING (136-174 MHZ, 762-805 MHZ, 806-870 MHZ) – TRUNKED

Test Identification	Detailed Test Report Identification
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.1.2 – Project 25 Phase 1 Common Air Interface Trunked Mode Base Station/Repeater Performance	DTR-P25CAP081015-3528 DTR-P25CAP081015-3516 DTR-P25CAP081015-3434

Test Case	Description	Requirement	Results
3.1.4	Reference Sensitivity	≤ -116 dBm (Class A)	P
3.1.5	Faded Reference Sensitivity	≤ -108 dBm (Class A)	P
3.1.7.1	Adjacent Channel Rejection – C4FM	≥ 60 dB (Class A)	P
3.1.7.2	Offset Adjacent Channel Rejection – C4FM	≥ 47 dB (Class A)	P
3.1.7.2	Offset Adjacent Channel Rejection – Standard Simulcast	≥ 47 dB (Class A)	P
3.1.8	Co-Channel Rejection – C4FM	≤ 9 dB	P
3.1.8	Co-Channel Rejection – Standard Simulcast	≤ 9 dB	P
3.1.9	Spurious Response Rejection	≥ 90 dB (Class A)	P
3.1.10	Intermodulation Rejection – C4FM	≥ 80 dB (Class A)	P
3.1.10	Intermodulation Rejection – Standard Simulcast	≥ 80 dB (Class A)	P
3.1.11	Signal Displacement Bandwidth	≥ 1000 Hz	P

#### TRANSMITTER PERFORMANCE TESTING (136-174 MHZ) – TRUNKED

Test Identification	Detailed Test Report Identification
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.1.2 – Project 25 Phase 1 Common Air Interface Trunked Mode Base Station/Repeater Performance	DTR-P25CAP081015-3528 DTR-P25CAP081015-3516

Test Case	Description	Requirement	Results
3.2.8	Unwanted Emissions: Non-Spurious Adjacent Channel Power Ratio	≥ 67 dB	P
3.2.14	Transmitter Throughput Delay	≤ 125 ms	U1
3.2.15	Frequency Deviation for C4FM: High Level Signal Deviation	2544 < f <sub>dev</sub> ≤ 3111 Hz	P
3.2.15	Frequency Deviation for C4FM: Low Level Signal Deviation	848 < f <sub>dev</sub> ≤ 1037 Hz	P

August 8, 2017

7 of 19

## Project 25 Compliance Assessment Program

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

Test Case	Description	Requirement	Results
3.2.16	Modulation Fidelity - C4FM	$\leq 5\%$ (Class A)	P
3.2.16	Modulation Fidelity - CQPSK	$\leq 5\%$ (Class A)	U
3.2.16	Modulation Fidelity – Standard Simulcast	$\leq 5\%$ (Class A)	P
3.2.18	Transient Frequency Behavior Time Interval $t_1 = 5$ ms	$ \Delta f  \leq 12.5$ kHz	P
3.2.18	Transient Frequency Behavior Time Interval $t_2 = 20$ ms	$ \Delta f  \leq 6.25$ kHz	P
3.2.18	Transient Frequency Behavior Time Interval $t_3 = 5$ ms	$ \Delta f  \leq 12.5$ kHz	P

#### TRANSMITTER PERFORMANCE TESTING (762-805 MHZ) – TRUNKED

Test Identification	Detailed Test Report Identification
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.1.2 – Project 25 Phase 1 Common Air Interface Trunked Mode Base Station/Repeater Performance	DTR-P25CAP081001-3434

#### Test Case 2.2.8 – Unwanted Emissions: Adjacent Channel Power Ratio

Test Case	Offset from Center Frequency (KHz)	Measurement Bandwidth (KHz)	ACPR (dB)	Results
3.2.8.2	9.375	6.25	$\geq 40$	P
3.2.8.2	15.625	6.25	$\geq 60$	P
3.2.8.2	21.875	6.25	$\geq 60$	P
3.2.8.2	37.5	25	$\geq 60$	P
3.2.8.2	62.5	25	$\geq 65$	P
3.2.8.2	87.5	25	$\geq 65$	P
3.2.8.2	150	100	$\geq 65$	P
3.2.8.2	250	100	$\geq 65$	P
3.2.8.2	350	100	$\geq 65$	P
3.2.8.2	> 400 KHz to 12 MHz	30 (s)	$\geq 80$	P
3.2.8.2	12 MHz to paired receive band	30 (s)	$\geq 80$	P
3.2.8.2	In paired receive band	30 (s)	$\geq 100$	P

August 8, 2017

8 of 19



## Project 25 Compliance Assessment Program

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

Test Case	Description	Requirement	Results
3.2.14	Transmitter Throughput Delay	$\leq 125$ ms	U1
3.2.15	Frequency Deviation for C4FM: High-Level Signal Deviation	$2544 < f_{\text{dev}} \leq 3111$ Hz	P
3.2.15	Frequency Deviation for C4FM: Low-Level Signal Deviation	$848 < f_{\text{dev}} \leq 1037$ Hz	P
3.2.16	Modulation Fidelity – C4FM	$\leq 5\%$ (Class A)	P
3.2.16	Modulation Fidelity – CQPSK	$\leq 5\%$ (Class A)	U
3.2.16	Modulation Fidelity – Standard Simulcast	$\leq 5\%$ (Class A)	P
3.2.18	Transient Frequency Behavior: Time Interval $t_1 = 20$ ms	$ \Delta f  \leq 12.5$ kHz	P
3.2.18	Transient Frequency Behavior: Time Interval $t_2 = 50$ ms	$ \Delta f  \leq 6.25$ kHz	P
3.2.18	Transient Frequency Behavior: Time Interval $t_3 = 10$ ms	$ \Delta f  \leq 12.5$ kHz	P

#### TRANSMITTER PERFORMANCE TESTING (806-870 MHZ) – TRUNKED

Test Identification	Detailed Test Report Identification
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.1.2 – Project 25 Phase 1 Common Air Interface Trunked Mode Base Station/Repeater Performance	DTR-P25CAP081001-3434

Test Case	Description	Requirement	Results
3.2.8	Unwanted Emissions: Adjacent Channel Power Ratio	$\geq 67$ dB	P
3.2.14	Transmitter Throughput Delay	$\leq 125$ ms	U1
3.2.15	Frequency Deviation for C4FM: High-Level Signal Deviation	$2544 < f_{\text{dev}} \leq 3111$ Hz	P
3.2.15	Frequency Deviation for C4FM: Low-Level Signal Deviation	$848 < f_{\text{dev}} \leq 1037$ Hz	P
3.2.16	Modulation Fidelity – C4FM	$\leq 5\%$ (Class A)	P
3.2.16	Modulation Fidelity – CQPSK	$\leq 5\%$ (Class A)	U
3.2.16	Modulation Fidelity – Standard Simulcast	$\leq 5\%$ (Class A)	P
3.2.18	Transient Frequency Behavior: Time Interval $t_1 = 20$ ms	$ \Delta f  \leq 12.5$ kHz	P

August 8, 2017

## Project 25 Compliance Assessment Program

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

Test Case	Description	Requirement	Results
3.2.18	Transient Frequency Behavior: Time Interval $t_2 = 50$ ms	$ \Delta f  \leq 6.25$ kHz	P
3.2.18	Transient Frequency Behavior: Time Interval $t_3 = 10$ ms	$ \Delta f  \leq 12.5$ kHz	P

#### TRUNKED MODE INFRASTRUCTURE TESTING (136-174, 762-805 MHZ, 806-870 MHZ)

Test Identification	Detailed Test Report Identification
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.1.2 – Project 25 Phase 1 Common Air Interface Trunked Mode Base Station/Repeater Performance	DTR-P25CAP081015-3528 DTR-P25CAP081015-3516 DTR-P25CAP081015-3434

#### TEST CASE 2.3.3 – TRUNKING VOICE ACCESS TIME

Test Case	Description	Requirement	Results
2.3.4	Non-Simulcast time to grant limits - 37.5 ms ISP	Single TSBK $\leq 337.5$ ms	P
2.3.4	Non-Simulcast time to grant limits - 37.5 ms ISP	Double TSBK $\leq 354$ ms	P
2.3.4	Non-Simulcast time to grant limits - 37.5 ms ISP	Triple TSBK $\leq 366.5$ ms	P
2.3.4	Non-Simulcast time to grant limits – 45 ms ISP	Single TSBK $\leq 345$ ms	P
2.3.4	Non-Simulcast time to grant limits – 45 ms ISP	Double TSBK $\leq 361.5$ ms	P
2.3.4	Non-Simulcast time to grant limits – 45 ms ISP	Triple TSBK $\leq 374$ ms	P
2.3.4	LSM-Simulcast time to grant limits - 37.5 ms ISP	Single TSBK $\leq 487.5$ ms	P
2.3.4	LSM-Simulcast time to grant limits - 37.5 ms ISP	Double TSBK $\leq 504$ ms	P
2.3.4	LSM-Simulcast time to grant limits – 37.5 ms ISP	Triple TSBK $\leq 516.5$ ms	P
2.3.4	LSM-Simulcast time to grant limits - 45 ms ISP	Single TSBK $\leq 495$ ms	P
2.3.4	LSM-Simulcast time to grant limits - 45 ms ISP	Double TSBK $\leq 511.5$ ms	P
2.3.4	LSM-Simulcast time to grant limits - 45 ms ISP	Triple TSBK $\leq 524$ ms	P

August 8, 2017

10 of 19

## Project 25 Compliance Assessment Program

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

#### OTHER DEVICES TESTED FOR INTEROPERABILITY - CONVENTIONAL

Supplier and Contact	Product Name, Definition, Unique ID	Installed Hardware Options	Installed Software Options
SU Manufacturer 1	U4	U4	U4
SU Manufacturer 2	U4	U4	U4
SU Manufacturer 3	U4	U4	U4

#### TRANSMITTER INTEROPERABILITY TESTING (136-174, 762-805 MHZ, 806-870 MHZ) – CONVENTIONAL

Test Identification	Product
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.3.1 – Project 25 Phase 1 Common Air Interface Conventional Base Station/Repeater Interoperability	Airbus DSC TB5500I Series Fixed Base Station/Repeater with VESTA Radio Software TBCB1A (136-174 MHz 50 Watts) TBCB1A (136-174 MHz 100 Watts) TBCB1A (762-870 MHz 100 Watts)
All test cases 2.4.1 through 2.4.14, 2.5.1 through 2.5.6, for REPEAT MODE (SU-TO-FNE-TO-SU)	U4
All test cases 2.6.6, and 2.7.1 through 2.7.9 for FNE INCLUDES DISPATCH CONSOLES MODE (SU-TO-FNE-TO-SU)	U

#### OTHER DEVICES TESTED FOR INTEROPERABILITY - TRUNKED

Supplier and Contact	Product Name, Definition, Unique ID	Installed Hardware Options	Installed Software Options
Harris Corp. , RF Communications Tim Garrett – (434) 445-9564	TP7300 Portable	Rev. B	XGP R01A
Kenwood USA Corporation Don Wingo – (678) 474-4719	P25 TK-5410D Portable	3	G5.23.00
Relm Wireless Corporation Jim Holthaus – (402) 990-1551	KNG Series (P800) Portable	1.0	5.0.0

August 8, 2017

11 of 19

**Project 25 Compliance Assessment Program**

SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

**INTEROPERABILITY TESTING (136-174 MHZ, 762-805 MHZ, 806-870 MHZ) – TRUNKED SYSTEM CONFIGURED AS HOME SYSTEM TO SUs UNDER TEST**

<b>Test Identification</b>	<b>Product</b>
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.3.3 – Project 25 Phase 1 Common Air Interface Trunked Trunked Base Station/Repeater Interoperability	Airbus DSC TB5500I Series Fixed Base Station/Repeater with VESTA Radio Software TBCB1A (136-174 MHz 50 Watts) TBCB1A (136-174 MHz 100 Watts) TBCB1A (762-870 MHz 100 Watts)

<b>Product</b>	<b>Detailed Test Report Identification</b>
Kenwood USA Corporation Don Wingo – 678-474-4719	DTR-TIMCO081016 TAIT/CASSIDIAN/KENWOOD
Harris Corp. , RF Communications Tim Garrett – (434) 445-9564	DTR-TIMCO081016 TAIT/CASSIDIAN/HARRIS
Relm Wireless Corporation Jim Holthaus – 402 990 1551	DTR-TIMCO081016 TAIT/CASSIDIAN/RELM

**August 8, 2017**

**Project 25 Compliance Assessment Program**

SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

Test Case	Description	Harris P7300	Kenwood TK-5410D	Relm KNG-P800
<b>2.2.1</b>	<b>Full Registration</b>			
2.2.1.4.1	Test Case 1 – Valid Registration	P	P	P
2.2.1.4.2	Test Case 2 – Denied or Refused Registration	P	P	P
2.2.1.4.3	Test Case 3 – Unverified Registration	P	P	P
<b>2.2.2</b>	<b>Group Voice Call</b>			
2.2.2.4.1	Test Case 1 – Group Call Granted	P	P	P
2.2.2.4.2	Test Case 2 – Group Call Denied	P	P	P
2.2.2.4.3	Test Case 3 – Group Call Request Queued	P	P	P
<b>2.2.3</b>	<b>Unit-to-Unit Voice Call</b>			
2.2.3.4.1	Test Case 1 – Unit-to-Unit Call with Target Availability Check	P	P	P
2.2.3.4.2	Unit-to-Unit Call with Target Availability Test Case 2 – Check Denied by Target	P	P	P
2.2.3.4.3	Test Case 3 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment After Target Availability Check	U2	U2	U2
2.2.3.4.4	Test Case 4 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment Before Target Availability Check	P	P	P
2.2.3.4.5	Test Case 5 – Unit-to-Unit Call without Target Availability Check	U3	U3	U3
2.2.3.4.6	Test Case 6 – Unit-to-Unit Call Queued without Target Availability Check	U3	U3	U3
2.2.3.4.7	Test Case 7 – Unit-to-Unit Call Denied	P	P	P
<b>2.2.4</b>	<b>Broadcast Voice Call</b>			
2.2.4.4.1	Test Case 1 – Broadcast Voice Call	P	P	P

August 8, 2017

Page 13 of 19

**Project 25 Compliance Assessment Program**

SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

Test Case	Description	Harris P7300	Kenwood TK-5410D	Relm KNG-P800
<b>2.2.5</b>	<b>Affiliation</b>			
2.2.5.4.1	Test Case 1 – Radio Permitted to Affiliate with New Group	P	P	P
2.2.5.4.2	Test Case 2 – Radio Denied Affiliation to New Group	P	P	P
<b>2.2.6</b>	<b>Announcement Group Call</b>			
2.2.6.4.1	Test Case 1 – Collection of Talk Groups Receive Call	P	P	P
<b>2.2.7</b>	<b>Emergency Alarm</b>			
2.2.7.4.1	Test Case 1 – Emergency Alarm	P	P	P
<b>2.2.8</b>	<b>Emergency Group Call</b>			
2.2.8.4.1	Test Case 1 – Emergency Call	P	P	P
<b>2.2.10</b>	<b>Encryption</b>			
2.2.10.4.1	Test Case 1 – Call Privacy for Encrypted Call	P	P	P
<b>2.2.11</b>	<b>Intra-Location Registration Area Roaming</b>			
2.2.11.4.1	Test Case 1 – Idle Radio	P	P	P

August 8, 2017

## Project 25 Compliance Assessment Program

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

#### INTEROPERABILITY TESTING (136-174 MHZ, 762-805 MHZ, 806-870 MHZ) – TRUNKED

THE SYSTEM SERVING SITE IS CONFIGURED FOR INTER-SYSTEM ROAMING TO THE SUs

Test Identification	Product
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.3.3 – Project 25 Phase 1 Common Air Interface Trunked Trunked Base Station/Repeater Interoperability	Airbus DSC TB5500I Series Fixed Base Station/Repeater with VESTA Radio Software TBCB1A (136-174 MHz 50 Watts) TBCB1A (136-174 MHz 100 Watts) TBCB1A (762-870 MHz 100 Watts)
All test cases 2.2.1 through 2.2.11	U

#### INTEROPERABILITY TESTING (136-174 MHZ, 762-805 MHZ, 806-870 MHZ) – TRUNKED

THE SYSTEM SERVING SITE CONFIGURED FOR INTER-WACN ROAMING TO THE SUs

Test Identification	Product
P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.3.3 – Project 25 Phase 1 Common Air Interface Trunked Trunked Base Station/Repeater Interoperability	Airbus DSC TB5500I Series Fixed Base Station/Repeater with VESTA Radio Software TBCB1A (136-174 MHz 50 Watts) TBCB1A (136-174 MHz 100 Watts) TBCB1A (762-870 MHz 100 Watts)
All test cases 2.2.1 through 2.2.11	U

#### MODEL CLASS DEFINITIONS – DEVICE UNDER TEST

Model Class: Airbus DSC TB5500I Series Fixed Base Station/Repeaters with VESTA Radio Software

Model Class	Sub-Class	Installed Options
Airbus DSC TB5500I Series Fixed Base Station/Repeaters with VESTA Radio Software	TBCB1A Fixed Base Station/Repeater (136-174 MHz; 50W)	See Sub-Class for TBCB1A
Airbus DSC TB5500I Series Fixed Base Station/Repeaters with VESTA Radio Software	TBCB1B Fixed Base Station/Repeater (136-174 MHz; 100W)	See Sub-Class for TBCB1B
Airbus DSC TB5500I Series Fixed Base Station/Repeaters with VESTA Radio Software	TBCK4B Fixed Base Station/Repeater (700, 800 MHz; 100W)	See Sub-Class for TBCK4B

August 8, 2017

Page 15 of 19

## Project 25 Compliance Assessment Program

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

#### Model Sub-Class: Airbus DSC TB5500i Fixed Base Station/Repeater, TBCB1A (136-174 MHz 50W)

Product Name, Definition, Firmware	Installed Options
Reciter Model T01-01103-DAAA, SN 18184259, Hardware 00.11, Firmware P25-1.25.00.0006	Options: Trunking, Trunking Control Channel, Conventional
Reciter Model T01-01103-DAAA, SN 18176602, Hardware 00.11, Firmware P25-1.16.01.0001	Options: Trunking, Trunking Traffic Channel
Power Amplifier 50 W Model T01-01121-DAAA, SN 18185223, Hardware 0006, Firmware 1.05.00.0001	Options: Trunking, Trunking Control Channel, Conventional, 50 Watts
Power Amplifier 100 W Model T01-01121-DAAA, SN 18176464, Hardware 0006, Firmware 1.04.00.0001	Options: Trunking, Trunking Traffic Channel
Power Management Unit Model TBA30A0-0100, SN 18184732, Hardware 00.03, Firmware 0316	Options: Trunking, Trunking Control Channel, Conventional
Power Management Unit Model TBA30A0-0100, SN 18176545, Hardware 00.03, Firmware 0315	Options: Trunking, Trunking Traffic Channel
VESTA Radio Software V11_06 (V2.05)	Options: Trunking, Trunking Control Channel, Trunking Traffic Channel, Conventional
VESTA Radio Software V11_07 (V2.06)	Options: Trunking, Trunking Control Channel, Trunking Traffic Channel, Conventional
VESTA Radio Software V11_08 (V2.07)	Options: Trunking, Trunking Control Channel, Trunking Traffic Channel, Conventional

#### Model Sub-Class: Airbus DSC TB5500i Fixed Base Station/Repeater, TBCB1B (136-174 MHz 100W)

Product Name, Definition, Firmware	Installed Options
Reciter Model T01-01103-DAAA, SN 18184260, Hardware 00.11, Firmware P25-1.21.00.0005	Options: Trunking, Trunking Control Channel, Conventional
Reciter Model T01-01103-DAAA, SN 18176602, Hardware 00.11, Firmware P25-1.16.01.0001	Options: Trunking, Trunking Traffic Channel
Power Amplifier 100 W Model T01-01121-DBAA, SN 18184281, Hardware 0006, Firmware 1.04.00.0001	Options: Trunking, Trunking Control Channel, Conventional, 100 Watts
Power Amplifier 100 W Model T01-01121-DBAA, SN 18176464, Hardware 0006, Firmware 1.04.00.0001	Options: Trunking, Trunking Traffic Channel
Power Management Unit Model TBA30A0-0100, SN 18184727, Hardware 00.03, Firmware 0314	Options: Trunking, Trunking Control Channel, Conventional

August 8, 2017

16 of 19



## Project 25 Compliance Assessment Program

### SUMMARY TEST REPORT (STR)

AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER

STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017

Product Name, Definition, Firmware	Installed Options
Power Management Unit Model TBA30A0-0100, SN 18176545, Hardware 00.03, Firmware 0315	Options: Trunking, Trunking Traffic Channel
VESTA Radio Software V11_06 (V2.05)	Options: Trunking, Trunking Control Channel, Trunking Traffic Channel, Conventional
VESTA Radio Software V11_07 (V2.06)	Options: Trunking, Trunking Control Channel, Trunking Traffic Channel, Conventional
VESTA Radio Software V11_08 (V2.07)	Options: Trunking, Trunking Control Channel, Trunking Traffic Channel, Conventional

#### Model Sub-Class: Airbus DSC TB5500i Fixed Base Station/Repeater, TBCK4B (700, 800 MHz)

Product Name, Definition, Firmware	Installed Options
Reciter Model T01-01103-NAAA, SN 18164258, Hardware 00.00, Firmware P25-1.15.00.0001	Options: Trunking, Trunking Control Channel, Conventional
Reciter Model T01-01103-NAAA, SN 18164264, Hardware 00.00, Firmware P25-1.15.01.0004	Options: Trunking, Trunking Traffic Channel
Power Amplifier 100 W Model T01-01121-NBAA, SN 18176251, Hardware 0006, Firmware 1.03.00.0001	Options: Trunking, Trunking Control Channel, Conventional
Power Amplifier 100 W Model T01-01121-NBAA, SN 18164267, Hardware 0006, Firmware 1.03.00.0001	Options: Trunking, Trunking Traffic Channel
Power Management Unit Model TBA30A0-0100, SN 18163651, Hardware 00.03, Firmware 0314	Options: Trunking, Trunking Control Channel, Conventional
Power Management Unit Model TBA30A0-0100, SN 1816330, Hardware 00.03, Firmware 0314	Options: Trunking, Trunking Traffic Channel
VESTA Radio Software V11_06 (V2.05)	Options: Trunking, Trunking Control Channel, Trunking Traffic Channel, Conventional
VESTA Radio Software V11_07 (V2.06)	Options: Trunking, Trunking Control Channel, Trunking Traffic Channel, Conventional
VESTA Radio Software V11_08 (V2.07)	Options: Trunking, Trunking Control Channel, Trunking Traffic Channel, Conventional

August 8, 2017

17 of 19

## **Project 25 Compliance Assessment Program**

### **SUMMARY TEST REPORT (STR)**

**AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER**

**STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017**

#### **REPORT KEY**

<b>Notation</b>	<b>Test Case Result Definition</b>
U	Test examines functionality the Test Object does not support
P (Pass)	Test Object Meets Requirements
F (Fail)	Test Object Does Not Meet Requirements
N/R (No Requirement)	Test object operates at a level for which there is no requirement.

<b>Comments</b>
U1: Airbus DS Communication TB5500i VESTA Radio P25 repeaters do not offer an analog audio receiver output so this test is not supported.
U2: Test case 2.2.3.4.3 is not applicable for Airbus DS Communications VESTA Radio P25 Infrastructure; See results of test 2.2.3.4.4.
U3: Test cases 2.2.3.4.5 and 2.2.3.4.6 are not supported by Airbus DS Communications VESTA Radio P25 Infrastructure.
U4: Section 2.2.3.1 tests for conventional interoperability not tested at this time

**August 8, 2017**

18 of 19

## ***Project 25 Compliance Assessment Program***

### **SUMMARY TEST REPORT (STR)**

**AIRBUS DS COMMUNICATIONS VESTA RADIO TB5500I SERIES FIXED BASE STATION/REPEATER**

**STR-AIRBUS\_DSC-TB5500I\_Repeater-08082017**

#### **DISCLAIMER**

The information contained herein has been provided by the supplier of the product with permission to make the information publicly available. The U.S. 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, supplier, or otherwise does not constitute an endorsement by or a recommendation from DHS. Dates in the following Burden Statement have no expiration bearing on the complying product's formal declaration.

#### **BURDEN STATEMENT**

**OMB NO:** 6040-0015

**EXPIRATION DATE:** 6/30/2019

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 6/30/2019. 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, DC 20528.

DHS FORM 10056 – June 2009

**August 8, 2017**

Page 19 of 19