

# FCC TITLE 47 PART 15C REUSING DATA SPOT CHECK TEST REPORT

Client: Imarda NZ Ltd  
Address: Level 2, 135 Broadway, Newmarket, Auckland 1023  
New Zealand  
Report Number: 0929COR\_V301\_FCC15C\_SpotCheck  
Date of Spot Checks: August 2016  
File Number: COR160421

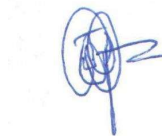
Equipment Name: V301  
Equipment Model Number: V301-336-IX  
Equipment Serial Numbers: 02205535  
Equipment FCC ID: TXXV301-IX  
Equipment Description: Vehicle Tracking Device with Bluetooth

Result: **COMPLIES**

Tested by: Richard Turner



Approved by: Colin Gan



Date of Issue: 29<sup>th</sup> September 2016

**AUSTEST (NSW) FCC REGISTRATION NUMBER 90455**

Results appearing herein relate only to the sample(s) tested.

This report is issued errors and omissions exempt and is subject to withdrawal at Austest Laboratories discretion.

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Table of Contents:

|   |                                      |   |
|---|--------------------------------------|---|
| 1 | INTRODUCTION.....                    | 3 |
| 2 | DIFFERENCE .....                     | 3 |
| 3 | SPOT CHECK VERIFICATION DATA.....    | 4 |
| 4 | REFERENCE DETAIL.....                | 5 |
|   | APPENDIX A – SPOT CHECK RESULTS..... | 6 |

Report Revision History:

| Date       | Report Number                 | Changes   |
|------------|-------------------------------|---|
| 23/08/2016 | 0823COR_V301_FCC15C_SpotCheck | Original report   |
| 29/09/2016 | 0929COR_V301_FCC15C_SpotCheck | Addition of test standard used in Section 3.<br>Updated 20dB BW & Output Power plots for variant in Appendix A. |

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## 1 INTRODUCTION

The original model (FCC ID: TXXV301) and the variant model (FCC ID: TXXV301-IX) has identical PCB layout, antenna, software implementation for Bluetooth. Based on their similarity, the FCC Part 15C test data issued for the original also applies to the variant model.

The applicant takes full responsibility that the test data as referenced in Section 4 below represent compliance for this variant model (FCC ID: TXXV301-IX).

## 2 DIFFERENCE

The original model (FCC ID: TXXV301) and the variant model (FCC ID: TXXV301-IX) has identical PCB layout, antenna, software implementation for Bluetooth. The details of similarity and difference can be found in the following Table.

|                     |                    | Original Model<br>(FCC ID: TXXV301) | Variant Model<br>(FCC ID: TXXV301-IX) |
|---------------------|--------------------|-------------------------------------|---------------------------------------|
| Wireless Technology | Mode               | Frequency (MHz)                     |                                       |
| GSM                 | GSM                | 850 / 1900                          |                                       |
| 3G (UMTS)           | FDD                | B5 / B2                             |                                       |
| WiFi                | 802.11b/g          | 2412 - 2462                         | None                                  |
| Bluetooth           | Bluetooth v2.0+EDR | 2402 - 2480                         |                                       |

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### 3 SPOT CHECK VERIFICATION DATA

Spot check measurements were done in accordance with:

- ANSI C63.10: 2013.
- DA 00-705, Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

Spot check summary as follows:

| Test Item  | Mode      | Original Model (TXXV301)     | Variant Model (TXXV301-IX)   | Difference                            |
|--|-----------|------------------------------|------------------------------|---------------------------------------|
| 20dB Bandwidth - Section 15.247(a)(1)                      | Bluetooth | 1.046MHz                     | 1.046MHz                     | 0.000MHz                              |
| Channel Separation - Section 15.247(a)(1)                  | Bluetooth | 1.000MHz                     | 1.000MHz                     | 0.000MHz                              |
| Time of Occupancy (Dwell Time) - Section 15.247(a)(1)(iii) | Bluetooth | 400µs                        | 400µs                        | 0µs                                   |
| Peak Conducted Output Power - Section 15.247(b)(1)         | Bluetooth | -7.01dBm                     | -10.46dBm                    | 3.45db                                |
| Out of band emissions – Section 15.247(d)                  | Bluetooth | Refer to plots in Appendix A | Refer to plots in Appendix A | There are no significant differences. |

#### Conclusion:

Spot checks between the original model and the variant model (using the same settings as for the original model) demonstrate that the original test data from the original model remains representative for the variant model.

Comparative test plots of original model and variant model can be found in Appendix A of this document.

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#### 4 REFERENCE DETAIL

| Equipment Class | Reference FCC ID | Type Grant / Permissive Change | Date       | Reference Application | Folder Test / RF Exposure         | Report Title             |
|-----------------|------------------|--------------------------------|------------|-----------------------|-----------------------------------|--------------------------|
| DSS             | TXXV301          | Original Grant                 | 08/03/2015 | TXXV301-IX            | Part 15C<br>(0731IMA_V301_FCC15C) | Section 11 for Bluetooth |

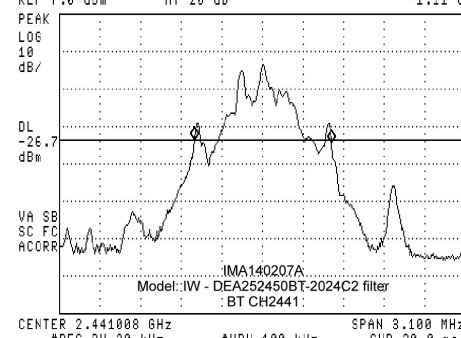
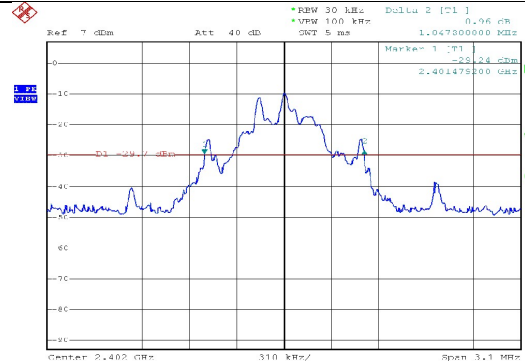
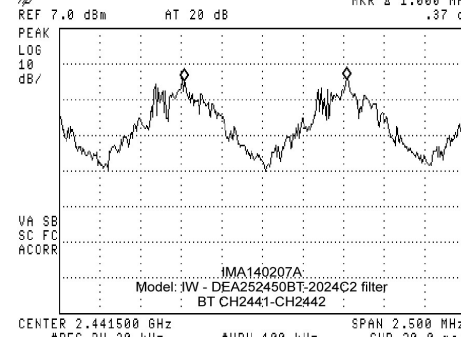
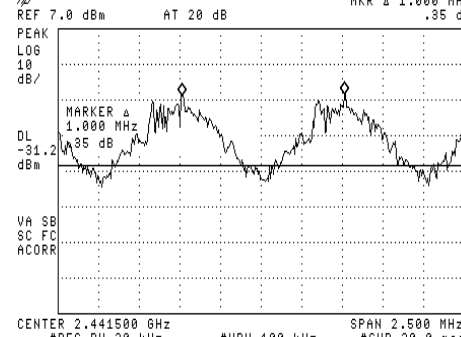
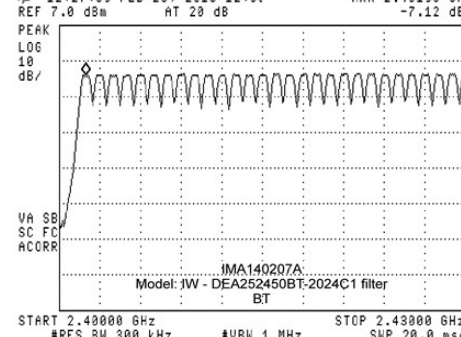
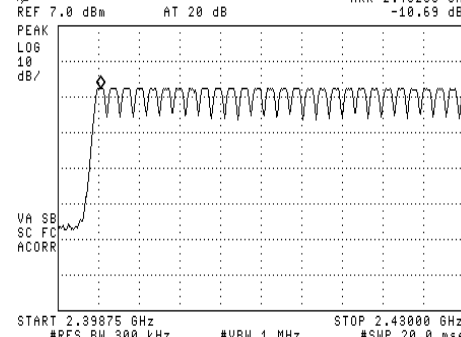
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## APPENDIX A – SPOT CHECK RESULTS

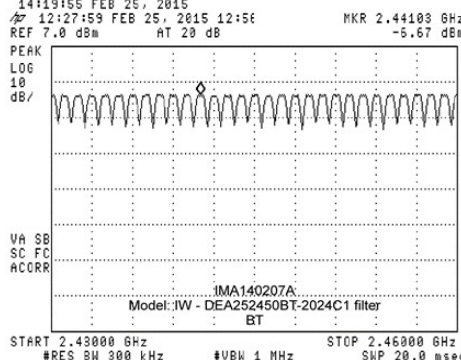
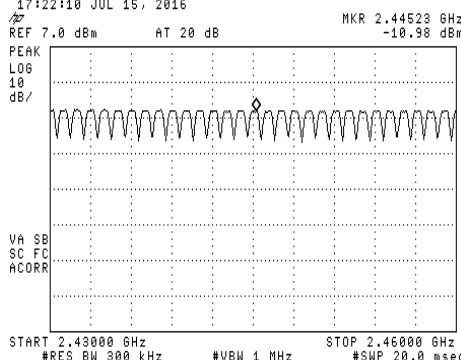
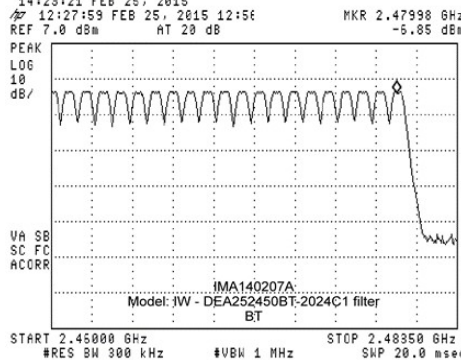
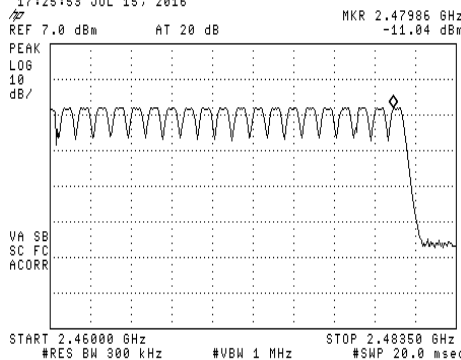
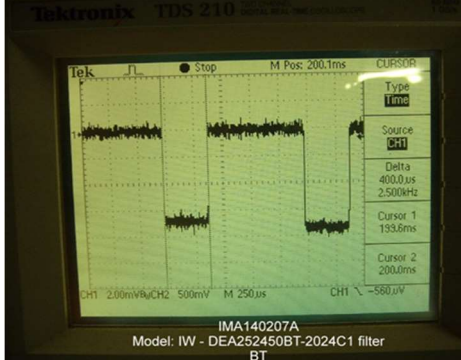
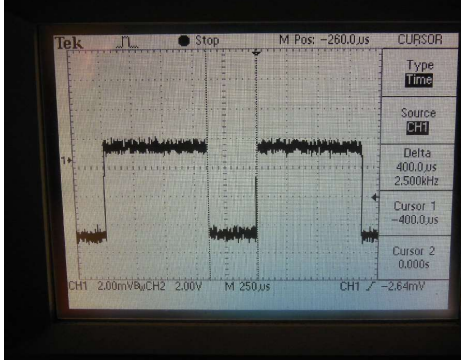
| Test  | Original Model<br>(TXXV301)  | Variant Model<br>(TXXV301-IX)   |
|---|--|---|
| <b>15.247 – OPERATION WITHIN THE BANDS 902-928MHz, 2400-2483.5MHz, AND 5725-5850MHz</b> |  |   |
| 20dB<br>Bandwidth -<br>Section<br>15.247(a)(1)  | <p>10:57:20 JUN 26, 2015<br/>           REF 7.0 dBm AT 20 dB MKR <math>\Delta</math> 1.046 MHz -1.11 dB</p>  <p>IMA140207A<br/>           Model: JV - DEA252450BT-2024C2 filter<br/>           BT CH2441</p> <p>CENTER 2.441000 GHz SPAN 3.100 MHz<br/>           #RES BW 30 kHz #VBW 100 kHz SWP 20.0 msec</p>       |  <p>IMA140207A<br/>           Model: JV - DEA252450BT-2024C2 filter<br/>           BT CH2441</p> <p>CENTER 2.441000 GHz SPAN 3.100 MHz<br/>           #RES BW 30 kHz #VBW 100 kHz SWP 20.0 msec</p>   |
| Channel<br>Separation -<br>Section<br>15.247(a)(1)                                      | <p>11:23:57 JUN 26, 2015<br/>           REF 7.0 dBm AT 20 dB MKR <math>\Delta</math> 1.000 MHz .37 dB</p>  <p>IMA140207A<br/>           Model: JV - DEA252450BT-2024C2 filter<br/>           BT CH2441-CH2442</p> <p>CENTER 2.441500 GHz SPAN 2.500 MHz<br/>           #RES BW 30 kHz #VBW 100 kHz SWP 20.0 msec</p> | <p>17:08:27 JUL 15, 2016<br/>           REF 7.0 dBm AT 20 dB MKR <math>\Delta</math> 1.000 MHz .35 dB</p>  <p>IMA140207A<br/>           Model: JV - DEA252450BT-2024C2 filter<br/>           BT CH2441-CH2442</p> <p>CENTER 2.441500 GHz SPAN 2.500 MHz<br/>           #RES BW 30 kHz #VBW 100 kHz SWP 20.0 msec</p> |
| Number of<br>Hopping<br>Frequencies -<br>Section<br>15.247(a)(1)(iii)                   | <p>14:13:30 FEB 25, 2015<br/>           REF 7.0 dBm AT 20 dB MKR <math>\Delta</math> 2.40195 GHz -7.12 dBm</p>  <p>IMA140207A<br/>           Model: JV - DEA252450BT-2024C1 filter<br/>           BT</p> <p>START 2.40000 GHz STOP 2.43000 GHz<br/>           #RES BW 300 kHz #VBW 1 MHz SWP 20.0 msec</p>          | <p>17:17:03 JUL 15, 2016<br/>           REF 7.0 dBm AT 20 dB MKR <math>\Delta</math> 2.40203 GHz -10.69 dBm</p>  <p>IMA140207A<br/>           Model: JV - DEA252450BT-2024C1 filter<br/>           BT</p> <p>START 2.39875 GHz STOP 2.43000 GHz<br/>           #RES BW 300 kHz #VBW 1 MHz SWP 20.0 msec</p>         |

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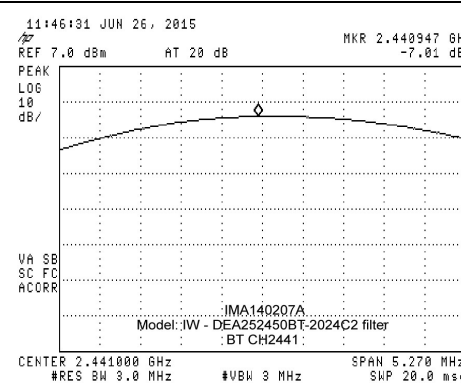
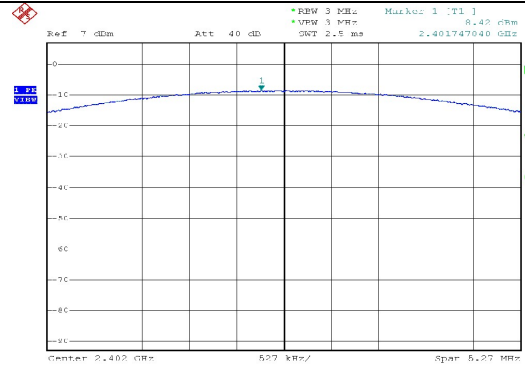
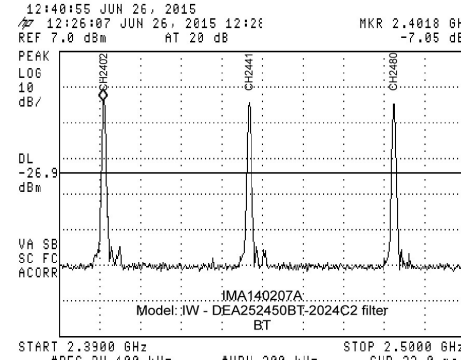
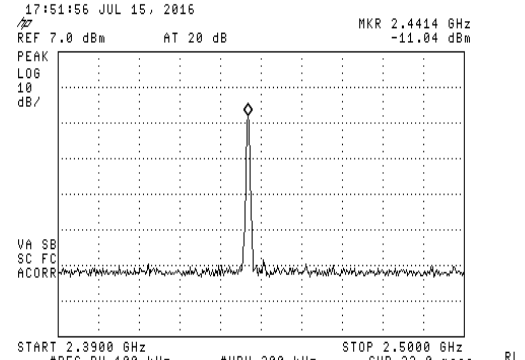
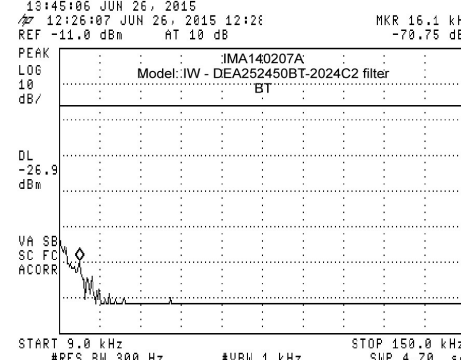
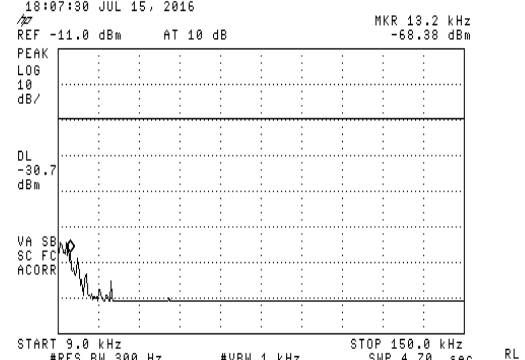
| Test   | Original Model<br>(TXXV301)   | Variant Model<br>(TXXV301-IX)  |
|--|---|--|
| 15.247 – OPERATION WITHIN THE BANDS 902-928MHz, 2400-2483.5MHz, AND 5725-5850MHz |   |  |
| Time of<br>Occupancy<br>(Dwell Time) -<br>Section<br>15.247(a)(1)(iii)<br>)      |    |    |
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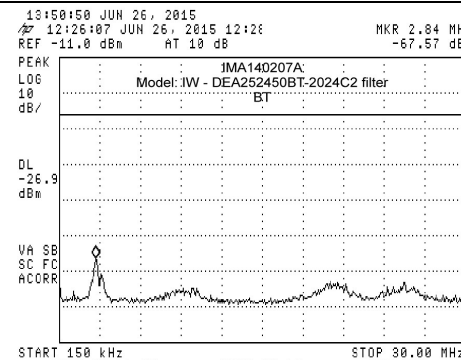
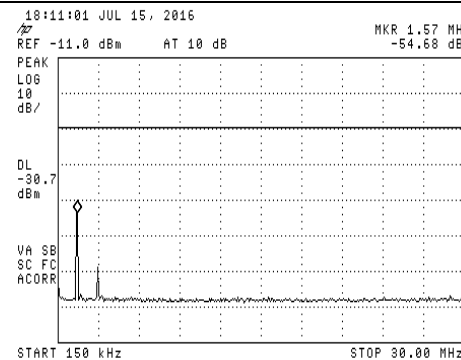
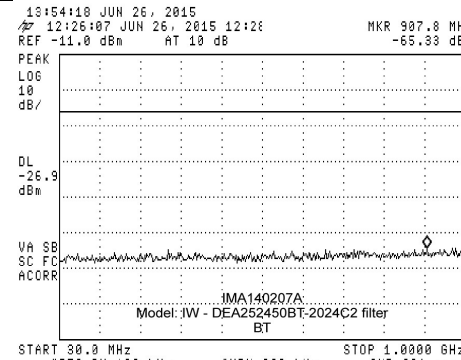
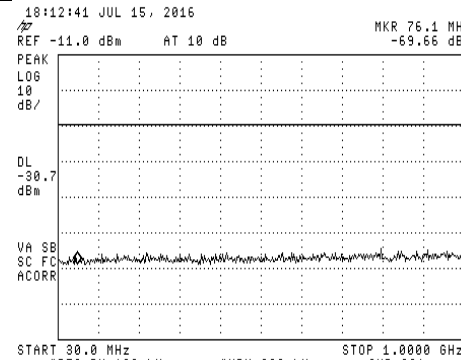
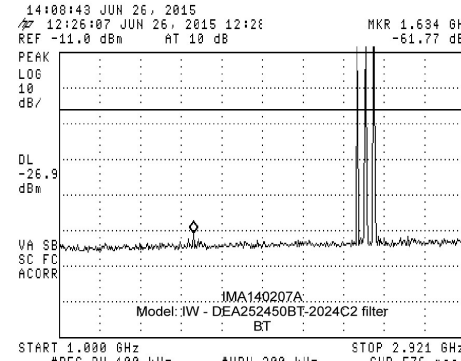
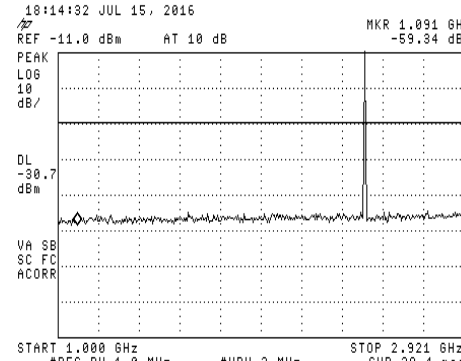
| Test   | Original Model<br>(TXXV301)   | Variant Model<br>(TXXV301-IX)  |
|--|---|--|
| 15.247 – OPERATION WITHIN THE BANDS 902-928MHz, 2400-2483.5MHz, AND 5725-5850MHz |   |  |
| Peak<br>Conducted<br>Output Power -<br>Section<br>15.247(b)(1)                   | <p>11:46:31 JUN 26, 2015</p> <p>REF 7.0 dBm AT 20 dB MKR 2.440947 GHz -7.01 dBm</p>  <p>Model: JWA140207A<br/>       Model: JWA140207A<br/>       Model: JWA140207A</p> <p>CENTER 2.441000 GHz SPAN 5.270 MHz<br/>       #RES BW 3.0 MHz #VBW 3 MHz SWP 20.0 msec RL</p> | <p>17:51:56 JUL 15, 2016</p> <p>REF 7.0 dBm AT 20 dB MKR 2.4414 GHz -11.04 dBm</p>  <p>Model: JWA140207A<br/>       Model: JWA140207A<br/>       Model: JWA140207A</p> <p>CENTER 2.441400 GHz SPAN 5.270 MHz<br/>       #RES BW 3.0 MHz #VBW 3 MHz SWP 20.0 msec RL</p>  |
| Out of band<br>emissions –<br>Section<br>15.247(d)                               | <p>12:40:55 JUN 26, 2015</p> <p>REF 7.0 dBm AT 20 dB MKR 2.4018 GHz -7.05 dBm</p>  <p>Model: JWA140207A<br/>       Model: JWA140207A<br/>       Model: JWA140207A</p> <p>START 2.3900 GHz STOP 2.5000 GHz<br/>       #RES BW 100 kHz #VBW 300 kHz SWP 33.0 msec RL</p>  | <p>17:51:56 JUL 15, 2016</p> <p>REF 7.0 dBm AT 20 dB MKR 2.4414 GHz -11.04 dBm</p>  <p>Model: JWA140207A<br/>       Model: JWA140207A<br/>       Model: JWA140207A</p> <p>START 2.3900 GHz STOP 2.5000 GHz<br/>       #RES BW 100 kHz #VBW 300 kHz SWP 33.0 msec RL</p> |
|  | <p>13:45:06 JUN 26, 2015</p> <p>REF -11.0 dBm AT 10 dB MKR 16.1 kHz -70.75 dBm</p>  <p>Model: JWA140207A<br/>       Model: JWA140207A<br/>       Model: JWA140207A</p> <p>START 9.0 kHz STOP 150.0 kHz<br/>       #RES BW 300 Hz #VBW 1 kHz SWP 4.70 sec RL</p>        | <p>18:07:30 JUL 15, 2016</p> <p>REF -11.0 dBm AT 10 dB MKR 13.2 kHz -68.38 dBm</p>  <p>Model: JWA140207A<br/>       Model: JWA140207A<br/>       Model: JWA140207A</p> <p>START 9.0 kHz STOP 150.0 kHz<br/>       #RES BW 300 Hz #VBW 1 kHz SWP 4.70 sec RL</p>        |

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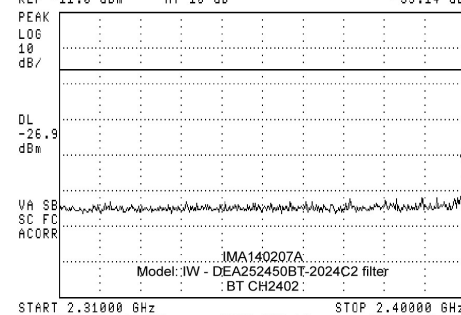
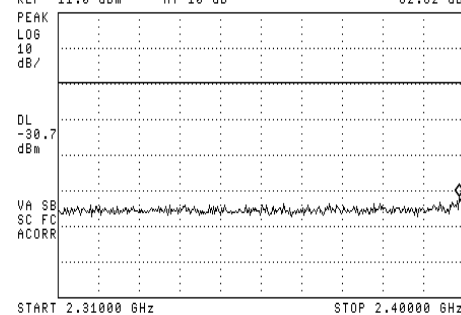
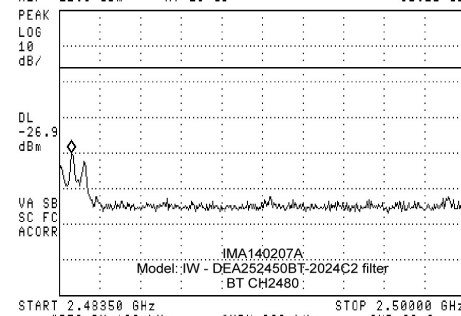
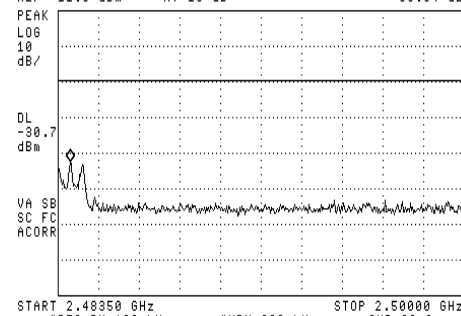
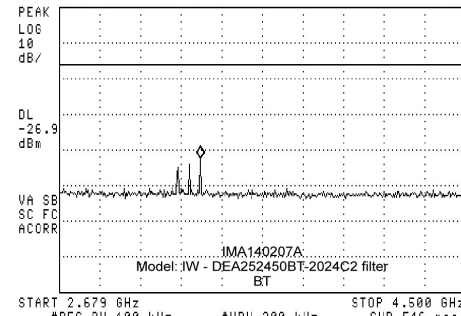
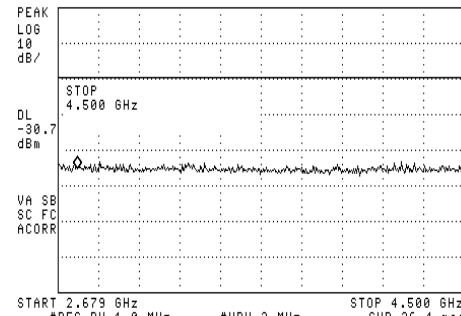
| Test  | Original Model<br>(TXXV301)   | Variant Model<br>(TXXV301-IX)   |
|---|---|---|
| <b>15.247 – OPERATION WITHIN THE BANDS 902-928MHz, 2400-2483.5MHz, AND 5725-5850MHz</b> |   |   |
|   | <p>13:50:50 JUN 26, 2015<br/>           12:26:07 JUN 26, 2015 12:28<br/>           REF -11.0 dBm AT 10 dB MKR 2.84 MHz<br/>           -67.57 dBm</p>  <p>20dB fc</p> <p>VA SB SC FC ACORR</p> <p>RL</p>    | <p>18:11:01 JUL 15, 2016<br/>           REF -11.0 dBm AT 10 dB MKR 1.57 MHz<br/>           -54.68 dBm</p>  <p>20dB fc</p> <p>VA SB SC FC ACORR</p> <p>RL</p>    |
|   | <p>13:54:18 JUN 26, 2015<br/>           12:26:07 JUN 26, 2015 12:28<br/>           REF -11.0 dBm AT 10 dB MKR 307.8 MHz<br/>           -65.33 dBm</p>  <p>20dB fc</p> <p>VA SB SC FC ACORR</p> <p>RL</p>  | <p>18:12:41 JUL 15, 2016<br/>           REF -11.0 dBm AT 10 dB MKR 76.1 MHz<br/>           -69.66 dBm</p>  <p>20dB fc</p> <p>VA SB SC FC ACORR</p> <p>RL</p>   |
|   | <p>14:00:43 JUN 26, 2015<br/>           12:26:07 JUN 26, 2015 12:28<br/>           REF -11.0 dBm AT 10 dB MKR 1.634 GHz<br/>           -61.77 dBm</p>  <p>20dB fc</p> <p>VA SB SC FC ACORR</p> <p>RL</p> | <p>18:14:32 JUL 15, 2016<br/>           REF -11.0 dBm AT 10 dB MKR 1.091 GHz<br/>           -59.34 dBm</p>  <p>20dB fc</p> <p>VA SB SC FC ACORR</p> <p>RL</p> |

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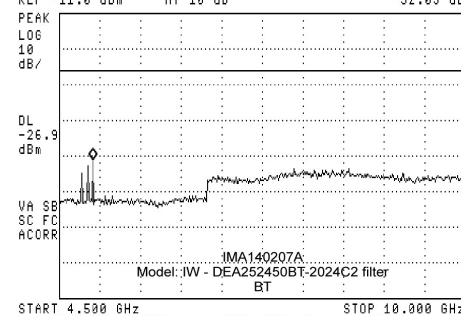
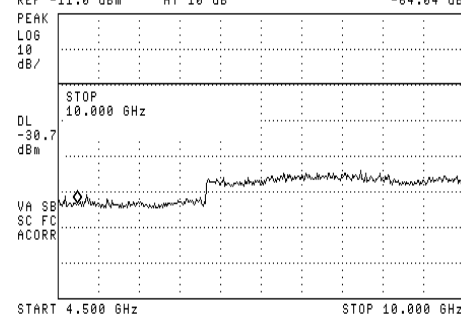
| Test   | Original Model<br>(TXXV301)  | Variant Model<br>(TXXV301-IX)   |
|--|--|---|
| 15.247 – OPERATION WITHIN THE BANDS 902-928MHz, 2400-2483.5MHz, AND 5725-5850MHz |  |   |
|  | <p>12:46:51 JUN 26, 2015<br/>           12:26:07 JUN 26, 2015 12:28 MKR 2.33978 GHz<br/>           REF -11.0 dBm AT 10 dB -53.14 dBm</p>  <p>START 2.31000 GHz STOP 2.40000 GHz<br/>           #RES BW 100 kHz #VBW 300 kHz SWP 27.0 msec RL</p>  | <p>17:58:13 JUL 15, 2016<br/>           REF -11.0 dBm AT 10 dB MKR 2.39888 GHz<br/>           -62.62 dBm</p>  <p>START 2.31000 GHz STOP 2.40000 GHz<br/>           #RES BW 100 kHz #VBW 300 kHz SWP 27.0 msec RL</p>  |
|  | <p>12:59:32 JUN 26, 2015<br/>           12:26:07 JUN 26, 2015 12:28 MKR 2.48400 GHz<br/>           REF -11.0 dBm AT 10 dB -51.12 dBm</p>  <p>START 2.48350 GHz STOP 2.50000 GHz<br/>           #RES BW 100 kHz #VBW 300 kHz SWP 20.0 msec RL</p> | <p>18:02:03 JUL 15, 2016<br/>           REF -11.0 dBm AT 10 dB MKR 2.48400 GHz<br/>           -53.54 dBm</p>  <p>START 2.48350 GHz STOP 2.50000 GHz<br/>           #RES BW 100 kHz #VBW 300 kHz SWP 20.0 msec RL</p> |
|  | <p>14:21:51 JUN 26, 2015<br/>           12:26:07 JUN 26, 2015 12:28 MKR 3.812 GHz<br/>           REF -11.0 dBm AT 10 dB -53.38 dBm</p>  <p>START 2.679 GHz STOP 4.500 GHz<br/>           #RES BW 100 kHz #VBW 300 kHz SWP 546 msec RL</p>       | <p>18:15:49 JUL 15, 2016<br/>           REF -11.0 dBm AT 10 dB MKR 2.765 GHz<br/>           -56.35 dBm</p>  <p>START 2.679 GHz STOP 4.500 GHz<br/>           #RES BW 1.0 MHz #VBW 3 MHz SWP 36.4 msec RL</p>        |

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| Test   | Original Model<br>(TXXV301)   | Variant Model<br>(TXXV301-IX)   |
|--|---|---|
| 15.247 – OPERATION WITHIN THE BANDS 902-928MHz, 2400-2483.5MHz, AND 5725-5850MHz |   |   |
|  | <p>14:41:31 JUN 26, 2015<br/>           REF -11.0 dBm AT 10 dB MKR 4.954 GHz<br/>           -52.05 dBm</p>  <p>Model: IW - DEA252450BT-2024C2 filter<br/>           BT</p> | <p>18:19:09 JUL 15, 2015<br/>           REF -11.0 dBm AT 10 dB MKR 4.751 GHz<br/>           -64.04 dBm</p>  |

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