

 MOTOROLA	 TESTING CERT # 2518.01
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FCC ID: AZ489FT4882
DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 2 of 2

Government & Public Safety EME Test Laboratory 8000 West Sunrise Blvd Fort Lauderdale, FL 33322	Date of Report: 3/03/08 Report Revision: O Report ID: PMUE3038A_Rev O_080303_SR6165
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<p>Responsible Engineer: Michael Sailsman (Sr. Staff EME Engineer) Date/s Tested: 2/21/08-2/27/08 Manufacturer/Location: Motorola – Plantation Sector/Group/Div.: CPD/RBR Date submitted for test: 2/12/08 DUT Description: RDU4100 UHF RBR, 10CH, Non-Display, Removable antenna, 4.0 Watts Li-Ion, (2.0 Watts AA) Color Black Test TX mode(s): CW Max. Power output: 4.2 Watts (2.4 W AA Alkaline battery) Nominal Power: 4.0 Watts (2.0 W AA Alkaline battery) Tx Frequency Bands: 438.00 MHz-470.00 MHz Signaling type: FM Model(s) Tested: PMUE3038A Model(s) Certified: PMUE3038A Serial Number(s): 158TJAE804 Classification: Occupational/Controlled Rule Part(s): 90</p> <p>Approved Accessories: Antenna(s): RAN4031A (UHF Whip Helical 438MHz-470MHz ¼ wave, 3dBi); RAN4033A (UHF Stubby Helical 438MHz-470MHz ¼ wave 2dBi) Battery(ies): 6080384X63 (RLN6305A)- Li-Ion Hi Capacity(2200mAh); 6080384X65 (RLN6351A)-Li-Ion STD Capacity(1100mAh); 6080384Y10 (RLN6308A)-Li-Ion Hi Capacity(2400mAh); RHN1005A (RLN6306A)-AA Alkaline Battery Tray Body worn accessory(ies): 4280383X62 (RLN6307A)-Spring Action Belt clip; RLN6301B(RLN6302A)-Leather Carry Case Audio/Data cable accessory(ies): HMN9026D (53862,Remote Spk Mic); HMN9025D (53866, Earbud w/PTT Mic); NTN9159F (53815, Lightweight Headset); ENMN4002B (Headset w/Boom Mic); HCSN4000D (56517, Earpiece w/ PTT Mic); HMN9039E (53863, Earpiece w/ Boom Mic); HCSN4001C (56518, Earpiece); HMN9038A (53865, Headset w/ Swivel Boom Mic); RLN5714B (Earpiece w/ Inline Mic); PMMN4001A (Earset w/ PTT Mic); PMLN4658A (D-Style Mic Earset w/ Vox); HMN9036A(Earbud w/PTT Mic); RLN5317A (Earpiece w/ PTT Mic Bge); HMN9030A (Remote Speaker Mic); HMN9013B (Lt Wt Hdst); PMLN5011A (Temple Transducer Headset); RLN5411A (Lt Wt Hdst w/ Boom Mic PTT); RMN4016B (Lt Wt Hdst w/ Swivel Boom Mic); RLN5318A (Earpiece Surveillance Mic); HMN9754D (Earpiece Surveillance Mic Bge); BDN6720A (Earpiece w/ GP300 connector); HMN9727B (Earpiece W/out Vol Control); HLN9132A (Earpiece); HMN9752B (Earpiece Bge); HMN9021A (Mid Tier Headset); RMN5047A (NFL Style Heavyduty Headset); RLN5238B (NFL Style Light Weight Headset); BDN6646C (Ear mic, GP300 PTT Adapter).</p> <p style="text-align: center;">Max. Calc. : 1-g Avg. SAR: 7.01 W/kg (Body); 10-g Avg. SAR: 5.03 W/kg (Body) Max. Calc. : 1-g Avg. SAR: 4.11 W/kg (Face); 10-g Avg. SAR: 3.01 W/kg (Face)</p>	
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Based on the information and the testing results provided herein, the undersigned certifies that when used as stated in the operating instructions supplied, said product complies with the national and international reference standards and guidelines listed in section 2.0 of this report. This report shall not be reproduced without written approval from an officially designated representative of the Motorola EME Laboratory.

I attest to the accuracy of the data and assume full responsibility for the completeness of these measurements.
 This reporting format is consistent with the suggested guidelines of the TIA TSB-150 December 2004
 The results and statements contained in this report pertain only to the device(s) evaluated.

Signature on file Deanna Zakharia G&PS EME Lab Senior Resource Manager, Laboratory Director, Approval Date: 3/3/08	Certification Date: Certification No.: L1080223
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Appendix E
DUT Scans (Shortened Scans and Highest SAR configurations)

Shortened Scan Results

Motorola Government & Public Safety EME Laboratory
Date/Time: 2/26/2008 6:17:25 PM

Robot# / Run#: DASY4-FL-2 / CM-Ab-080226-20
Phantom# / Tissue Temp.: 80302002B-S8 / 20.8 (C)
DUT Model# / Serial#: PMUE3038A / 158TJAE804
Antenna / TX Freq.: RAN4033A / 438.0000 (MHz)
Battery: 6080384Y10
Carry Acc. / Cable Acc.: None / BDN6646C
Start Power: 4.13 (W)

Comments: Back of radio facing phantom, antenna @ 2.5 cm parallel, Short scan

Probe: ET3DV6 - SN1547, Calibrated: 11/19/2007, ConvF(7.5, 7.5, 7.5)
Electronics: DAE3 Sn401, Calibrated: 8/28/2007
Duty Cycle: 1:1, Medium parameters used: $f = 454$ MHz; $\sigma = 0.92$ mho/m; $\epsilon_r = 55.6$; $\rho = 1000$ kg/m³

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 125.0 V/m; Power Drift = -0.278 dB
Maximum value of SAR (measured) = 13.2 mW/g

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 125.0 V/m; Power Drift = -0.278 dB
Peak SAR (extrapolated) = 17.9 W/kg
SAR(1 g) = 12.6 mW/g; SAR(10 g) = 9.07 mW/g

Ab Scan/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 118.6 V/m; Power Drift = -0.353 dB
Motorola Fast SAR: SAR(1 g) = 12.1 mW/g; SAR(10 g) = 8.83 mW/g
Maximum value of SAR (interpolated) = 12.8 mW/g

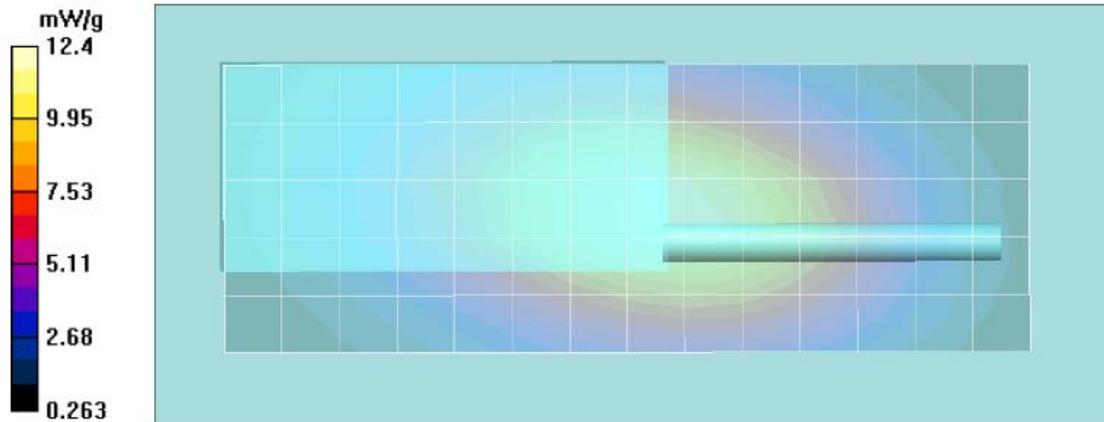
Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (measured) = 12.5 mW/g

Shortened scan reflect highest SAR producing configuration; Run time 7 minutes.

Representative “normal” scan run time was 18 minutes

“Shortened” scan max calculated SAR using SAR drift: 1-g Avg. = 6.83mW/g; 10-g Avg. = 4.92mW/g

“Normal” scan max calculated SAR using SAR drift: 1-g Avg. = 7.01mW/g; 10-g Avg. = 5.03mW/g
(see part 1 of 2 section 9.0 run # CM-Ab-080226-19)



Highest SAR Configurations Results

Motorola Government & Public Safety EME Laboratory Date/Time: 2/26/2008 4:58:19 PM

Robot# / Run#: DASY4-FL-2 / CM-Ab-080226-19
Phantom# / Tissue Temp.: 80302002B-S8 / 20.8 (C)
DUT Model# / Serial#: PMUE3038A / 158TJAE804
Antenna / TX Freq.: RAN4033A / 438.0000 (MHz)
Battery: 6080384Y10
Carry Acc. / Cable Acc.: None / BDN6646C
Start Power: 4.07 (W)

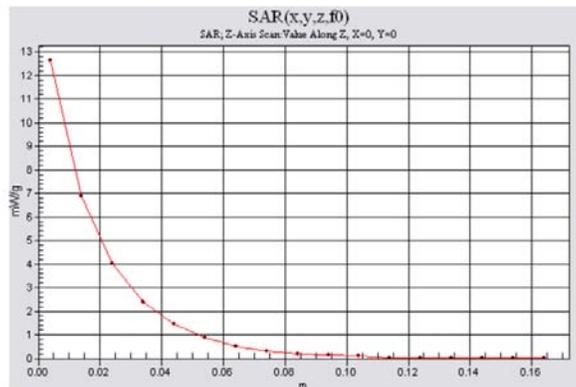
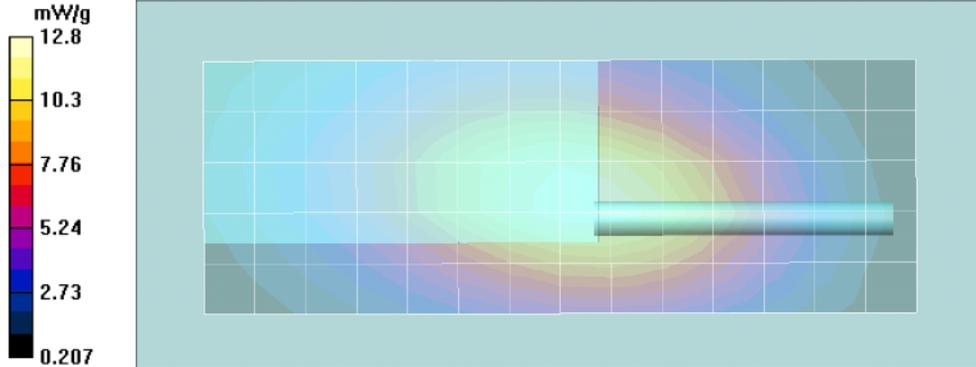
Comments: Back of radio facing phantom, antenna @ 2.5 cm parallel, Full scan

Probe: ET3DV6 - SN1547, Calibrated: 11/19/2007, ConvF(7.5, 7.5, 7.5)
Electronics: DAE3 Sn401, Calibrated: 8/28/2007
Duty Cycle: 1:1, Medium parameters used: $f = 454$ MHz; $\sigma = 0.92$ mho/m; $\epsilon_r = 55.6$; $\rho = 1000$ kg/m³

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 122.1 V/m; Power Drift = -0.468 dB
Peak SAR (extrapolated) = 17.5 W/kg
SAR(1 g) = 12.2 mW/g; SAR(10 g) = 8.76 mW/g
Maximum value of SAR (measured) = 12.8 mW/g

Ab Scan/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 122.1 V/m; Power Drift = -0.468 dB
Motorola Fast SAR: SAR(1 g) = 12.5 mW/g; SAR(10 g) = 9.14 mW/g
Maximum value of SAR (interpolated) = 13.2 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (measured) = 12.6 mW/g



Motorola Government & Public Safety EME Laboratory
Date/Time: 2/27/2008 11:27:03 AM

Robot# / Run#: DASY4-FL-2 / ErC-Face-080227-06
Phantom# / Tissue Temp.: 80302002A-S7 / 21.1 (C)
DUT Model# / Serial#: PMUE3038A / 158TJAE804
Antenna / TX Freq.: RAN4033A / 438.0000 (MHz)
Battery: 6080384X65
Carry Acc. / Cable Acc.: None / None
Start Power: 4.08 (W)

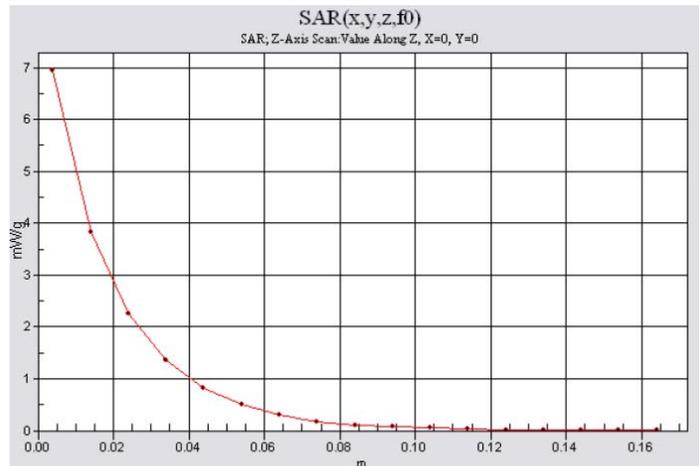
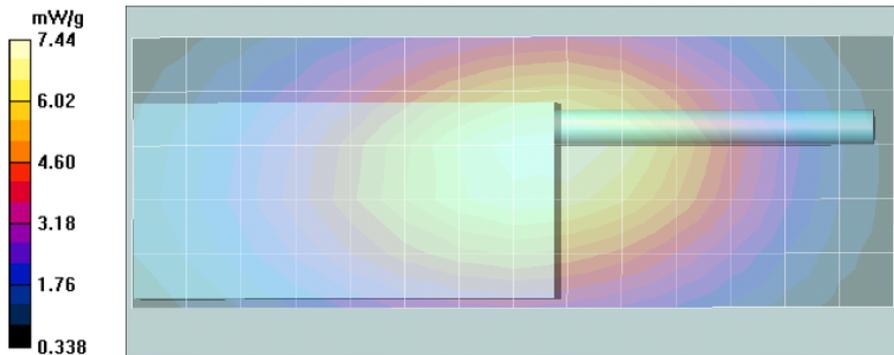
Comments: Full Scan

Probe: ET3DV6 - SN1547, Calibrated: 11/19/2007, ConvF(7.08, 7.08, 7.08)
Electronics: DAE3 Sn401, Calibrated: 8/28/2007
Duty Cycle: 1:1, Medium parameters used: $f = 454$ MHz; $\sigma = 0.85$ mho/m; $\epsilon_r = 44.1$; $\rho = 1000$ kg/m³

Face Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 98.4 V/m; Power Drift = -0.729 dB
Peak SAR (extrapolated) = 9.36 W/kg
SAR(1 g) = 6.75 mW/g; SAR(10 g) = 4.95 mW/g
Maximum value of SAR (measured) = 7.07 mW/g

Face Scan/Area Scan (6x15x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 7.44 mW/g

Face Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (measured) = 6.95 mW/g



APPENDIX F
DUT Supplementary Data (Power slump)

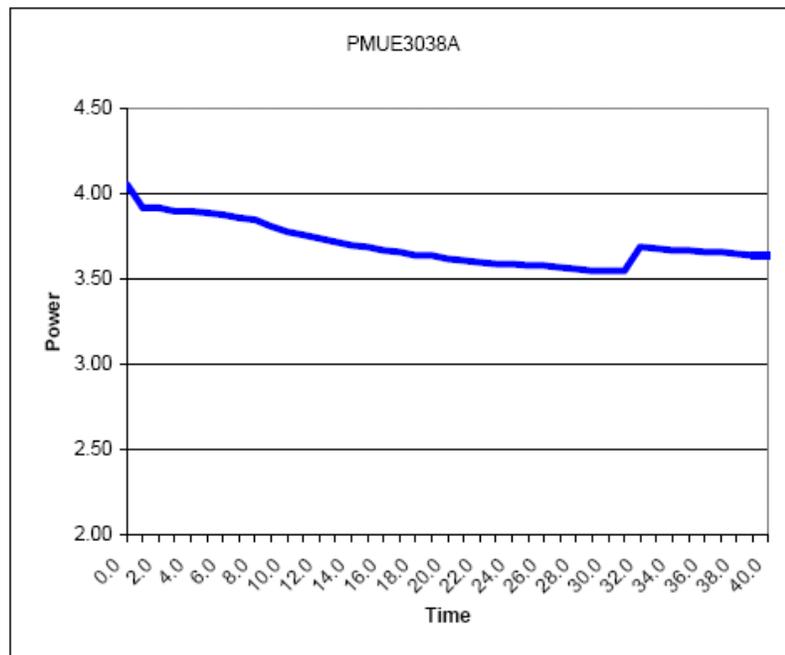
Model # PMUE3038A
Serial # 158TJAE804

Battery # 6080384Y10
Frequency 438 MHz
Date 2/27/2008

Transmit Mode CW
Audio Accessory BDN6646C

TX TIME **Measured Power**
(Minutes) **(Watts)**

0.0	4.06
1.0	3.92
2.0	3.92
3.0	3.90
4.0	3.90
5.0	3.89
6.0	3.88
7.0	3.86
8.0	3.85
9.0	3.81
10.0	3.78
11.0	3.76
12.0	3.74
13.0	3.72
14.0	3.70
15.0	3.69
16.0	3.67
17.0	3.66
18.0	3.64
19.0	3.64
20.0	3.62
21.0	3.61
22.0	3.60
23.0	3.59
24.0	3.59
25.0	3.58
26.0	3.58
27.0	3.57
28.0	3.56
29.0	3.55
30.0	3.55
31.0	3.55
32.0	3.69
33.0	3.68
34.0	3.67
35.0	3.67
36.0	3.66
37.0	3.66
38.0	3.65
39.0	3.64
40.0	3.64



Appendix G DUT Test Position Photos

Figure 1: Highest SAR Test Position (Body)
DUT back with antenna separated 2.5cm from the phantom;
worst case audio accessory BDN6646C attached

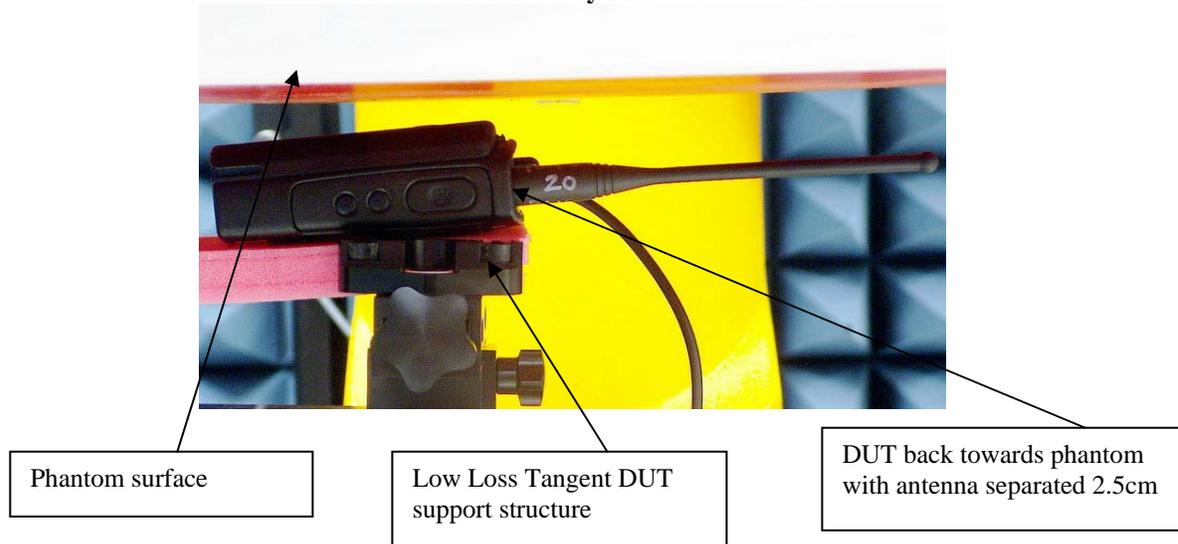


Figure 2: Highest SAR Test Position (face)
DUT front side separated 2.5cm from the phantom



Figure 3: Face Assessment
DUT front side separated 2.5cm from the phantom
Audio accessory BDN6720A attached
(Same position used for all applicable audio accessories)



Figure 4: Body Assessment
DUT with carry accessory 4280383X62 (RLN6307A) against the phantom
(Same position used for all Audio accessory)



Figure 5: Body Assessment
DUT with carry accessory RLN6301A (RLN6302A) against the phantom
With audio accessory HMN9026D attached



Figure 6: Body Assessment
DUT front separated 2.5cm from phantom
With audio accessory RLN5714B attached



Appendix H DUT and Body worn Accessory Photos

The purpose of this appendix is to illustrate the offered body-worn carry accessory(ies). The sample that was used in the following photos represents the product used to obtain the results presented herein.



Photo 1.
Model 4280383X62 (RLN6307A)
Back View



Photo 2.
Model 4280383X62 (RLN6307A)
Side View



Photo 3.
Model RLN6301A (RLN6302A)
Back View



Photo 4.
Model RLN6301A (RLN6302A)
Front View



Photo 5.
Model RLN6301A (RLN6302A)
Side View

Appendix I

DUT Antenna Separation Distances and Offered Accessory Test Status

The following table(s) summarizes the separation distances and test status provided by each of the applicable body-worn accessory(ies):

Antenna Models	Tested ?	Min. Separation distances between DUT antenna and phantom surface. (mm)	Comments
RAN4031A	Yes	NA	
RAN4033A	Yes	NA	

Battery Models	Tested ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
6080384X63	Yes	NA	(aka RLN6305A)
6080384X65	Yes	NA	(aka RLN6351A)
6080384Y10	Yes	NA	(aka RLN6308A)
RHN1005A	Yes	NA	(aka RLN6306A)

Carry Case Models	Tested ?	Min. Separation distances between DUT antenna and phantom surface. (mm)	Comments
4280383X62	Yes	31-55	(aka RLN6307A)
RLN6301B	Yes	52-70	(aka RLN6302A)

Audio Acc. Models	Tested ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
BDN6646C	Yes	NA	
BDN6720A	Yes	NA	
ENMN4002B	Yes	NA	
HCSN4000D	Yes	NA	(aka 56517)
HCSN4001C	Yes	NA	(aka 56518)
HLN9132A	Yes	NA	
HMN9013B	Yes	NA	
HMN9021A	Yes	NA	
HMN9025D	Yes	NA	(aka 53866)
HMN9026D	Yes	NA	(aka 53862)
HMN9030A	Yes	NA	
HMN9036A	Yes	NA	
HMN9038A	Yes	NA	(aka 53865)
HMN9039E	Yes	NA	(aka 53863)
HMN9727B	Yes	NA	
HMN9752B	Yes	NA	
HMN9754D	No	NA	BS to RLN5318A
NTN9159F	Yes	NA	(aka 53815)
PMLN4658A	Yes	NA	
PMLN5011A	Yes	NA	
PMMN4001A	Yes	NA	
RLN5238B	Yes	NA	
RLN5317A	No	NA	BS to RLN5318A
RLN5318A	Yes	NA	
RLN5411A	Yes	NA	
RLN5714B	Yes	NA	
RMN4016B	Yes	NA	
RMN5047A	Yes	NA	