

Project 25 Compliance Assessment Program

SDOC – BK TECHNOLOGIES – BKR 5000-V

March 31, 2020

SUBSCRIBER PRODUCT INFORMATION

Subscriber Info	Detail
Model Name:	BKR 5000-V
Tested Software Versions:	Release: 7.5.8.22 FW:5.8.20 DSP: 5.8.6 File Format: 5.5 BSP: 5.8.12
Hardware Capabilities/Options & Software Options:	P25 Conventional, P25 Trunking, P25 TDMA Trunking, AES-256 Encryption / 136 - 174 MHz / Full Display; Full Keypad

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

TEST REQUIREMENTS CAB IDENTIFICATION

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

check one	P25 CAP Test Requirement CAB	Details
<input checked="" type="checkbox"/>	P25-CAB-CAI_TEST_REQ – July 2017	Includes August 2016 P25 CAP Test Requirements; Adds TDMA performance and interoperability testing and trunked supplementary data testing
<input type="checkbox"/>	P25-CAB-CAI_TEST_REQ - October 2018	Includes all July 2017 P25 CAP Test Requirements; Adds minor updates to conventional interoperability testing due to TIA standard update

SUMMARY TEST REPORT IDENTIFIER¹

Summary Test Report (STR) Identifier:	STR - BK TECHNOLOGIES - SUBSCRIBER
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CONTACT INFORMATION

Vendor Info	Details
Vendor Name:	BK TECHNOLOGIES
Vendor Website URL:	https://www.bktechnologies.com/
P25 CAP Contact Name:	Rich Pozna
P25 CAP Contact Phone:	(224) 375-0746
P25 CAP Contact Email:	MRpozna@bktechnologies.com

¹ The Summary Test Report for this product is available upon request. Please send your STR request to P25CAP@hq.dhs.gov and please include the subscriber 'Vendor Name'.

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ENCRYPTION STATEMENT

This product complies with the P25 CAP Encryption Requirements CAB (P25-CAB-ENC_REQ). The checked box indicates how the product was tested.

X	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.

CONVENTIONAL PERFORMANCE

The Subscriber product has been tested for Conventional Performance. All requirements were passed except for those requirements identified below under Unsupported or Failed Requirements.

P25 CAP Conventional Performance Testing Coverage

Receiver Tests: Reference Sensitivity, Faded Reference Sensitivity, Signal Delay Spread Capability, Adjacent Channel Rejection, Offset Adjacent Channel Rejection, Co-Channel Rejection, Spurious Response Rejection, Intermodulation Rejection, Signal Displacement Bandwidth, Late Entry Unsilence Delay, and Receiver Throughput Delay.

Transmitter Tests: Unwanted Emissions (Adjacent Channel Power Ratio), Transmitter Power and Encoder Attack Time, Transmitter Throughput Delay, Frequency Deviation for C4FM, and Modulation Fidelity, Transient Frequency Behavior.

Unsupported or Failed Requirements

1. None

TRUNKING PERFORMANCE - FDMA

The Subscriber product has been tested for Trunking Performance - FDMA. All requirements were passed except for those requirements identified below under Unsupported or Failed Requirements.

P25 CAP FDMA Trunking Performance Testing Coverage

Receiver Tests: Reference Sensitivity, Faded Reference Sensitivity, Signal Delay Spread Capability, Adjacent Channel Rejection, Offset Adjacent Channel Rejection, Co-Channel Rejection, Spurious Response Rejection, Intermodulation Rejection, and Signal Displacement Bandwidth.

Transmitter Tests: Unwanted Emissions (Adjacent Channel Power Ratio), Power Attack time, Encoder Attack Time, Transmitter Throughput Delay, Frequency Deviation for C4FM, and Modulation Fidelity, Transient Frequency Behavior.

Trunked Tests: Trunking Control Channel Slot Times, Trunking Request Time, and Transmitter Time to Key on a Traffic Channel.

Unsupported or Failed Requirements

1. None

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TRUNKING PERFORMANCE - TDMA

The Subscriber product has been tested for Trunking Performance - TDMA. All requirements were passed except for those requirements identified below under Unsupported or Failed Requirements.

P25 CAP TDMA Trunking Performance Testing Coverage

Receiver Tests: Reference Sensitivity, Faded Reference Sensitivity, Signal Delay Spread Capability, Adjacent Channel Rejection, Offset Adjacent Channel Rejection, Co-Channel Rejection, Spurious Response Rejection, Intermodulation Rejection, and Signal Displacement Bandwidth.

Transmitter Tests: Unwanted Emissions (Adjacent Channel Power Ratio), Frequency Deviation for H-CPM, Modulation Fidelity, Symbol Rate Accuracy, H-CPM Logical Channel Power measurements, and H-CPM Channel Time Alignment.

Unsupported or Failed Requirements

1. None

CONVENTIONAL DIRECT MODE INTEROPERABILITY

The Subscriber product has been tested for Conventional Direct Mode Interoperability. All test cases were passed except for those test cases identified below under Unsupported or Failed Test Cases. Test cases that passed but require specific, sometimes optional, product capabilities are also identified below.

P25 CAP Direct Mode Interoperability Testing Coverage

Network Access Code (NAC) Operation, Group Voice Call, Emergency Call, Unit-to-Unit Voice Call, Encryption, Call Alert, Radio Check, Message Update, Status Update, Status Query, and Radio Unit Monitor.

Unsupported or Failed Test Cases

1. Status Query and Radio Unit Monitor are unsupported

Optional Product Capabilities Required to Pass Test Cases

1. None

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CONVENTIONAL REPEAT MODE INTEROPERABILITY

The Subscriber product has been tested for Conventional Repeat Mode Interoperability. All test cases were passed except for those test cases identified below under Unsupported or Failed Test Cases. Test cases that passed but require specific, sometimes optional, product capabilities are also identified below.

P25 CAP Repeat Mode Interoperability Testing Coverage

Network Access Code (NAC) Operation, Group Voice Call, Emergency Call, Unit-to-Unit Voice Call, Encryption, Call Alert, Radio Check, Message Update, Status Update, Status Query, and Radio Unit Monitor.

Unsupported or Failed Test Cases

1. Status Query and Radio Unit Monitor are unsupported

Optional Product Capabilities Required to Pass Test Cases

1. None

CONVENTIONAL REPEAT MODE with DISPATCH MONITORING CONSOLE INTEROPERABILITY

The Subscriber product has been tested for Conventional Repeat Mode with Dispatch Monitoring Console Interoperability. All test cases were passed except for those test cases identified below under Unsupported or Failed Test Cases. Test cases that passed but require specific, sometimes optional, product capabilities are also identified below.

P25 CAP Repeat Mode Interoperability Testing Coverage

Group Voice Call, Emergency Call, All Call, Unit-to-Unit Voice Call, Encryption, Emergency Alarm, Call Alert, Radio Check, Radio Unit Inhibit/Uninhibit, Message Update, Status Update, Status Query, and Radio Unit Monitor.

Unsupported or Failed Test Cases

1. Status Update – Test Case 2, Status Query, and Radio Unit Monitor are unsupported
2. Message Update – Test Case 1 and Test Case 2 are unsupported by the representative FNE dispatch monitoring console tested with the subscriber under test

Optional Product Capabilities Required to Pass Test Cases

1. None

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TRUNKED SUBSCRIBER UNIT INTEROPERABILITY – FDMA

The Subscriber product has been tested for Trunked Interoperability - FDMA. All test cases were passed except for those test cases identified below under Unsupported or Failed Test Cases. Test cases that passed but require specific, sometimes optional, product capabilities are also identified below.

P25 CAP FDMA Trunked Interoperability Testing Coverage

Full Registration, Group Voice Call, Unit to Unit Voice Call, Broadcast Voice Call, Affiliation, Announcement Group Call, Emergency Alarm, Emergency Group Call, Encryption, Intra-Location Registration Area Roaming, Deregistration, System Call, Call Alert, Short Message, Status Query, Status Update, Radio Unit Monitoring, Radio Unit Disable/Re-Enable, and Radio Check.

Unsupported or Failed Test Cases

1. The following functionality was unsupported by the subscriber under test
 - a. Home System Operation:
 - i. Radio Unit Monitoring - Test Case 2 – Individual Silent
 - b. Inter-System Roaming Operation:
 - i. Unit-to-Unit Voice Call –
 1. Test Case 1 – Unit-to-Unit Call with Target Availability Check
 2. Test Case 2 - Unit-to-Unit Call with Target Availability Check- Denied by Target
 3. Test Case 3 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment After Target Availability Check
 4. Test Case 5 – Unit-to-Unit Call without Target Availability Check
 5. Test Case 6 – Unit-to-Unit Call Queued without Target Availability Check
 - ii. Intra-Location Registration Area Roaming , Call Alert, Short Message, Status Update, Radio Unit Monitoring
 - c. Inter-WACN Roaming Operation:
 - i. Full Registration - Test Case 3 – Unverified Registration
2. The following functionality was unsupported by the representative base station repeaters/FNEs tested with the subscriber under test
 - a. Home System Operation:
 - i. Unit-to-Unit Voice Call – Test Case 4 - Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment Before Target Availability Check
 - ii. System Call
 - b. Inter-System Roaming Operation:
 - i. System Call
 - ii. Status Query
 - c. Inter-WACN Roaming Operation:
 - i. Unit-to-Unit Voice Call, System Call, Call Alert, Short Message , Status Query, Status Update, Radio Unit Monitoring, Radio Unit Disable/Re-Enable, Radio Check

Optional Product Capabilities Required to Pass Test Cases

1. None

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TRUNKED SUBSCRIBER UNIT INTEROPERABILITY – TDMA

The Subscriber product has been tested for Trunked Interoperability - TDMA. All test cases were passed except for those test cases identified below under Unsupported or Failed Test Cases. Test cases that passed but require specific, sometimes optional, product capabilities are also identified below.

P25 CAP TDMA Trunked Interoperability Testing Coverage

Registration, Group Voice Call, Unit-to-Unit Voice Call, Broadcast Call, Announcement Group Call, Emergency Group Call, Encryption Group Call, System Call, Radio Unit Monitoring, and Transmitting Subscriber Forced Preemption.

Unsupported or Failed Test Cases

1. The following functionality was unsupported by the subscriber under test
 - a. Home System Operation:
 - i. Unit to Unit Call - Test Case 5 – Unit-to-Unit Call without Target Availability Check
 - ii. Unit to Unit Call - Test Case 6 – Unit-to-Unit Call Queued without Target Availability Check
 - iii. Radio Unit Monitoring - Test Case 2 – Individual Silent
 - b. Inter-System Roaming Operation:
 - i. Unit-to-Unit Voice Call - Test Case 1 – Unit-to-Unit Call with Target Availability Check
 - ii. Unit-to-Unit Voice Call - Test Case 3 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment After Target Availability Check
 - iii. Unit-to-Unit Voice Call - Test Case 5 – Unit-to-Unit Call without Target Availability Check
 - iv. Unit-to-Unit Voice Call - Test Case 6 – Unit-to-Unit Call Queued without Target Availability Check
 - v. Radio Unit Monitoring
2. The following functionality was unsupported by the representative base station repeaters/FNEs tested with the subscriber under test
 - a. Home System Operation:
 - i. Unit-to-Unit Voice Call – Test Case 4 - Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment Before Target Availability Check
 - ii. System Call
 - b. Inter-System Roaming Operation:
 - i. Unit-to-Unit Voice Call – Test Case 4 - Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment Before Target Availability Check
 - ii. System Call
 - iii. Transmitting Subscriber Forced Preemption
 - c. Inter-WACN Roaming Operation:
 - i. Unit-to-Unit Voice Call, System Call, Radio Unit Monitoring,
 - ii. Transmitting Subscriber Forced Preemption - Test Case 1 – TDMA SU Forced Audio Preemption

Optional Product Capabilities Required to Pass Test Cases

1. None

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SIGNATURE AND DATE



March 31, 2020

Date Signed

Vendor's Authorized Representative Signature

Brian W. Jones

Vendor's Authorized Representative Printed Name

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