Homeland Security

Science and Technology

Office for Interoperability and Compatibility

Project 25 Compliance Assessment Bulletin

Project 25 Compliance Assessment Program

Supplier's Declaration of Compliance and Summary Test Report Requirements for Subscriber Units

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P25-CAB-SDOC-STR_SUBSC-REQ

August 2018

Notice of Disclaimer and Limitation of Liability

The Project 25 Compliance Assessment Program (P25 CAP) provides equipment purchasers with demonstrated evidence of a product's compliance with a select group of requirements within the suite of P25 standards. The test procedures used to validate these requirements are also part of the P25 suite of standards. Although successful tests will demonstrate P25 compliance for the specific requirements tested, the conclusions drawn from these tests do not apply to every environment or individual user's needs. P25 CAP-mandated tests only demonstrate product compliance with the test procedures listed in the Supplier's Declaration of Compliance and, therefore, only attest to a product's compliance with specific requirements within the P25 Standard.

Revision History

Version	Date	Description
Draft	05/03/2018	Create document combining SDOC and STR requirements for subscriber unit
V1.0	08/02/2018	Final version

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1 Introduction

The Department of Homeland Security (DHS) Office for Interoperability and Compatibility (OIC) Project 25 Compliance Assessment Program (P25 CAP) is a voluntary program that allows P25 equipment suppliers to formally demonstrate their products' compliance with a select group of requirements within the suite of P25 standards. The purpose of the program is to provide emergency response agencies with evidence that the communications equipment they are purchasing meet P25 standards for performance, conformance and interoperability.

The program requires test laboratories to demonstrate their competence through a rigorous and objective assessment process. Such a process promotes the user community's confidence in, and acceptance of, test results from DHS-recognized laboratories. All equipment suppliers that participate in the P25 CAP must use DHS-recognized laboratories to conduct performance, conformance and interoperability tests on their products. P25 equipment suppliers will release Summary Test Report (STR) and Supplier's Declaration of Compliance (SDOC) documents based on the Detailed Test Report (DTR) from the DHS-recognized laboratory(s) that performed the product testing. This documentation will serve to increase the public's confidence in the performance, conformance and interoperability of P25 equipment.

Performance, conformance and interoperability issues are likely to occur in all communications technologies and especially in ones like P25 with protocols that constantly adapt to changing user requirements. Users should seek to address such problems with the supplier first, then with TIA TR8.25, and then within the P25 CAP and, notably, before product launch and deployment. Further, the declaration of compliance-related documents developed by program participants will provide useful technical information about the equipment.

SAFECOM grant guidance[1] states that agencies using grant funds to purchase P25 equipment are strongly encouraged to obtain the P25 CAP SDOC and STR documents as verification that the equipment to be purchased falls within accordance with P25 CAP. P25 equipment that is posted on the P25 CAP Approved (Grant Eligible) Equipment page[2] of the P25 CAP website shall be considered P25 CAP Compliant equipment.

2 Scope

P25 subscriber vendors must submit SDOCs and STRs to P25 CAP in order for the vendor's P25 equipment to be posted on the P25 CAP Approved (Grant Eligible) Equipment webpage. P25 CAP has developed SDOC and STR templates to be used for the submission of the SDOC and STR. This document provides guidance on how to use these templates.

[1] See 2017 SAFECOM Grant Guidance on Emergency Communications, Land Mobile Radio, pages 42-45. https://www.dhs.gov/publication/funding-documents

[2] See https://www.dhs.gov/science-and-technology/approved-grant-eligible-equipment

3 Effective Date

This Compliance Assessment Bulletin (CAB) becomes effective on August 2, 2018.

4 Normative References

[1] Subscriber SDOC Template 20180425[3]

[2] Subscriber STR Template 20180425[4]

[3] P25-CAB-CAI_TEST_REQ-v3[5] (also known as the 2016 Test Requirements CAB)

[4] P25-CAB-CAI_TEST_REQ-TDMA_170720[6] (also known as the 2017 Test Requirements CAB)

5 Supplier's Declaration of Compliance (SDOC) Format and Submittal Procedures

The SDOC document format has been modified from previous formats. The SDOC template has been developed to support both the 2016 Test Requirements CAB and the 2017 Test Requirements CAB. The vendor submitting the SDOC shall identify whether the equipment was tested under the 2016 Test Requirements CAB or the 2017 Test Requirements CAB.

When an SDOC is identified as tested under the 2016 Test Requirements CAB, the sections and test cases that apply for the 2017 Test Requirements CAB will be noted as 'not applicable.' If a subscriber product is 'performance' tested to the 2017 CAB and 'interoperability' tested to the 2016 CAB, the product is submitted as a 2016 SDOC/STR since the interoperability testing is based on the 2016 CAB. If a subscriber product is 'performance' tested to the 2016 CAB and 'interoperability' tested to the 2017 CAB, the product is submitted as a 2016 SDOC/STR since the performance testing is based on the 2016 CAB. Once the equipment has been tested against all the requirements and test cases in the 2017 CAB, the equipment SDOC can be submitted as a 2017 SDOC/STR.

For every equipment model submitted to P25 CAP, vendors will submit two SDOCs: one in Microsoft Word format (.docx) and one in the Adobe Acrobat Portable Document Format (.pdf). The SDOC template is based on Microsoft Word. The SDOC document will be subject to a 508 accessibility review and will be downloadable from the P25 CAP webpage.

If test case results for posted equipment are corrected or updated, the equipment vendor will re-submit an updated SDOC.

If updated equipment software is released by a vendor and the vendors impacted by this update have determined the new software does not impact the previously submitted test case results, the vendor is

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[3] A Microsoft Word SDOC template will be made available upon request by emailing P25CAP@hq.dhs.gov.

[4] A Microsoft Excel STR template will be made available upon request by emailing P25CAP@hq.dhs.gov.

[5] The P25-CAB-CAI_TEST_RED-v3 is found at https://www.dhs.gov/sites/default/files/publications/P25-CAB-CAI_TEST_REQ-v3-508.pdf

[6] The P25-CAB-CAI_TEST_REQ-TDMA_170720 is found at https://www.dhs.gov/sites/default/files/publications/P25-CAB-CAI_TEST_REQ-TDMA_170720-508.pdf

requested to email P25 CAP with the following information: (1) the updated software version identifier, and (2) a statement explaining that the updated software version does not impact the previously submitted test case results for the equipment.

For equipment software updates as in the case explained above, P25 CAP will take the following action: on the P25 CAP publication page for the affected equipment, P25 CAP will add an informational note stating the current software version identifier for the equipment.

In order to track software version history, the vendor is requested to submit an updated STR when software is updated. This action will maintain the software version history.

P25 CAP has developed a SDOC template for the subscriber equipment and a separate SDOC template for the base station repeater equipment. The requirements and test cases defined by the Test Requirement CABs are different between the subscriber and base station repeater. Softcopy SDOC templates are available from P25 CAP. Please send requests to P25CAP@hq.dhs.gov.

6 SDOC - Top of First Page

The information at the top of the SDOC's first page is NOT part of the first page header. This information is part of the first page's body text and must be part of the body text to meet 508 accessibility requirements. This same information does appear in the page header space in subsequent pages of the SDOC.

Figure 1. Information at the top of the first page

Project 25 Compliance Assessment Program

SDOC - [VENDOR_NAME] - [SUBSCRIBER_MODEL_NAME]

Month, Day, Year [Date submitted or resubmitted to P25 CAP]

The vendor shall enter the Vendor's name and the Subscriber Model Name.

The vendor shall enter the date (Month, Day, Year) the SDOC is submitted or resubmitted to P25 CAP. The document is submitted via the P25CAP@hq.dhs.gov email.

7 Subscriber Product Information

The vendor will enter model name, tested software versions and hardware/software options.

If the vendor issues a new version of software that is determined by engineering analysis not to impact the results of the previous test case results, P25 CAP requests that the vendor send that information (Model Name of equipment, software version identifier and attestation that software version does not impact the previous test case results) to P25CAP@hq.dhs.gov. P25 CAP will add the software version identifier to the P25 CAP publication webpage for the equipment named in the email. More than one model name can be included in the email. The SDOC will not be updated for these types of software updates.

Table 1. Subscriber Product Information

Subscriber Info	Detail
Model Name:	[Model Name]
Tested Software Versions:	[XX.A]
Hardware/Software Options:	[Examples: Full/Partial/No Display; Full/Partial/No Keypad; DTMF Microphone, Frequency Bands P25 Conventional, P25 Trunking, P25 TDMA Trunking, AES-256 Encryption]

8 Test Requirements CAB Identification

The SDOC template was developed to support both the 2016 Test Requirements CAB and the 2017 Test Requirements CAB. Vendors must check one of the boxes to indicate which Test Requirements CAB, 2016 or 2017, was used for SDOC submittal.

Table 2. Test Requirements CAB Identification

check one	P25 CAP Test Requirement CAB	Details
	P25-CAB-CAI_TEST_REQ – August 2016[7]	Adds conventional interoperability testing to the March 2010 P25 CAP Test Requirements
	P25-CAB-CAI_TEST_REQ – July 2017[8]	Includes August 2016 P25 CAP Test Requirements; Adds TDMA performance and interoperability testing and trunked supplementary data testing

If the 2016 CAB was used for testing, the vendor shall add the full filename of that CAB in the space provided in footnote number 7. If the 2017 CAB was used for testing, the vendor shall add the full name of that CAB in the space provided in footnote number 8. The filename of the Test Requirements CAB used for testing is being requested as the Test Requirements CAB documents have had updates since they were originally published and the version information is captured in the filename.

9 Summary Test Report (STR) Identifier

The STR Identifier is a naming convention for the STR document that includes the test case results for the equipment named in the SDOC. The subscriber STR Identifier format is simple: STR - [VENDOR_NAME] - SUBSCRIBER. The STR Identifier is found in the vendor's subscriber STR, General Info tab, row seven. There is only one subscriber STR per vendor. The STR for the product named in the SDOC is available upon request. Requests for STRs are sent to P25CAP@hq.dhs.gov. Please include the subscriber unit 'Vendor Name' in the email.

[7] The following version of the 2016 CAB was used for testing **[Insert the filename of the Test Requirements CAB document that was used for testing, including the version information]**.

[8] The following version of the 2017 CAB was used for testing **[Insert the filename of the Test Requirements CAB document that was used for testing, including the version information].**

Table 3. STR Identifier

Summary Test Report (STR) Identifier:	[STR Identifier is found in Vendor's Subscriber STR, General Info tab, row seven]

10 Contact Information

The vendor shall enter all the contact information. It is important to provide the contact information for a person who is familiar with P25 CAP and not 'info@company.com' type contacts.

Table 4. Contact Information

Vendor Info	Details
Vendor Name:	
Vendor Website URL:	
P25 CAP Contact Name:	
P25 CAP Contact Phone:	
P25 CAP Contact Email:	

11 SDOC - Page Headings After the First Page

This information at the top of the first page also appears in the page header space (not body text as in the first page) in subsequent pages of the SDOC. The header information found in the first page must be reentered for the second page. All subsequent pages will have the same information that was entered for the page two header.

Figure 2. Information at the top of the SDOC pages after the first page

Project 25 Compliance Assessment Program

SDOC - [VENDOR_NAME] - [SUBSCRIBER_MODEL_NAME]

Month, Day, Year [Date submitted or resubmitted to P25 CAP]

The vendor shall enter the Vendor's name and the Subscriber Model Name.

The vendor shall enter the date (Month, Day, Year) the SDOC is submitted or resubmitted to P25 CAP via the P25CAP@hq.dhs.gov email.

12 Encryption Statement

The Subscriber SDOC requires the vendor to clearly state if the subscriber product complies with the P25 CAP Encryption Requirements CAB (P25-CAB-ENC_REQ) and was tested with AES-256 or without AES-256 because the product is only available without any encryption of any type. When a subscriber is tested without AES-256, all the test cases related to encryption must indicate the test case result is 'Unsupported.'

Table 5. Encryption Statement

Check One	Testing Options
	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.

13 Subscriber Performance Test Sections

There are three performance test sections in the SDOC: Conventional Performance, Trunked Performance FDMA and Trunked Performance TDMA. Each performance test section has an opening paragraph that states all requirements within that test section were passed except for the requirements that are identified as either Unsupported or Failed. When an SDOC is identified as tested under the 2016 Test Requirements CAB, the Trunked Performance TDMA test section should include a note stating 'Not Applicable.'

Each test section provides a listing of the receiver and transmitter performance requirements. If any of the performance requirements is not supported by the vendor or fails, a note is provided at the end of each performance test section stating which requirements did not pass.

If multiple requirements were not supported, the multiple unsupported requirements can be listed in a sentence, separated by commas. Requirements that failed are listed in a separate sentence. See below for examples:

Examples for Unsupported or Failed Requirements notes:

1. Equipment only supports Conventional operation. All requirements for Trunked Performance - FDMA and Trunked Performance - TDMA are unsupported.
2. Receiver Reference Sensitivity failed.
3. 2016 SDOC - Trunked Performance TDMA testing not applicable.

14 Subscriber Interoperability Test Sections

There are five subscriber interoperability test sections in the SDOC: Conventional Interoperability - Direct, Conventional Interoperability - Repeat, Conventional Interoperability - Dispatch Monitoring Console - Repeat, Trunked Interoperability - FDMA, and Trunked Interoperability - TDMA. Each interoperability test section has an opening paragraph that states all test cases within that test section were passed except for the test cases that are identified as either Unsupported or Failed.

Each test section provides a listing of the interoperability test cases included in that section. If any of the test cases are not supported by the vendor or fail testing, an explanatory note is provided at the end of each interoperability test section stating such. If multiple test cases were not supported or failed, the multiple unsupported test cases can be listed in a sentence, separated by commas. Test cases that failed are listed in a sentence separate from the test cases that are unsupported.

Test cases that passed but require specific, sometimes optional, capabilities are also identified with an explanatory note.

Individual test cases that were not fully verified for rule of three testing shall be noted. This situation occurs when the SDOC equipment, and the representative equipment used during interoperability testing, do not support all the same test cases. The SDOC equipment must be tested with representative equipment from at least one vendor to indicate a passed test case result. If equipment is only tested with representative equipment from one or two vendors, the test case result shall also have an explanatory note. The note should state 'Test Case(s) not verified for rule of three due to operational limitations of the representative equipment used for interoperability testing.' The test case results impacted by limitations of the representative equipment shall be listed.

When an SDOC is identified as tested under the 2016 Test Requirements CAB, the Trunked Interoperability FDMA and Trunked Interoperability TDMA test sections should include a note that states '2016 SDOC - Trunked FDMA supplementary data test cases and the Trunked Interoperability TDMA test section are not applicable.'

See examples below:

Unsupported or Failed Test Cases

1. Conventional Message Update, Status Update, Status Query, Radio Unit Monitor test cases are unsupported.
2. Test Cases not verified for rule of three due to operational limitations of the representative equipment used for interoperability testing - Conventional Call Alert, Radio Check.
3. 2016 SDOC - Trunked FDMA supplementary data test cases and the Trunked Interoperability TDMA test section are not applicable.

Optional Capabilities Required to Pass Test Cases

1. DTMF keypad and ID display capability are required for unit to unit call test cases.
2. AES-256 encryption is required for the encryption test case.

15 Vendor's Representative Signature with Date

The SDOC is signed and dated by the vendor's P25 representative. The vendor's representative is also asked to print their name. The date is the date the vendor's representative name is signed.

_____ _____

Date Signed Vendor's Authorized Representative Signature

_____

Vendor's Authorized Representative Printed Name

16 Summary Test Report (STR) Format and Submittal Procedures

The STR document format has been modified from previous formats. The submittal procedure has also changed because of the document modifications.

The STR template has been developed to support both the 2016 Test Requirements CAB and the 2017 Test Requirements CAB. The vendor submitting the STR shall identify whether the equipment was tested under the 2016 or the 2017 Test Requirements CAB. The STR clearly indicates which test sections and, in some cases, which test cases within a test section are not included in the 2016 Test Requirements CAB.

There will be a subscriber STR per vendor and a base station repeater STR per vendor. If a vendor offers one or more subscriber products, test results for all the subscriber products from that vendor will be in a single subscriber STR. If a vendor offers one or more base station repeater products, test results for all the base station repeater products from that vendor will be in a single base station repeater STR. If the vendor offers subscriber products and base station repeater products, the vendor will submit two STRs: one for the subscribers and one for the base station repeaters.

The STR is based on the Microsoft Excel format (.xlsx). The STR spreadsheet includes three types of worksheet tabs: the General Info tab, the Models & Software tab, and one or more Model Name tabs. There will be a separate Model Name tab for each different equipment model covered by the STR. For example, if there are five distinct equipment models, then there will be five Model Name tabs.

P25 equipment vendors are requested to provide P25 CAP with an updated STR anytime there is a correction or update to the STR document.

Since the STRs will not undergo a 508 accessibility review, they will not be downloadable from the P25 CAP webpage. Anyone can request a softcopy of a P25 CAP approved STR by sending that request via email to P25CAP@hq.dhs.gov. Please include the subscriber 'Vendor Name' in the email.

P25 CAP will provide a STR template for the subscriber equipment and a separate template for the base station repeater equipment. The test cases defined by the Test Requirement CAB are different between the subscriber and base station repeater. The templates for the STR are available from P25 CAP. Vendors can request a softcopy of the STR templates by sending an email to P25CAP@hq.dhs.gov.

17 STR - General Info Worksheet Tab

The General Info tab consists of a heading with key information, a table that includes the STR Identifier, STR template version, which Test Requirements CAB was used, Contact information, STR Revision History table and P25 Test Lab information.

References to the STR template will be made by row number of the STR General Info tab.

17.1 STR Header Info

The STR Header provides key information: the name of the subscriber vendor, which CAB was used for the STR, and the date the STR was submitted to P25 CAP.

Table 6. STR Header Information

row	Details
2	***Project 25 Compliance Assessment Program***
3	SUMMARY TEST REPORT (STR) for [Vendor Name] Subscribers
4	**STR Submitted based on [2016 or 2017] CAB** *(choose one)*
5	[Month, Day, Year] *(date submitted or resubmitted to P25 CAP)*

Row 3: Add Vendor Name.
Row 4: Pick either the 2016 CAB version or 2017 CAB version and remove the unused year.
Row 5: Add the month, day, year the STR is submitted to P25 CAP.

17.2 STR Identifier Table

The STR Identifier table includes the STR Identifier, the STR template version and the CAB version that is used for STR submittal.

Table 7. STR Identifier

row	Item	Details
7	Summary Test Report Identifier	STR - [VENDOR_NAME] - SUBSCRIBER
8	STR Template Version	Subscriber STR Template 20180420
9	2016 CAB Title	P25-CAB-CAI_TEST_REQ – August 2016
10	2016 CAB Filename	[Insert the complete filename of the 2016 Test Requirements CAB document that was used for STR submittal]
11	2107 CAB Title	P25-CAB-CAI_TEST_REQ – July 2017
12	2017 CAB Filename	[Insert the complete filename of the 2017 Test Requirements CAB document that was used for STR submittal]

Row 7: Under the Details column, add Vendor Name to complete the STR Identifier.
Row 10: Under the Details column, insert the filename of the 2016 Test Requirements CAB document that was used for STR submittal. The Test Requirements CABs have been updated since they were originally released. The complete filename captures the version information.
Row 12: Under the Details column, insert the filename of the 2017 Test Requirements CAB document that was used for STR submittal. The Test Requirements CABs have been updated since they were originally released. The complete filename captures the version information.

17.3 Contact Information Table

The Contact Information Table is for the vendor to include the following: Company Name, Company Website URL, P25 CAP Contact Name, P25 CAP Contact Phone Number and P25 CAP Contact Email.

Table 8. Contact Information

row	Contact Information	Details
15	Company Name:	
16	Company Website URL:	
17	P25 CAP Contact Name:	
18	P25 CAP Contact Phone Number:	
19	P25 CAP Contact Email:	

Row 15: Under the Details column, add the name of the company submitting the STR.

Row 16: Under the Details column, add the company's website URL.

Row 17: Under the Details column, add the contact name with regards to the STR. This is very important for future follow-ups.

Row 18: Under the Details column, add the contact's phone number.

Row 19: Under the Details column, add the contact's email address.

17.4 Summary Test Report Revision History

P25 CAP requests that each time the STR is updated, the STR revision table is updated with the date and a short description of what was changed. P25 CAP requests that the revised STR be sent to P25 CAP.

Table 9. STR Revision History

row	Revision Date	STR Content Changes
23	[date submitted to P25 CAP]	Initial submission
24	[date resubmitted to P25 CAP]	
25	[add more rows if needed]	

Row 23: Under Revision Date, add the date of the initial STR submission.

Row 24: Under Revision Date, add the date for a resubmission of the STR.

Row 24: Under STR Content Changes, add a description of the changes.

Row 25: Under Revision Date, add the date of the next resubmission of the STR.

Row 25: Under STR Content Changes, add a description of the changes.

17.5 P25 CAP Test Laboratory Information

P25 CAP Test Laboratory name and code are provided for every P25 Test Laboratory that provided testing for any of the test cases found in the STR. There is typically more than one P25 Test Laboratory involved. The table below shall be added for every test lab involved with the P25 CAP testing of the equipment included on the STR.

Table 10. P25 CAP Test Laboratory Information

row	Laboratory [1]	Details
29	P25 CAP Test Laboratory Name:	
30	P25 CAP Test Laboratory Code:	

Row 29: Under Details, add the name of the accredited P25 CAP test laboratory involved with the P25 CAP testing.

Row 30: Under Details, add the assigned P25 CAP test laboratory code. If a laboratory code has not been assigned by P25 CAP, please request a laboratory code via email to P25CAP@hq.dhs.gov.

18 STR - Models & Software Worksheet Tab

The Models & Software Worksheet includes all the model class information, the software release information for the model class equipment, the representative equipment used for interoperability testing and the software release information for the representative equipment.

References to the STR template will be made by row number of the STR Models & Software tab.

18.1 Interoperability Model Class Heading

Model Classes are defined to allow equipment that is representative of all the equipment models within a model class to be used for interoperability testing. The vendor shall provide the Vendor's Name and the Vendor's Name for the Model Class. If the vendor has more than one model class, Table 11 (Interoperability Model Class Heading) can be duplicated with Table 12 (Interoperability Model Class Table) for additional model classes.

Table 11. Interoperability Model Class Heading

row	Description
2	[Name of Subscriber Vendor] Interoperability Model Class: [Vendor_Name for Model Class] Subscriber Unit

Row 2: Add the name of the subscriber vendor and the name of the subscriber model class.

18.2 Interoperability Model Class Table

In general, a model class is a group of products such that if each were tested for interoperability, all the products in the model class would have the same test case results. But, due to the wide range of P25 features and product offerings in a vendor's equipment portfolio, there could be some variation in test case results due to what features and options have been equipped in the product. The hardware and software option variations of certain models within the model class may impact the test case results of those certain models. Table rows may be removed if there are fewer than three model names. Table rows can be added if there are more than three model names.

Table 12. Interoperability Model Class Table

row	Model Names	Subscriber Type	Tested Software Versions	Software Version Updates	Software Options/Frequency Bands/Hardware Options
4	[Model_Name1]	[portable or mobile]	[Tested Software Version]	[Software Version Updates]	[Software Options], [List Frequency Bands Supported], [Hardware Options]
5	[Model_Name2]	[portable or mobile]	[Tested Software Version]	[Software Version Updates]	[Software Options], [List Frequency Bands Supported], [Hardware Options]

row	Model Names	Subscriber Type	Tested Software Versions	Software Version Updates	Software Options/Frequency Bands/Hardware Options
6	[Model_Name3]	[portable or mobile]	[Tested Software Version]	[Software Version Updates]	[Software Options], [List Frequency Bands Supported], [Hardware Options]

Rows 4-6: In their respective columns, the vendor shall provide the Model Names for the equipment in the model class, the Subscriber Type, the Tested Software Versions, Software Version Updates, Frequency Bands supported by the model, and all Software Options and Hardware Options that must be included to meet the model's stated test case results.

18.3 Representative Equipment Tables

Interoperability testing requires 'representative equipment' in order to perform the interoperability test cases. Representative equipment is competitive equipment. P25 CAP 'Rule of Three' testing requires equipment from at least three vendors. The representative equipment models used for testing represent the test case results of the vendor's model class and of the competitive vendor's model class.

18.3.1 Representative Conventional Subscriber Unit Products Tested with the Subscriber Unit for Conventional Interoperability - Direct Mode

At a minimum, Representative Conventional Subscriber Unit Products from three vendors shall be tested with a representative subscriber model from the model class described in section 18.1 and section 18.2. Table rows can be added if there are more than three vendor names.

Table 13. Representative Conventional Subscriber Unit Products - Direct Mode

row	Subscriber Vendor	Model	Tested Software Versions	Software Version Updates	Model Class
17	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's subscriber STR.
18	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's subscriber STR.
19	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's subscriber STR.

Rows 17-19: The vendor shall provide the Vendor Name, Model Name, Tested Software Versions and Software Version Updates for the representative subscribers used for testing in their respective columns.

18.3.2 Representative Conventional Base Station Repeater Products Tested with the Subscriber Unit for Conventional Interoperability - Repeat Mode

At a minimum, Representative Conventional Base Station Repeater Products from three vendors shall be tested with a representative subscriber model from the model class described in section 18.1 and section 18.2. Table rows can be added if there are more than three vendor names.

Table 14. Representative Conventional Base Station Repeater Products - Repeat Mode

row	Base Station Repeater Vendor	Model	Tested Software Versions	Software Version Updates	Model Class
24	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's base station repeater STR.
25	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's base station repeater STR.
26	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's base station repeater STR.

Rows 24-26: The vendor shall provide the Vendor Name, Model Name, Tested Software Versions and Software Version Updates for the representative base station repeaters used for testing in their respective columns.

18.3.3 Representative Conventional Base Station Repeater Products Tested with the Subscriber Unit for Conventional Interoperability - FNE Dispatch Monitoring Console - Repeat Mode

At a minimum, Representative Conventional Base Station Repeater Products with FNE Dispatch Monitoring Console from three vendors shall be tested with a representative subscriber model from the model class described in section 18.1 and section 18.2. Table rows can be added if there are more than three vendor names.

Table 15. Representative Conventional Base Station Repeater Products - FNE Dispatch Monitoring Console - Repeat Mode

row	Base Station Repeater Vendor	Model	Tested Software Versions	Software Version Updates	Model Class
32	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's base station repeater STR.
33	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's base station repeater STR.
34	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's base station repeater STR.

Rows 32-34: The vendor shall provide the Vendor Name, Model Name, Tested Software Versions and Software Version Updates for the representative base station repeaters used for testing in their respective columns.

18.3.4 Representative Trunked Base Station Repeater Products Tested with the Subscriber Unit for Trunked Interoperability - FDMA

At a minimum, Representative Trunked Base Station Repeater Products from three vendors shall be tested with a representative subscriber model from the model class described in section 18.1 and section 18.2. Table rows can be added if there are more than three vendor names.

Table 16. Representative Trunked Base Station Repeater Products - FDMA

Row	Base Station Repeater Vendor	Model	Tested Software Versions	Software Version Updates	Model Class
39	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's base station repeater STR.
40	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's base station repeater STR.

Row	Base Station Repeater Vendor	Model	Tested Software Versions	Software Version Updates	Model Class
41	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's base station repeater STR.

Rows 39-41: The vendor shall provide the Vendor Name, Model Name, Tested Software Versions and Software Version Updates for the representative base station repeaters used for testing in their respective columns.

18.3.5 Representative Trunked Base Station Repeater Products Tested with the Subscriber Unit for Trunked Interoperability - TDMA

At a minimum, Representative Trunked Base Station Repeater Products from three vendors shall be tested with a representative subscriber model from the model class described in section 18.1 and section 18.2. Table rows can be added if there are more than three vendor names.

Table 17. Representative Trunked Base Station Repeater Products - TDMA

row	Base Station Repeater Vendor	Model	Tested Software Versions	Software Version Updates	Model Class
46	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's base station repeater STR.
47	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's base station repeater STR.
48	[Vendor_Name]	[Model Name]	[Tested Software Version]	[Software Version Updates]	For information on additional models and/or software versions covered by this representative model's test results, see the model class table(s) on the 'Models & Software' tab of this vendor's base station repeater STR.

Rows 46-48: The vendor shall provide the Vendor Name, Model Name, Tested Software Versions and Software Version Updates for the representative base station repeaters used for testing in their respective columns.

19 STR - Model Name Worksheet Tab

The third type of worksheet in the STR is the Model Name worksheet. The vendor will determine which subscriber products will have a distinct Model Name and therefore a distinct Model Name worksheet tab. Each Model Name will have its own worksheet tab. The Model Name worksheet tab can be copied for additional worksheets for additional Model Names. Each worksheet tab will be labelled with its Model Name.

References to the Model Name worksheet of the STR template will be made by row number of the STR Model Name worksheet tab.

19.1 Product Under Test Table

The vendor will state the Model Name for the equipment. The vendor will state any hardware capability/options or software options that must to be installed to support the reported test case results contained within the Model Name Worksheet.

Table 18. Product Under Test Table

row	Product Info	Details
4	**Model_Name:**	[Model Name] *(Each Model Name must have its own 'Model_Name' tab, i.e., its own Excel worksheet. Label the Spreadsheet TAB with the 'Model_Name'. Each 'Model_Name' has its own SDOC.)*
5	**Hardware Capability/Options:**	[Examples: Full/Partial/No Display; Full/Partial/No Keypad; DTMF Microphone, Frequency Bands]
6	**Software Options:**	[Examples: P25 Conventional, P25 Trunked, P25 TDMA Trunked, AES-256 Encryption]

Row 4: Under the Details column, the vendor shall add the model name for the worksheet tab. This model name shall also be used for titling the worksheet tab.

Row 5: Under the Details column, the vendor shall add all hardware options that impact the passage of any of the test requirements or test cases. The option naming should use generic names such as shown in the examples.

Row 6: Under the Details column, the vendor shall add all software options that impact the passage of any of the test requirements or test cases. The option naming should use generic names such as shown in the examples.

19.2 Test Case Result Notations and Definitions

Test case notations and definitions are primarily used to indicate whether a requirement or test case result passed, failed or is unsupported by the vendor.

As noted above, although products may reuse the same software release, products may not all have the same capability to pass some test cases. If there is a test case that requires a particular hardware capability or option, or a particular software option to pass a test case, the vendor will indicate that with a test case notation/definition that defines what is required to pass the test case.

Vendors are allowed to add notations/definitions as needed. P25 CAP will review any additional notations/definitions.

Table 19. Test Case Results Notations and Defintions

row	Notation	Test Case Result Definition
10	P (Pass)	Product Under Test Passed the test case
11	P1	Functionality requires product with DTMF keypad
12	P2	Functionality requires product with display capable of ID display
13	P3	Functionality requires DTMF microphone
14	P4	Functionality requires AES 256 encryption
15	P5	Interoperability verified with only one representative base station repeater
16	P6	Interoperability verified with only two representative base station repeaters
17	U (Unsupported)	Test examines functionality the Product Under Test does not support
18	U1	37.5 millisecond slot times is not supported
19	U2	45 millisecond slot times is not supported
20	U3	Functionality is not supported by subscriber unit
21	U4	Functionality is not supported by the representative base station repeater tested with the subscriber under test
22	E (Exception)	DHS OIC Approved Test Case Exception
23	E1	In accordance with the guidance given in TIA 102.CAAB-D §3.2.18, if the transmitter carrier output power rating is 6 watts or less, the mean frequency difference during t1 and t3 may be greater than ±12.5 kHz.
24	F (Fail)	Product Under Test Failed the test case

19.3 Conventional Subscriber Performance

The conventional performance test case results section of the Model Name worksheet is introduced by the banner shown below. It is noted that the test cases for the 2016 and the 2017 CAB are identical for this test section. The vendor states the DTR Identifier for the conventional performance testing.

Table 20. Banner for Conventional Subscriber Performance

row	Conventional Subscriber Performance (2017 CAB)		Conventional Subscriber Performance (2016 CAB)
28	**P25 CAP Test Identification**		**P25 CAP Test Identification**
29	P25-CAB-CAI_TEST_REQ – July 2017, Section 2.1.1.1 – Conventional Subscriber Unit Performance		P25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.1.1 - Conventional Subscriber Unit Performance
30	**Detailed Test Report Identification**		**Detailed Test Report Identification**
31	[DTR-P25CAPxxxxxx]		[DTR-P25CAPxxxxxx]

Row 31: Under the 'Conventional Subscriber Performance (2017 CAB)' column, record the DTR Identifier for the test section if the vendor is submitting the STR according to the 2017 CAB. Note that a DTR Identifier from previous testing may be recorded if testing cases have not changed.

Row 31: Under the 'Conventional Subscriber Performance (2016 CAB)' column, record the DTR Identifier for the test section if the vendor is submitting the STR according to the 2016 CAB. Note that a DTR Identifier from previous testing may be recorded if testing cases have not changed.

19.3.1 Conventional Subscriber Unit Receiver Test Case Results

The table below is used to capture the test case results for this test section. If the equipment model only supports a single frequency band or two or three frequency bands, state the test case results for the frequency bands that are supported. The worksheet **content** of the unsupported frequency bands can be deleted. Please do not deleted the **cells** within the worksheet.

Table 21. Conventional Subscriber Unit Receiver Tests

row	Test Case	Test Case Description	Requirement	VHF Result	UHF-L Result	UHF-H Result	700 Result	800 Result
36	3.1.4	Reference Sensitivity – C4FM	≤ -116 dBm	*P*	*P*	*P*	*P*	*P*
37	3.1.4	Reference Sensitivity – Standard Simulcast	≤ -116 dBm	*P*	*P*	*P*	*P*	*P*
38	3.1.5	Faded Reference Sensitivity – C4FM	≤ -108 dBm	*P*	*P*	*P*	*P*	*P*
39	3.1.5	Faded Reference Sensitivity – Standard Simulcast	≤ -108 dBm	*P*	*P*	*P*	*P*	*P*
40	3.1.6	Signal Delay Spread Capability – C4FM	≥ 50 µs	*P*	*P*	*P*	*P*	*P*
41	3.1.6	Signal Delay Spread Capability – Standard Simulcast	≥ 80 µs	*P*	*P*	*P*	*P*	*P*
42	3.1.7.1	Adjacent Channel Rejection – C4FM	≥ 60 dB	*P*	*P*	*P*	*P*	*P*
43	3.1.7.1	Adjacent Channel Rejection – Standard Simulcast	≥ 60 dB	*P*	*P*	*P*	*P*	*P*
44	3.1.7.2	Offset Adjacent Channel Rejection – C4FM	≥ 47 dB	*P*	*P*	*P*	*P*	*P*

row	Test Case	Test Case Description	Requirement	VHF Result	UHF-L Result	UHF-H Result	700 Result	800 Result
45	3.1.7.2	Offset Adjacent Channel Rejection – Standard Simulcast	≥ 47 dB	*P*	*P*	*P*	*P*	*P*
46	3.1.8	Co-Channel Rejection	≤ 9 dB	*P*	*P*	*P*	*P*	*P*
47	3.1.9	Spurious Response Rejection	≥ 80 dB Mobile ≥ 70 dB Portable	*P*	*P*	*P*	*P*	*P*
48	3.1.10	Intermodulation Rejection	≥ 75 dB Mobile ≥ 70 dB Portable	*P*	*P*	*P*	*P*	*P*
49	3.1.11	Signal Displacement Bandwidth	≥ 1000 Hz	*P*	*P*	*P*	*P*	*P*
50	3.1.17	Late Entry Unsquelch Delay: No Talk Group or Encryption	≤ 125 ms	*P*	*P*	*P*	*P*	*P*
51	3.1.18	Receiver Throughput Delay	≤ 125 ms	*P*	*P*	*P*	*P*	*P*

Rows 36-51: The vendor shall record the test case results for the frequency band tested. The test case results for subscriber models that support one or a multiband radio (multiple frequency bands in one physical radio) can be recorded in one table. The test case results for subscriber models that are available in multiple frequency bands but not as a multiband radio can be recorded in one table.

19.3.2 Conventional Subscriber Unit Transmitter Test Case Results

The table below is used to capture the test case results for this test section. If the equipment model only supports a single frequency band or two or three frequency bands, state the test case results for the frequency bands that are supported. The worksheet **content** of the unsupported frequency bands can be deleted. Please do not deleted the **cells** within the worksheet.

Table 22. Conventional Subscriber Unit Transmitter Tests

row	Test Case	Test Case Description	Requirement	VHF Result	UHF-L Result	UHF-H Result	700 Result	800 Result
54	3.2.8	Unwanted Emissions: Adjacent Channel Power Ratio*	≥ 67 dB (non-700MHz)	*P*	*P*	*P*	*P*	*P*
55	3.2.12	Transmitter Attack Time	≤ 50 ms	*P*	*P*	*P*	*P*	*P*
56	3.2.12	Encoder Attack Time	≤ 100 ms	*P*	*P*	*P*	*P*	*P*
57	3.2.14	Transmitter Throughput Delay	≤ 125 ms	*P*	*P*	*P*	*P*	*P*

row	Test Case	Test Case Description	Requirement	VHF Result	UHF-L Result	UHF-H Result	700 Result	800 Result
58	3.2.15	Frequency Deviation for C4FM: High-Level Signal Deviation	2544 < f_{dev} ≤ 3111 Hz	*P*	*P*	*P*	*P*	*P*
59	3.2.15	Frequency Deviation for C4FM: Low-Level Signal Deviation	848 < f_{dev} ≤ 1037 Hz	*P*	*P*	*P*	*P*	*P*
60	3.2.16	Modulation Fidelity – C4FM	≤ 5%	*P*	*P*	*P*	*P*	*P*
61	3.2.18	Transient Frequency Behavior: Time Interval [see t1 value in cell]	|Δf| ≤ 12.5 kHz	[t1=5ms] *P or E1*	[t1=10ms] *P or E1*	[t1=10ms] *P or E1*	[t1=20ms] P or E1	[t1=20ms] P or E1
62	3.2.18	Transient Frequency Behavior: Time Interval [see t2 value in cell]	|Δf| ≤ 6.25 kHz	[t2=20ms] *P*	[t2=25ms] *P*	[t2=25ms] *P*	[t2=50ms] *P*	[t2=50ms] *P*
63	3.2.18	Transient Frequency Behavior: Time Interval [see t3 value in cell]	|Δf| ≤ 12.5 kHz	[t3=5ms] *P or E1*	[t3=10ms] *P or E1*	[t3=10ms] *P or E1*	[t3=10ms] *P or E1*	[t3=10ms] *P or E1*

*700MHz Adjacent Channel Power Ratio test is passed based on test results submitted for FCC equipment authorization.

Rows 54-63: The vendor shall record the test case results for the frequency band tested. The test case results for subscriber models that support one or a multiband radio (multiple frequency bands in one physical radio) can be recorded in one table. The test case results for subscriber models that are available in multiple frequency bands but not as a multiband radio can be recorded in one table.

19.4 Trunked Subscriber Performance - FDMA

The trunked performance test case results section of the Model Name worksheet is introduced by the banner shown below. It is noted that the test cases for the 2016 and the 2017 CAB are identical for this test section. The vendor states the DTR Identifier for the trunked performance testing.

Table 23. Banner for Trunked Subscriber Performance - FDMA

row	Trunked Subscriber Performance - FDMA (2017 CAB)		Trunked Subscriber Performance (2016 CAB)
68	**P25 CAP Test Identification**		**P25 CAP Test Identification**
69	P25-CAB-CAI_TEST_REQ – July 2017, Section 2.1.1.2 - Trunked Subscriber Unit Performance - FDMA		P25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.1.2 - Trunked Subscriber Unit Performance - FDMA
70	**Detailed Test Report Identification**		**Detailed Test Report Identification**
71	[DTR-P25CAPxxxxxx]		[DTR-P25CAPxxxxxx]

Row 71: Under the 'Trunked Subscriber Performance (2017 CAB)' column, record the DTR Identifier for the test section if the vendor is submitting the STR according to the 2017 CAB. Note that a DTR Identifier from previous testing may be recorded if testing cases have not changed.

Row 71: Under the 'Trunked Subscriber Performance (2016 CAB)' column, record the DTR Identifier for the test section if the vendor is submitting the STR according to the 2016 CAB. Note that a DTR Identifier from previous testing may be recorded if testing cases have not changed.

19.4.1 Trunked Subscriber Unit Receiver Test Case Results - FDMA

The table below is used to capture the test case results for this test section. If the equipment model only supports a single frequency band or two or three frequency bands, state the test case results for the frequency bands that are supported. The worksheet **content** of the unsupported frequency bands can be deleted. Please do not deleted the **cells** within the worksheet.

Table 24. Trunked Subscriber Unit Receiver Tests - FDMA

row	Test Case	Test Case Description	Requirement	VHF Result	UHF-L Result	UHF-H Result	700 Result	800 Result
76	3.1.4	Reference Sensitivity – C4FM	≤ -116 dBm	*P*	*P*	*P*	*P*	*P*
77	3.1.4	Reference Sensitivity – Standard Simulcast	≤ -116 dBm	*P*	*P*	*P*	*P*	*P*
78	3.1.5	Faded Reference Sensitivity – C4FM	≤ -108 dBm	*P*	*P*	*P*	*P*	*P*
79	3.1.5	Faded Reference Sensitivity – Standard Simulcast	≤ -108 dBm	*P*	*P*	*P*	*P*	*P*
80	3.1.6	Signal Delay Spread Capability – C4FM	≥ 50 µs	*P*	*P*	*P*	*P*	*P*
81	3.1.6	Signal Delay Spread Capability – Standard Simulcast	≥ 80 µs	*P*	*P*	*P*	*P*	*P*
82	3.1.7.1	Adjacent Channel Rejection – C4FM	≥ 60 dB	*P*	*P*	*P*	*P*	*P*
83	3.1.7.1	Adjacent Channel Rejection – Standard Simulcast	≥ 60 dB	*P*	*P*	*P*	*P*	*P*
84	3.1.7.2	Offset Adjacent Channel Rejection – C4FM	≥ 47 dB	*P*	*P*	*P*	*P*	*P*
85	3.1.7.2	Offset Adjacent Channel Rejection – Standard Simulcast	≥ 47 dB	*P*	*P*	*P*	*P*	*P*
86	3.1.8	Co-Channel Rejection	≤ 9 dB	*P*	*P*	*P*	*P*	*P*
87	3.1.9	Spurious Response Rejection	≥ 80 dB Mobile ≥ 70 dB Portable	*P*	*P*	*P*	*P*	*P*
88	3.1.10	Intermodulation Rejection	≥ 75 dB Mobile ≥ 70 dB Portable	*P*	*P*	*P*	*P*	*P*
89	3.1.11	Signal Displacement Bandwidth	≥ 1000 Hz	*P*	*P*	*P*	*P*	*P*

Rows 76-89: The vendor shall record the test case results for the frequency band tested. The test case results for subscriber models that support one or a multiband radio (multiple frequency bands in one physical radio) can be recorded in one table. The test case results for subscriber models that are available in multiple frequency bands but not as a multiband radio can be recorded in one table.

19.4.2 Trunked Subscriber Unit Transmitter Test Case Results - FDMA

The table below is used to capture the test case results for this test section. If the equipment model only supports a single frequency band or two or three frequency bands, state the test case results for the frequency bands that are supported. The worksheet **content** of the unsupported frequency bands can be deleted. Please do not deleted the **cells** within the worksheet.

Table 25. Trunked Subscriber Unit Transmitter Tests - FDMA

row	Test Case	Test Case Description	Requirement	VHF Result	UHF-L Result	UHF-H Result	700 Result	800 Result
92	3.2.8	Unwanted Emissions: Adjacent Channel Power Ratio*	≥ 67 dB (non-700MHz)	*P*	*P*	*P*	*P*	*P*
93	3.2.12	Power Attack Time	≤ 50 ms	*P*	*P*	*P*	*P*	*P*
94	3.2.12	Encoder Attack Time	≤ 100 ms	*P*	*P*	*P*	*P*	*P*
95	3.2.14	Transmitter Throughput Delay	≤ 125 ms	*P*	*P*	*P*	*P*	*P*
96	3.2.15	Frequency Deviation for C4FM: High-Level Signal Deviation	$2544 < f_{dev} \leq 3111$ Hz	*P*	*P*	*P*	*P*	*P*
97	3.2.15	Frequency Deviation for C4FM: Low-Level Signal Deviation	$848 < f_{dev} \leq 1037$ Hz	*P*	*P*	*P*	*P*	*P*
98	3.2.16	Modulation Fidelity – C4FM	≤ 5%	*P*	*P*	*P*	*P*	*P*
99	3.2.18	Transient Frequency Behavior: Time Interval [see t1 value in cell]	$\lvert\Delta f\rvert \leq 12.5$ kHz	[t1=5ms] *P or E1*	[t1=10ms] *P or E1*	[t1=10ms] *P or E1*	[t1=20ms] P or E1	[t1=20ms] P or E1
100	3.2.18	Transient Frequency Behavior: Time Interval [see t2 value in cell]	$\lvert\Delta f\rvert \leq 6.25$ kHz	[t2=20ms] *P*	[t2=25ms] *P*	[t2=25ms] *P*	[t2=50ms] *P*	[t2=50ms] *P*
101	3.2.18	Transient Frequency Behavior: Time Interval [see t3 value in cell]	$\lvert\Delta f\rvert \leq 12.5$ kHz	[t3=5ms] *P or E1*	[t3=10ms] *P or E1*	[t3=10ms] *P or E1*	[t3=10ms] *P or E1*	[t3=10ms] *P or E1*

Rows 92-101: The vendor shall record the test case results for the frequency band tested. The test case results for subscriber models that support one or a multiband radio (multiple frequency bands in one physical radio) can be recorded in one table. The test case results for subscriber models that are available in multiple frequency bands but not as a multiband radio can be recorded in one table.

19.4.3 Trunked Subscriber Unit Trunked Test Case Results - FDMA

The table below is used to capture the test case results for this test section. These test cases are independent of frequency band. Any frequency band may be used for these test cases.

Table 26. Trunked Subscriber Unit Trunked Tests - FDMA

row	Test Case	Test Case Description	Requirement	Result
105	3.3.1	Trunked Control Channel Slot Times - 37.5 ms Slot Encode Attack Time	$2.00 \leq t_{slot} \leq 4.15$ ms	
106	3.3.1	Trunked Control Channel Slot Times - 37.5 ms Slot RF Power Attack Time	$0.00 \leq t_{slot} \leq 4.15$ ms	
107	3.3.1	Trunked Control Channel Slot Times - 37.5 ms Slot RF Power Turn Off Time	≤ 1.57 ms	
108	3.3.1	Trunked Control Channel Slot Times - 45 ms Slot Encode Attack Time	$2.00 \leq t_{slot} \leq 11.65$ ms	
109	3.3.1	Trunked Control Channel Slot Times - 45 ms Slot RF Power Attack Time	$0.00 \leq t_{slot} \leq 11.65$ ms	
110	3.3.1	Trunked Control Channel Slot Times - 45 ms Slot RF Power Turn Off Time	≤ 1.57 ms	
111	3.3.2	Trunked Request Time - 37.5 ms Slot	≤ 160 ms	
112	3.3.2	Trunked Request Time - 45 ms Slot	≤ 167.5 ms	
113	3.3.5	Transmitter Time to Key on a Traffic Channel Short Channel Form RF Transmitter Time to Key on a Working Channel	≤ 150.0 ms	
114	3.3.5	Transmitter Time to Key on a Traffic Channel Short Channel Form Encoder Transmit Time	≤ 150.0 ms	
115	3.3.5	Transmitter Time to Key on a Traffic Channel Explicit Channel Form RF Transmitter Time to Key on a Working Channel	≤ 171.1 ms	
116	3.3.5	Transmitter Time to Key on a Traffic Channel Explicit Channel Form Encoder Transmit Time	≤ 171.1 ms	

Rows 105-116: The vendor shall provide test case results for the representative product. The representative product may be from any frequency band.

19.5 Trunked Subscriber Performance - TDMA

The trunked performance test case results section of the Model Name worksheet is introduced by the banner shown below. It is noted that these test cases are only for the 2017 CAB. The vendor states the DTR Identifier for the trunked performance testing.

Table 27. Banner for Conventional Subscriber Performance - TDMA

row	Trunked Subscriber Performance - TDMA (2017 CAB only)
121	**Test Identification**
122	P25-CAB-CAI_TEST_REQ –July 2017, Section 2.1.1.3 - Trunked Subscriber Unit Performance - TDMA
123	**Detailed Test Report Identification**
124	[DTR-P25CAPxxxxxx]

Row 124: Under the 'Trunked Subscriber Performance - TDMA (2017 CAB only)' column, record the DTR Identifier for the test section if the vendor is submitting the STR according to the 2017 CAB. This section is only utilized for the 2017 CAB.

19.5.1 Trunked Subscriber Unit Receiver Test Case Results - TDMA

The table below is used to capture the test case results for this test section. If the equipment model only supports a single frequency band or two or three frequency bands, state the test case results for the frequency bands that are supported. The worksheet **content** of the unsupported frequency bands can be deleted. Please do not deleted the **cells** within the worksheet.

Table 28. Trunked Subscriber Unit Receiver Tests - TDMA

row	Test Case	Test Case Description	Requirement	VHF Result	UHF-L Result	UHF-H Result	700 Result	800 Result
129	3.1.4	Reference Sensitivity - HDQPSK	≤ -116 dBm	*P*	*P*	*P*	*P*	*P*
130	3.1.5	Faded Reference Sensitivity - HDQPSK	≤ -108 dBm	*P*	*P*	*P*	*P*	*P*
131	3.1.6	Signal Delay Spread Capability - HDQPSK	≥ 65 µs	*P*	*P*	*P*	*P*	*P*
132	3.1.7.1	Adjacent Channel Rejection - HDQPSK	≥ 60 dB	*P*	*P*	*P*	*P*	*P*
133	3.1.7.2	Offset Adjacent Channel Rejection - HDQPSK	≥ 47 dB	*P*	*P*	*P*	*P*	*P*

row	Test Case	Test Case Description	Requirement	VHF Result	UHF-L Result	UHF-H Result	700 Result	800 Result
134	3.1.8	Co-Channel Rejection	≤ 9 dB	*P*	*P*	*P*	*P*	*P*
135	3.1.9	Spurious Response Rejection	≥ 80 dB Mobile ≥ 70 dB Portable	*P*	*P*	*P*	*P*	*P*
136	3.1.10	Intermodulation Rejection	≥ 75 dB Mobile ≥ 70 dB Portable	*P*	*P*	*P*	*P*	*P*
137	3.1.11	Signal Displacement Bandwidth	≥ 1000 Hz	*P*	*P*	*P*	*P*	*P*

Rows 129-137: The vendor shall record the test case results for the frequency band tested. The test case results for subscriber models that support one or a multiband radio (multiple frequency bands in one physical radio) can be recorded in one table. The test case results for subscriber models that are available in multiple frequency bands but not as a multiband radio can be recorded in one table.

19.5.2 Trunked Subscriber Unit Transmitter Test Case Results - TDMA

The table below is used to capture the test case results for this test section. If the equipment model only supports a single frequency band or two or three frequency bands, state the test case results for the frequency bands that are supported. The worksheet **content** of the unsupported frequency bands can be deleted. Please do not deleted the **cells** within the worksheet.

Table 29. Trunked Subscriber Unit Transmitter Tests - TDMA

row	Test Case	Test Case Description	Requirement	VHF Result	UHF-L Result	UHF-H Result	700 Result	800 Result
140	3.2.8	Unwanted Emissions: Adjacent Channel Power Ratio*	≥ 65 dB (non-700MHz)	*P*	*P*	*P*	*P*	*P*
141	3.2.12	Frequency Deviation H-CPM – High level Signal	$2995 < f_{dev} \leq 3310$ Hz	*P*	*P*	*P*	*P*	*P*
142	3.2.12	Frequency Deviation H-CPM – Low Level Signal	$998 < f_{dev} \leq 1104$ Hz	*P*	*P*	*P*	*P*	*P*
143	3.2.13	Modulation Fidelity	≤ 5%	*P*	*P*	*P*	*P*	*P*
144	3.2.14	Symbol Rate Accuracy	Not to exceed 10 parts per million	*P*	*P*	*P*	*P*	*P*
145	3.2.15	H-CPM Transmitter Logical Channel Peak Adjacent Channel Power Ratio	≥ 35 dB	*P*	*P*	*P*	*P*	*P*
146	3.2.16	H-CPM Transmitter Logical Channel Off Slot Power	≤ -57dBm	*P*	*P*	*P*	*P*	*P*

row	Test Case	Test Case Description	Requirement	VHF Result	UHF-L Result	UHF-H Result	700 Result	800 Result
147	3.2.17	H-CPM Transmitter Logical Channel Power Envelop						
148	3.2.17	Max - On	4 dBc	*P*	*P*	*P*	*P*	*P*
149	3.2.17	Slot Max	1 dBc	*P*	*P*	*P*	*P*	*P*
150	3.2.17	Slot Min	-3 dBc	*P*	*P*	*P*	*P*	*P*
151	3.2.17	Max - Off	4 dBc	*P*	*P*	*P*	*P*	*P*
152	3.2.18	H-CPM Transmitter Logical Channel Time Alignment	±25 microseconds or less	*P*	*P*	*P*	*P*	*P*

Rows 140-152: The vendor shall record the test case results for the frequency band tested. The test case results for subscriber models that support one or a multiband radio (multiple frequency bands in one physical radio) can be recorded in one table. The test case results for subscriber models that are available in multiple frequency bands but not as a multiband radio can be recorded in one table.

19.6 Conventional Subscriber Unit Interoperability - Direct Mode

The conventional interoperability (direct mode) test case results section of the Model Name worksheet is introduced by the banner shown below. It is noted that the test cases for the 2016 and the 2017 CAB are identical for this test section. This test section includes test cases that must be passed to be compliant with the P25 CAP Minimum Features Requirements CAB. These features are noted in the test case results table.

Table 30. Banner for Conventional Subscriber Unit - Direct Mode Interoperability Testing

row	Conventional Subscriber Unit Interoperability - Direct Mode (2017 CAB)		Conventional Subscriber Unit Interoperability - Direct Mode (2016 CAB)
157	**Test Identification**		**Test Identification**
158	P25-CAB-CAI_TEST_REQ – July 2017, Section 2.1.3.1 - Conventional Subscriber Unit Interoperability - Direct Mode		P25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.3.1 - Conventional Direct Mode Operation

19.6.1 Representative Conventional Subscriber Unit Products Tested with the Subscriber Unit for Conventional Interoperability - Direct Mode

Interoperability testing requires that the vendor test against equipment from three representative equipment vendors. The vendor states the representative subscriber vendor name and the model name of the equipment from the representative subscriber vendor. Each of the representative products is given a Product No. that correlates to the 'Product [x] Result' column in the test case results table directly below.

The DTR Identifier is stated for each of the three representative subscriber vendors. The DTR Identifier may be the same identifier. Table rows can be added if there are more than three vendor names.

Table 31. Representative Conventional Subscriber Unit Products Tested with the Subscriber Unit for Conventional Interoperability - Direct Mode

row	Subscriber Vendor	Model Name	Product No.	Detailed Test Report Identifier
162	[Vendor_Name]	[Model Name]	1	[DTR-P25CAPxxxxxx]
163	[Vendor_Name]	[Model Name]	2	[DTR-P25CAPxxxxxx]
164	[Vendor_Name]	[Model Name]	3	[DTR-P25CAPxxxxxx]

Rows 162-164: In their respective columns, the vendor shall provide the Subscriber Vendor name and the Model Names for the representative equipment that was tested. The DTR Identifier that corresponds to the tested representative equipment shall be recorded in the 'Detailed Test Report Identifier' column. Each representative product shall be numbered in the Product No. column. This product number corresponds to the 'Product (x) Result' column found in the Test Case Results table that follows this table.

19.6.2 Conventional Subscriber Unit Interoperability Test Case Results - Direct Mode

The table below is used to capture the test case results for this test section. These test cases are independent of frequency band. Any frequency band may be used for these test cases. Please note the correspondence between the numbers in the column cells labelled 'Product No.' and the multiple column cells labeled 'Product [x] Result.' For clarity, 'Product No. 1' of the representative products table corresponds with 'Product 1 Results' of the test case results table; 'Product No. 2' corresponds with 'Product 2 Results'; 'Product No. 3' corresponds with 'Product 3 Results'; and so on. Table columns can be added if there are more than three vendor names.

As part of the P25 CAP Minimum Feature Requirement, Test Cases 2.2.1, 2.2.2, 2.2.3 and 2.2.8 must have a Passed test case result.

Table 32. Conventional Subscriber Unit Interoperability Tests - Direct Mode

row	Test Case	Description	Product 1 Result	Product 2 Result	Product 3 Result
170	**2.2.1****	**Matching NAC Operation and SU Unaddressed Voice Call****			
171	2.2.1.4.1	Test Case 1 – Unaddressed Voice Call			
172	**2.2.2****	**Matching NAC Operation and SU Routine Group Voice Call****			
173	2.2.2.4.1	Test Case 1 – Routine Group Voice Call			
174	**2.2.3****	**Monitor Mode – SU Group Voice Call****			
175	2.2.3.4.1	Test Case 1 – Receiving Group Call			
176	**2.2.8****	**Accept Any NAC in Normal & Selective Squelch Mode – SU Group Voice Call****			
177	2.2.8.4.1	Test Case 1 – Receiving Group Call with Receive NAC $F7E under Normal and Selective Squelch Modes			
178	**2.2.4**	**Emergency Call**			
179	2.2.4.4.1	Test Case 1 – Emergency Call			
180	**2.2.5**	**Unit-to-Unit Voice Call**			
181	2.2.5.4.1	Test Case 1 – Initiate Unit-to-Unit Call from SU 1			
182	2.2.5.4.2	Test Case 2 – Initiate Unit-to-Unit Call from SU 5			
183	**2.2.6**	**Unit-to-Unit Voice Call – Receiving Units also in Monitor Mode**			
184	2.2.6.4.1	Test Case 1 – Initiate Unit-to-Unit Call from SU 1			
185	2.2.6.4.2	Test Case 2 – Initiate Unit-to-Unit Call from SU 5			
186	**2.2.7**	**Encryption**			

row	Test Case	Description	Product 1 Result	Product 2 Result	Product 3 Result
187	2.2.7.4.1	Test Case 1 – Call Privacy for Encrypted Call			
188	**2.3.1**	**Call Alert**			
189	2.3.1.4.1	Test Case 1 – Call Alert (SU 1 to SU 5)			
190	2.3.1.4.2	Test Case 2 – Call Alert (SU 5 to SU 1)			
191	**2.3.2**	**Radio Check**			
192	2.3.2.4.1	Test Case 1 – Radio Check (SU 1 to SU 5)			
193	2.3.2.4.2	Test Case 2 – Radio Check (SU 5 to SU 1)			
194	**2.3.3**	**Message Update**			
195	2.3.3.4.1	Test Case 1 – Message Update (SU 1 to SU 5)			
196	2.3.3.4.2	Test Case 2 – Message Update (SU 5 to SU 1)			
197	**2.3.4**	**Status Update**			
198	2.3.4.4.1	Test Case 1 – Status Update (SU 1 to SU 5)			
199	2.3.4.4.2	Test Case 2 – Status Update (SU 5 to SU 1)			
200	**2.3.5**	**Status Query**			
201	2.3.5.4.1	Test Case 1 – Status Query (SU 1 to SU 5)			
202	2.3.5.4.2	Test Case 2 – Status Query (SU 5 to SU 1)			
203	**2.3.6**	**Radio Unit Monitor**			
204	2.3.6.4.1	Test Case 1 – Radio Unit Monitor Initiated by SU 1 – Group Call			
205	2.3.6.4.2	Test Case 2 – Radio Unit Monitor Initiated by SU 5 – Group Call			
206	2.3.6.4.3	Test Case 3 – Radio Unit Monitor Initiated by SU 1 – Unit-to-Unit Call			
207	2.3.6.4.4	Test Case 4 – Radio Unit Monitor Initiated by SU 5 – Unit-to-Unit Call			

** P25 CAP Minimum Feature Requirement - Test Case Result must be a Pass (P)

Rows 170-207: In their respective columns, the vendor shall provide test case results for the representative products from a minimum of three different vendors. More 'Product Result' columns may be added if more representative products are tested.

19.7 Conventional Subscriber Unit Interoperability - Repeat Mode

The conventional interoperability (repeat mode) test case results section of the Model Name worksheet is introduced by the banner shown below. It is noted that while the test cases for these test sections are identical, the 2016 CAB calls out the test cases in a specific table (Table 7) within section 2.1.3.2 of the 2016 CAB, while the 2017 CAB has the same test cases called out within a single section 2.1.3.2 of the 2017 CAB. This test section includes test cases that must be passed to be compliant with the P25 CAP Minimum Features Requirements CAB. These features are noted in the test case results table.

Table 33. Banner for Conventional Subscriber Unit - Repeat Mode Interoperability Testing

row	Conventional Subscriber Unit Interoperability (2017 CAB) - Repeat Mode		Conventional Subscriber Unit Interoperability (2016 CAB) - Repeat Mode
214	**CAB Test Section Identification**		**CAB Test Section Identification**
215	P25-CAB-CAI_TEST_REQ – July 2017, Section 2.1.3.2 - Conventional Subscriber Unit Interoperability - Repeat Mode		P25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.3.2 - [Table 7] - Conventional Interoperability Tests - Repeat Mode

19.7.1 Representative Conventional Base Station Repeater Products Tested with the Subscriber Unit for Conventional Interoperability - Repeat Mode

Interoperability testing requires that the vendor test against equipment from three representative equipment vendors. The vendor states the representative base station repeater vendor name and the model name of the equipment from the representative base station repeater vendor. Each of the representative products is given a Product No. that correlates to the 'Product [x] Result' column in the test case results table directly below the representative equipment table.

The DTR Identifier is stated for each of the three representative base station repeater vendors. Table rows can be added if there are more than three vendor names.

Table 34. Representative Conventional Base Station Repeater Products Tested with the Subscriber Unit for Conventional Interoperability - Repeat Mode

Row	Base Station Repeater Vendor	Model Name	Product No.	Detailed Test Report Identifier
218	[Vendor_Name]	[Model Name]	1	[DTR-P25CAPxxxxxx]
219	[Vendor_Name]	[Model Name]	2	[DTR-P25CAPxxxxxx]
220	[Vendor_Name]	[Model Name]	3	[DTR-P25CAPxxxxxx]

Rows 218-220: In their respective columns, the vendor shall provide the Base Station Repeater Vendor name and the Model Names for the representative equipment that was tested. The DTR Identifier that corresponds to the tested representative equipment shall be recorded in the 'Detailed Test Report Identifier' column. Each representative product shall be numbered in the Product No. column. This product number corresponds to the 'Product (x) Result' column found in the Test Case Results table that follows this table.

19.7.2 Conventional Subscriber Unit Interoperability Test Case Results - Repeat Mode

The table below is used to capture the test case results for this test section. These test cases are independent of frequency band. Any frequency band may be used for these test cases. Please note the correspondence between the numbers in the column cells labelled 'Product No.' and the multiple column cells labeled 'Product [x] Result.' For clarity, 'Product No. 1' of the representative products table corresponds with 'Product 1 Results' of the test case results table; 'Product No. 2' corresponds with 'Product 2 Results'; 'Product No. 3' corresponds with 'Product 3 Results'; and so on. Table columns can be added if there are more than three vendor names.

As part of the P25 CAP Minimum Feature Requirement, Test Cases 2.4.1, 2.4.2 and 2.4.9 must have a Passed test case result.

Table 35. Conventional Subscriber Unit Interoperability Tests- Repeat Mode

row	Test Case	Description	Product 1 Result	Product 2 Result	Product 3 Result
226	**2.4.1****	**Matching NAC Operation and SU Unaddressed Voice Call ****			
227	2.4.1.4.1	Test Case 1 – Matching NAC operation – Unaddressed Voice Call			
228	**2.4.2****	**Matching NAC Operation – SU Routine Group Call Mode ****			
229	2.4.2.4.1	Test Case 1 – Matching NAC – SU Routine Group Call Mode			
230	**2.4.3**	**Transmit NAC Independent of Receive NAC – SU Unaddressed Voice Call**			
231	2.4.3.4.1	Test Case 1 – Independent NAC Operation – SU Unaddressed Voice Call			
232	**2.4.4**	**Transmit NAC Independent of Receive NAC – SU Routine Group Call**			
233	2.4.4.4.1	Test Case 1 – Independent NAC Operation – SU Routine Group Call			
234	**2.4.5**	**Any NAC ($F7F) Operation – SU Unaddressed Voice Call**			
235	2.4.5.4.1	Test Case 1 – NAC $F7F Operation – SU Unaddressed Voice Call			
236	**2.4.6**	**Any NAC ($F7F) Operation – SU Routine Group Call**			
237	2.4.6.4.1	Test Case 1 – NAC $F7F Operation – SU Routine Group Call			
238	**2.4.7**	**Any NAC ($F7E) Operation with Fixed Transmit NAC – SU Group Call**			
239	2.4.7.4.1	Test Case 1 – NAC $F7E Operation – SU Group Call			
240	**2.4.8**	**Emergency Call**			

row	Test Case	Description	Product 1 Result	Product 2 Result	Product 3 Result
241	2.4.8.4.1	Test Case 1 – Emergency Call			
242	**2.4.9****	**Monitor Mode – SU Group Call ****			
243	2.4.9.4.1	Test Case 1 – Monitor Mode – Receiving Group Call			
244	**2.4.10**	**Unit-to-Unit Voice Call**			
245	2.4.10.4.1	Test Case 1 – Initiate Unit-to-Unit Call from SU 1			
246	2.4.10.4.3	Test Case 3 – Initiate Unit-to-Unit Call from SU 1, No Co-Channel Interference Suppression			
247	**2.4.11**	**Unit-to-Unit Voice Call Co-Channel Interference Suppression by FNE**			
248	2.4.11.4.1	Test Case 1 – Initiate Unit-to-Unit Call from SU 1			
249	**2.4.12**	**Unit-to-Unit Voice Call – Receiving Units Also in Monitor Mode**			
250	2.4.12.4.1	Test Case 1 – Initiate Unit-to-Unit Call from SU 1			
251	**2.4.13**	**Encryption**			
252	2.4.13.4.1	Test Case 1 – Call Privacy for Encrypted Call			
253	**2.4.14**	**Accept Any NAC in Normal and Selective Squelch Mode – SU Group Call**			
254	2.4.14.4.1	Test Case 1 – Receiving group Call with receive NAC $F7F under Normal and Selective Squelch Modes			
255	**2.5.1**	**Call Alert**			
256	2.5.1.4.1	Test Case 1 – Initiate Call Alert Request from SU 1			
257	**2.5.2**	**Radio Check**			
258	2.5.2.4.1	Test Case 1 – Initiate Radio Check from SU 1			
259	**2.5.3**	**Message Update**			
260	2.5.3.4.1	Test Case 1 – Message Update Initiated by SU 1			
261	2.5.3.4.3	Test Case 3 – SU 1 to Group Message Update			
262	**2.5.4**	**Status Update**			
263	2.5.4.4.1	Test Case 1 – Status Update Initiated by SU 1			
264	2.5.4.4.3	Test Case 3 – SU to Talk Group Status Update Initiated by SU 1			
265	**2.5.5**	**Status Query**			
266	2.5.5.4.1	Test Case 1 – Status Query Initiated by SU 1			

row	Test Case	Description	Product 1 Result	Product 2 Result	Product 3 Result
267	**2.5.6**	**Radio Unit Monitor**			
268	2.5.6.4.1	Test Case 1 – Radio Unit Monitor Initiated by SU 1 – Group Call			
269	2.5.6.4.3	Test Case 3 – Radio Unit Monitor Initiated by SU 1 – Unit-to-Unit Call			

** P25 CAP Minimum Feature Requirement - Test Case Result must be a Pass (P)

Rows 226-269: In their respective columns, the vendor shall provide test case results for the representative products from a minimum of three different vendors. More 'Product Result' columns may be added if more representative products are tested.

19.8 Conventional Subscriber Unit Interoperability - FNE Dispatch Monitoring Console - Repeat Mode

The conventional interoperability (FNE dispatch repeat mode) test case results section of the Model Name worksheet is introduced by the banner shown below. It is noted that while the test cases for these test sections are identical, the 2016 CAB calls out the test cases in a specific table (Table 8) within section 2.1.3.2 of the 2016 CAB, while the 2017 CAB has the same test cases called out within a single section 2.1.3.3 of the 2017 CAB.

Table 36. Banner for Conventional Subscriber Unit - FNEDispatch - Repeat Mode Interoperability Testing

row	Conventional Subscriber Unit Interoperability - FNE Dispatch Monitoring Console - Repeat Mode (2017 CAB)		Conventional Subscriber Unit Interoperability - FNE Dispatch Monitoring Console - Repeat Mode (2016 CAB)
275	**CAB Test Section Identification**		**CAB Test Section Identification**
276	P25-CAB-CAI_TEST_REQ – July 2017, Section 2.1.3.3 - Conventional Subscriber Unit Interoperability - FNE Dispatch Monitoring Console - Repeat Mode		P25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.3.2 - [Table 8] - Conventional Interoperability Tests - FNE Includes Dispatch Consoles Mode

19.8.1 Representative Conventional Base Station Repeater Products Tested with the Subscriber Unit for Conventional Interoperability - FNE Dispatch Monitoring Console - Repeat Mode

Interoperability testing requires that the vendor test against equipment from three representative equipment vendors. The vendor states the representative base station repeater vendor name and the model name of the equipment from the representative base station repeater vendor. Each of the representative products is given a Product No. that correlates to the 'Product [x] Result' column in the test case results table directly below the representative equipment table.

The DTR Identifier is stated for each of the three representative base station repeater vendors. Table rows can be added if there are more than three vendor names.

Table 37. Representative Conventional Base Station Repeater Products Tested with the Subscriber Unit for Conventional Interoperability - FNE Dispatch Monitoring Console - Repeat Mode

row	Base Station Repeater Vendor	Model Name	Product No.	Detailed Test Report Identifier
280	[Vendor_Name]	[Model Name]	1	[DTR-P25CAPxxxxxx]
281	[Vendor_Name]	[Model Name]	2	[DTR-P25CAPxxxxxx]
282	[Vendor_Name]	[Model Name]	3	[DTR-P25CAPxxxxxx]

Rows 280-282: In their respective columns, the vendor shall provide the Subscriber Vendor name and the Model Names for the representative equipment that was tested. The DTR Identifier that corresponds to the tested representative equipment shall be recorded in the 'Detailed Test Report Identifier' column. Each representative product shall be numbered in the Product No. column. This product number corresponds to the 'Product (x) Result' column found in the Test Case Results table that follows this table.

19.8.2 Conventional Subscriber Unit Interoperability Test Case Results - FNE Dispatch Monitoring Console - Repeat Mode

The table below is used to capture the test case results for this test section. These test cases are independent of frequency band. Any frequency band may be used for these test cases. Please note the correspondence between the numbers in the column cells labelled 'Product No.' and the multiple column cells labeled 'Product [x] Result'. For clarity, 'Product No. 1' of the representative products table corresponds with 'Product 1 Results' of the test case results table; 'Product No. 2' corresponds with 'Product 2 Results'; 'Product No. 3' corresponds with 'Product 3 Results'; and so on. Table columns can be added if there are more than three vendor names.

Table 38. Conventional Subscriber Unit Interoperability Tests - FNE Dispatch Monitoring Console - Repeat Mode

Row	Test Case	Description	Product 1 Result	Product 2 Result	Product 3 Result
288	**2.6.1**	**Unaddressed Voice Call**			
289	2.6.1.4.1	Test Case 1 – Unaddressed Voice Call			
290	**2.6.2**	**Routine Group Call**			
291	2.6.2.4.1	Test Case 1 – Routine Group Call			
292	**2.6.3**	**Emergency Call**			
293	2.6.3.4.1	Test Case 1 – Emergency Call from SU			

Row	Test Case	Description	Product 1 Result	Product 2 Result	Product 3 Result
294	2.6.3.4.2	Test Case 2 – Emergency Call from DMC			
295	**2.6.4**	**All Call (System-Wide Call)**			
296	2.6.4.4.1	Initiate System-Wide Call to Collection of Talk Groups			
297	**2.6.5**	**Unit-to-Unit Voice Call**			
298	2.6.5.4.1	Test Case 1 – Initiate Unit-to-Unit Call from DMC			
299	2.6.5.4.2	Test Case 2 – Initiate Unit-to-Unit Call from SU 1			
300	**2.6.6**	**Encryption**			
301	2.6.6.4.1	Test Case 1 – Call Privacy for Encrypted Call			
302	**2.7.1**	**Emergency Alarm to Dispatch and/or other Monitoring Console**			
303	2.7.1.4.1	Test Case 1 – Emergency Alarm			
304	**2.7.2**	**Call Alert**			
305	2.7.2.4.1	Test Case 1 – Initiate Call Alert Request from DMC			
306	2.7.2.4.2	Test Case 2 – Initiate Call Alert Request from SU 1			
307	**2.7.3**	**Radio Check**			
308	2.7.3.4.1	Test Case 1 – Initiate Radio Check from DMC			
309	**2.7.4**	**Radio Unit Inhibit**			
310	2.7.4.4.1	Test Case 1 – Radio Unit Inhibit from DMC			
311	**2.7.5**	**Radio Unit Uninhibit**			
312	2.7.5.4.1	Test Case 1 – Radio Unit Uninhibit from DMC			
313	**2.7.6**	**Message Update**			
314	2.7.6.4.1	Test Case 1 – Message Update from DMC			
315	2.7.6.4.2	Test Case 2 – DMC to Group Message Update			
316	2.7.6.4.3	Test Case 3 – SU 1 to DMC Message Update			
317	2.7.6.4.4	Test Case 4 – SU 1 to Group Message Update			
318	**2.7.7**	**Status Update**			
319	2.7.7.4.1	Test Case 1 – Status Update from SU 1 to DMC			
320	2.7.7.4.2	Test Case 2 – Talk Group Status Update Initiated by SU 1			
321	**2.7.8**	**Status Query**			
322	2.7.8.4.1	Test Case 1 – Status Query Initiated by DMC			
323	**2.7.9**	**Radio Unit Monitor**			
324	2.7.9.4.1	Test Case 1 – Radio Unit Monitor Initiated by DMC – Group Call			

Row	Test Case	Description	Product 1 Result	Product 2 Result	Product 3 Result
325	2.7.9.4.2	Test Case 2 – Radio Unit Monitor Initiated by DMC – Unit-to-Unit Call			

Rows 288-325: In their respective columns, the vendor shall provide test case results for the representative products from a minimum of three different vendors. More 'Product Result' columns may be added if more representative products are tested.

19.9 Trunked Subscriber Unit Interoperability - FDMA

The trunked interoperability (FDMA) test case results section of the Model Name worksheet is introduced by the banner shown below. It is noted that the 2017 CAB adds supplementary test cases to this trunked FDMA interoperability test section. These additional test cases are not applicable to the 2016 CAB. The 2017 CAB supplementary data test cases are noted as being 2017 CAB test cases in the test case results table. If submitting under 2016 CAB testing, leave noted supplementary data test case result cell empty.

Table 39. Banner for Trunked Subscriber Unit - FDMA Interoperability Testing

row	Trunked Subscriber Unit Interoperability - FDMA (2017 CAB)		Trunked Subscriber Unit Interoperability - FDMA (2016 CAB)
329	**CAB Test Section Identification**		**CAB Test Section Identification**
330	P25-CAB-CAI_TEST_REQ – July 2017, Section 2.1.3.4 - Trunked Subscriber Unit Interoperability - FDMA (Phase 1)		P25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.3.3 - Trunked Mode Operation

19.9.1 Representative Trunked Base Station Repeater Products Tested with the Subscriber Unit for Trunked Interoperability - FDMA

Interoperability testing requires that the vendor test against equipment from three representative equipment vendors. The vendor states the representative base station repeater vendor name and the model name of the equipment from the representative base station repeater vendor. Each of the representative products is given a Product No. that correlates to the 'Product [x] Result' column in the test case results table directly below the representative equipment table.

The DTR Identifier is stated for each of the three representative base station repeater vendors. Table rows can be added if there are more than three vendor names.

Table 40. Representative Trunked Base Station Repeater Products Tested with the Subscriber Unit for Trunked Interoperability - FDMA

row	Base Station Repeater Vendor	Model Name	Product No.	Detailed Test Report Identifier
334	[Vendor_Name]	[Model Name]	1	[DTR-P25CAPxxxxxx]
335	[Vendor_Name]	[Model Name]	2	[DTR-P25CAPxxxxxx]
336	[Vendor_Name]	[Model Name]	3	[DTR-P25CAPxxxxxx]

Rows 334-336: In their respective columns, the vendor shall provide the Subscriber Vendor name and the Model Names for the representative equipment that was tested. The DTR Identifier that corresponds to the tested representative equipment shall be recorded in the 'Detailed Test Report Identifier' column. Each representative product shall be numbered in the Product No. column. This product number corresponds to the 'Product (x) Result' column found in the Test Case Results table that follows this table.

19.9.2 Trunked Subscriber Unit Interoperability Test Case Results - FDMA

The table below is used to capture the test case results for this test section. These test cases are independent of frequency band. Any frequency band may be used for these test cases. Please note the correspondence between the numbers in the column cells labelled 'Product No.' of the representative Products table and the multiple column cells labeled 'Product [x] Result' of the Test Case Results table. For clarity, 'Product No. 1' of the representative products table corresponds with 'Product 1 Results' of the test case results table; 'Product No. 2' corresponds with 'Product 2 Results'; 'Product No. 3' corresponds with 'Product 3 Results'; and so on. Table columns can be added if there are more than three vendor names.

The Test Case Results Table is used for both the 2016 and 2017 CAB. The 2016 CAB included the test cases that were originally included in the 2010 CAB. The 2017 CAB added the Group Call Interrupt test case plus additional Supplementary Data test cases.

The following testing applies for the 2016 Test Requirements CAB: Full Registration, Group Voice Call (except Group Call Interrupt), Unit to Unit Voice Call, Broadcast Voice Call, Affiliation, Announcement Group Call, Emergency Alarm, Emergency Group Call, Encryption, and Intra-location Registration Area Roaming.

The following testing applies for the 2017 Test Requirements CAB: Deregistration, System Call, Call Alert, Short Message, Status Query, Status Update, Radio Unit Monitoring, Radio Unit Disable/Re-enable, and Radio Check.

If testing under the 2016 Test Requirements CAB, leave the 2017 CAB Test Case result table cells empty.

Table 41. Trunked Subscriber Unit Interoperability Tests - FDMA

row	Test Case	Description	Product 1 Home Result	Product 1 Inter-SYS Roaming Result	Product 1 Inter-WACN Roaming Result	Product 2 Home Result	Product 2 Inter-SYS Roaming Result	Product 2 Inter-WACN Roaming Result	Product 3 Home Result	Product 3 Inter-SYS Roaming Result	Product 3 Inter-WACN Roaming Result
343	**2.2.1**	**Full Registration**									
344	2.2.1.4.1	Test Case 1 – Valid Registration									
345	2.2.1.4.2	Test Case 2 – Denied or Refused Registration									
346	2.2.1.4.3	Test Case 3 – Unverified Registration									
347	**2.2.2**	**Group Voice Call**									
348	2.2.2.4.1	Test Case 1 – Group Call Granted									
349	2.2.2.4.2	Test Case 2 – Group Call Denied									
350	2.2.2.4.3	Test Case 3 – Group Call Request Queued									
351	2.2.2.4.4	Test Case 4 – Group Call Interrupt ***									
352	**2.2.3**	**Unit-to-Unit Voice Call**									
353	2.2.3.4.1	Test Case 1 – Unit-to-Unit Call with Target Availability Check									
354	2.2.3.4.2	Test Case 2 - Unit-to-Unit Call with Target Availability Check- Denied by Target									
355	2.2.3.4.3	Test Case 3 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment After Target Availability Check									
356	2.2.3.4.4	Test Case 4 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment Before Target Availability Check									

row	Test Case	Description	Product 1 Home Result	Product 1 Inter-SYS Roaming Result	Product 1 Inter-WACN Roaming Result	Product 2 Home Result	Product 2 Inter-SYS Roaming Result	Product 2 Inter-WACN Roaming Result	Product 3 Home Result	Product 3 Inter-SYS Roaming Result	Product 3 Inter-WACN Roaming Result
357	2.2.3.4.5	Test Case 5 – Unit-to-Unit Call without Target Availability Check									
358	2.2.3.4.6	Test Case 6 – Unit-to-Unit Call Queued without Target Availability Check									
359	2.2.3.4.7	Test Case 7 – Unit-to-Unit Call Denied									
360	**2.2.4**	**Broadcast Voice Call**									
361	2.2.4.4.1	Test Case 1 – Broadcast Voice Call									
362	**2.2.5**	**Affiliation**									
363	2.2.5.4.1	Test Case 1 – Radio Permitted to Affiliate with New Group									
364	2.2.5.4.2	Test Case 2 – Radio Denied Affiliation to New Group									
365	**2.2.6**	**Announcement Group Call**									
366	2.2.6.4.1	Test Case 1 – Collection of Talk Groups Receive Call									
367	**2.2.7**	**Emergency Alarm**									
368	2.2.7.4.1	Test Case 1 – Emergency Alarm									
369	**2.2.8**	**Emergency Group Call**									
370	2.2.8.4.1	Test Case 1 – Emergency Call									
371	**2.2.10**	**Encryption**									
372	2.2.10.4.1	Test Case 1 – Call Privacy for Encrypted Call									
373	**2.2.11**	**Intra-Location Registration Area Roaming**									
374	2.2.11.4.1	Test Case 1 – Idle Radio									

row	Test Case	Description	Product 1 Home Result	Product 1 Inter-SYS Roaming Result	Product 1 Inter-WACN Roaming Result	Product 2 Home Result	Product 2 Inter-SYS Roaming Result	Product 2 Inter-WACN Roaming Result	Product 3 Home Result	Product 3 Inter-SYS Roaming Result	Product 3 Inter-WACN Roaming Result
375	**2.2.13**	**Deregistration *****									
376	2.2.13.4.1	Test Case 1 – Deregistration									
377	**2.2.14**	**System Call *****									
378	2.2.14.4.1	Test Case 1 – System Call									
379	**2.2.15**	**Call Alert *****									
380	2.2.15.4.1	Test Case 1 – Call Alert									
381	**2.2.16**	**Short Message *****									
382	2.2.16.4.1	Test Case 1 – Short Message									
383	**2.2.17**	**Status Query *****									
384	2.2.17.4.1	Test Case 1 – Status Query									
385	**2.2.18**	**Status Update *****									
386	2.2.18.4.1	Test Case 1 – Status Update									
387	**2.2.19**	**Radio Unit Monitoring *****									
388	2.2.19.4.1	Test Case 1 – Individual Non-Silent									
389	2.2.19.4.2	Test Case 2 – Individual Silent									
390	2.2.19.4.3	Test Case 3 – Group Non-Silent									
391	2.2.19.4.4	Test Case 4 – Group Silent									
392	**2.2.20**	**Radio Unit Disable/Re-Enable *****									
393	2.2.20.4.1	Test Case 1 – Radio Unit Disable									
394	2.2.20.4.2	Test Case 2 – Radio Unit Re-Enable									
395	**2.2.21**	**Radio Check *****									
396	2.2.21.4.1	Test Case 1 – Radio Check Successful									

*** Leave test case result empty if submitting under the 2016 Test Requirements CAB.

Rows 343-374 except row 351: These rows apply to the 2016 Test Requirements CAB. In their respective columns, the vendor shall provide test case results of representative products from a minimum of three different vendors. More 'Product Result' columns may be added if more representative products are tested. If testing under the 2016 Test Requirements CAB, leave the 2017 Test Requirements CAB test case result table cells empty.

Rows 375-396 including row 351: These rows apply to the 2017 Test Requirements CAB. In their respective columns, the vendor shall provide test case results of representative products from a minimum of three different vendors. More 'Product Result' columns may be added if more representative products are tested. If testing under the 2016 Test Requirements CAB, leave the 2017 Test Requirements CAB test case result table cells empty.

19.10 Trunked Subscriber Unit Interoperability - TDMA

The trunked interoperability (TDMA) test case results section of the Model Name worksheet is introduced by the banner shown below. The TDMA test cases are for the TDMA features that involved the assignment of a TDMA channel resource. Features that are supported on the trunked control channel are not retested in this TDMA interoperability test section. If submitting under 2016 CAB testing, leave the TDMA Test Case Results table empty.

Table 42. Banner for Trunked Subscriber Unit - TDMA Interoperability Testing

Row	**Trunked Subscriber Unit Interoperability - TDMA (2017 CAB only, leave empty for 2016 CAB)**
401	**CAB Test Section Identification**
402	P25-CAB-CAI_TEST_REQ – July 2017, Section 2.1.3.5 - Trunked Subscriber Unit Interoperability - TDMA (Phase 2)

19.10.1 Representative Trunked Base Station Repeater Products Tested with the Subscriber Unit for Trunked Interoperability - TDMA

Interoperability testing requires that the vendor test against equipment from three representative equipment vendors. The vendor states the representative base station repeater vendor name and the model name of the equipment from the representative base station repeater vendor. Each of the representative products is given a Product No. that correlates to the 'Product [x] Result' column in the test case results table directly below the representative equipment table.

The DTR Identifier is stated for each of the three representative base station repeater vendors. Table rows can be added if there are more than three vendor names.

Table 43. Representative Trunked Base Station Repeater Products Tested with the Subscriber Unit for Trunked Interoperability - TDMA

row	Base Station Repeater Vendor	Model Name	Product No.	Detailed Test Report Identifier
406	[Vendor_Name]	[Model Name]	1	[DTR-P25CAPxxxxxx]
407	[Vendor_Name]	[Model Name]	2	[DTR-P25CAPxxxxxx]
408	[Vendor_Name]	[Model Name]	3	[DTR-P25CAPxxxxxx]

Rows 406-408: In their respective columns, the vendor shall provide the Base Station Repeater Vendor name and the Model Names for the representative equipment that was tested. The DTR Identifier that corresponds to the tested representative equipment shall be recorded in the 'Detailed Test Report Identifier' column. Each representative product shall be numbered in the Product No. column. This product number corresponds to the 'Product (x) Result' column found in the Test Case Results table that follows this table.

19.10.2 Trunked Subscriber Unit Interoperability Test Case Results - TDMA

The table below is used to capture the test case results for this test section. These test cases are independent of frequency band. Any frequency band may be used for these test cases. Please note the correspondence between the numbers in the column cells labelled 'Product No.' of the Representative Products table and the multiple column cells labeled 'Product [x] Result' of the Test Case Results table. For clarity, 'Product No. 1' of the Representative Products table corresponds with 'Product 1 Results' of the test case results table; 'Product No. 2' corresponds with 'Product 2 Results'; 'Product No. 3' corresponds with 'Product 3 Results'; and so on. Table columns can be added if there are more than three vendor names.

Table 44. Trunked Subscriber Unit Interoperability Tests - TDMA

row	Test Case	Description	Product 1 Home Result	Product 1 Inter-SYS Roaming Result	Product 1 Inter-WACN Roaming Result	Product 2 Home Result	Product 2 Inter-SYS Roaming Result	Product 2 Inter-WACN Roaming Result	Product 3 Home Result	Product 3 Inter-SYS Roaming Result	Product 3 Inter-WACN Roaming Result
414	**2.2.1**	**Full Registration**									
415	2.2.1.4.1	Test Case 1 – Valid Registration									
416	**2.2.2**	**Group Voice Call**									
417	2.2.2.4.1	Test Case 1 – Group Call Granted									

row	Test Case	Description	Product 1 Home Result	Product 1 Inter-SYS Roaming Result	Product 1 Inter-WACN Roaming Result	Product 2 Home Result	Product 2 Inter-SYS Roaming Result	Product 2 Inter-WACN Roaming Result	Product 3 Home Result	Product 3 Inter-SYS Roaming Result	Product 3 Inter-WACN Roaming Result
418	2.2.2.4.3	Test Case 3 – Group Call Request Queued									
419	2.2.2.4.4	Test Case 4 – Group Call Interrupt									
420	**2.2.3**	**Unit-to-Unit Voice Call**									
421	2.2.3.4.1	Test Case 1 – Unit-to-Unit Call with Target Availability Check									
422	2.2.3.4.3	Test Case 3 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment After Target Availability Check									
423	2.2.3.4.4	Test Case 4 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment Before Target Availability Check									
424	2.2.3.4.5	Test Case 5 – Unit-to-Unit Call without Target Availability Check									
425	2.2.3.4.6	Test Case 6 – Unit-to-Unit Call Queued without Target Availability Check									
426	**2.2.4**	**Broadcast Voice Call**									
427	2.2.4.4.1	Test Case 1 – Broadcast Voice Call									
428	**2.2.6**	**Announcement Group Call**									
429	2.2.6.4.1	Test Case 1 – Collection of Talk Groups Receive Call									
430	**2.2.8**	**Emergency Group Call**									
431	2.2.8.4.1	Test Case 1 – Emergency Call									
432	**2.2.10**	**Encryption**									

row	Test Case	Description	Product 1 Home Result	Product 1 Inter-SYS Roaming Result	Product 1 Inter-WACN Roaming Result	Product 2 Home Result	Product 2 Inter-SYS Roaming Result	Product 2 Inter-WACN Roaming Result	Product 3 Home Result	Product 3 Inter-SYS Roaming Result	Product 3 Inter-WACN Roaming Result
433	2.2.10.4.1	Test Case 1 – Call Privacy for Encrypted Call									
434	**2.2.14**	**System Call**									
435	2.2.14.4.1	Test Case 1 – System Call									
436	**2.2.19**	**Radio Unit Monitoring**									
437	2.2.19.4.1	Test Case 1 – Individual Non-Silent									
438	2.2.19.4.2	Test Case 2 – Individual Silent									
439	2.2.19.4.3	Test Case 3 – Group Non-Silent									
440	2.2.19.4.4	Test Case 4 – Group Silent									
441	**2.2.26**	**Transmitting Subscriber Forced Preemption**									
442	2.2.26.4.1	Test Case 1 – TDMA SU Forced Audio Preemption									
443	2.2.26.4.2	Test Case 2 – TDMA SU Forced Emergency Call Ruthless Preemption									

Rows 414-443: In their respective columns, the vendor shall provide test case results for the representative products from a minimum of three different vendors. More 'Product Result' columns may be added if more representative products are tested.