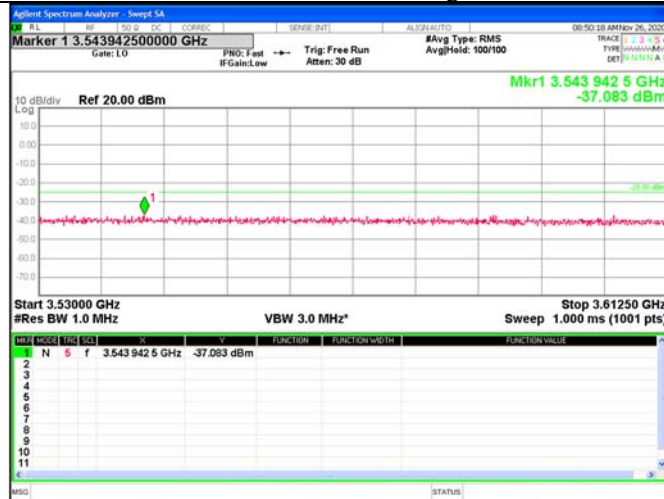


### Out of Band Emission (Conducted)

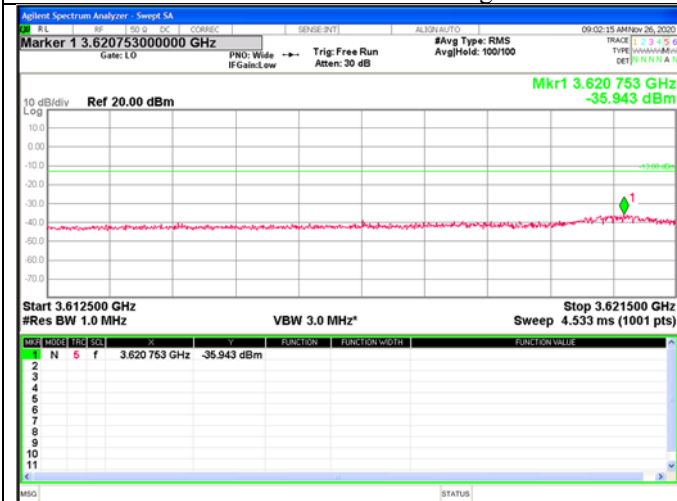
Report No. 13489136H  
 Test place Ise EMC Lab.  
 Shielded Room No.6  
 Date November 26, 2020  
 Temperature / Humidity 21 deg. C / 50 % RH  
 Engineer Yutaka Yoshida  
 Mode LTE Band48 5 MHz QPSK Md Channel RB1-24

Greater than 10 MHz below Assigned Channel

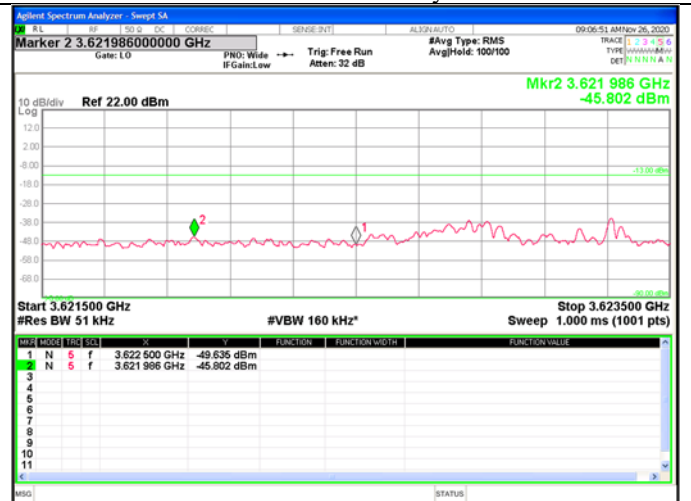


Within 0 MHz to 10 MHz below Assigned Channel

Within 1 MHz to 10 MHz below Assigned Channel



within 1 MHz immediately out side



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Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Out of Band Emission (Conducted)

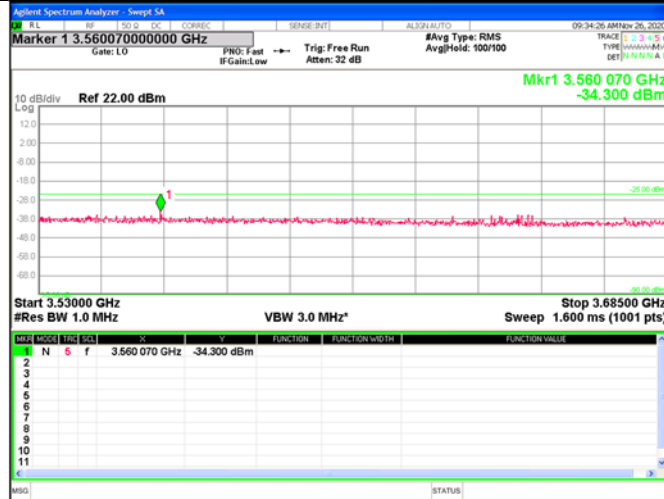
Report No. 13489136H  
 Test place Ise EMC Lab.  
 Shielded Room No.6  
 Date November 26, 2020  
 Temperature / Humidity 21 deg. C / 50 % RH  
 Engineer Yutaka Yoshida  
 Mode LTE Band48 5 MHz QPSK Mid Channel RB1-24



## Out of Band Emission (Conducted)

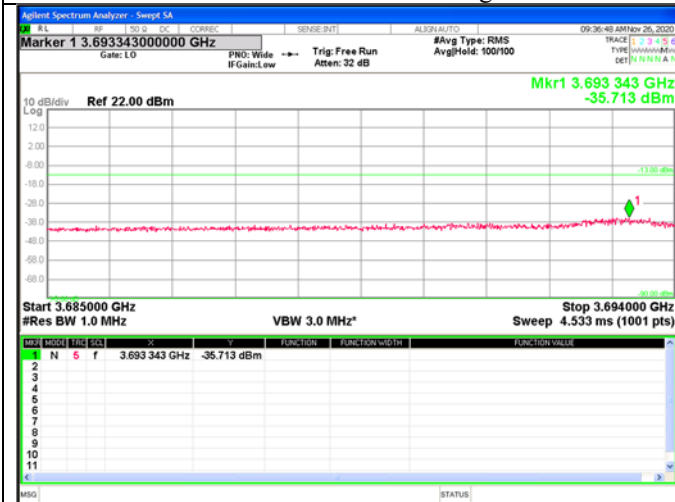
Report No. 13489136H  
 Test place Ise EMC Lab.  
 Shielded Room No.6  
 Date November 26, 2020  
 Temperature / Humidity 21 deg. C / 50 % RH  
 Engineer Yutaka Yoshida  
 Mode LTE Band48 5 MHz QPSK High Channel RB1-24

Greater than 10 MHz below Assigned Channel

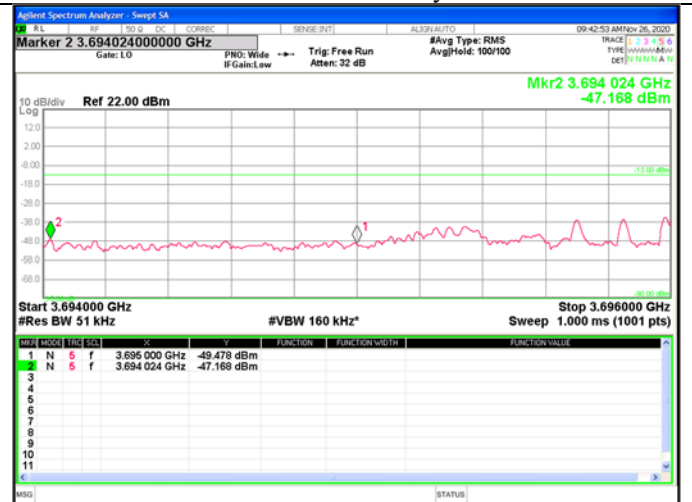


Within 0 MHz to 10 MHz below Assigned Channel

Within 1 MHz to 10 MHz below Assigned Channel



within 1 MHz immediately outside



## Out of Band Emission (Conducted)

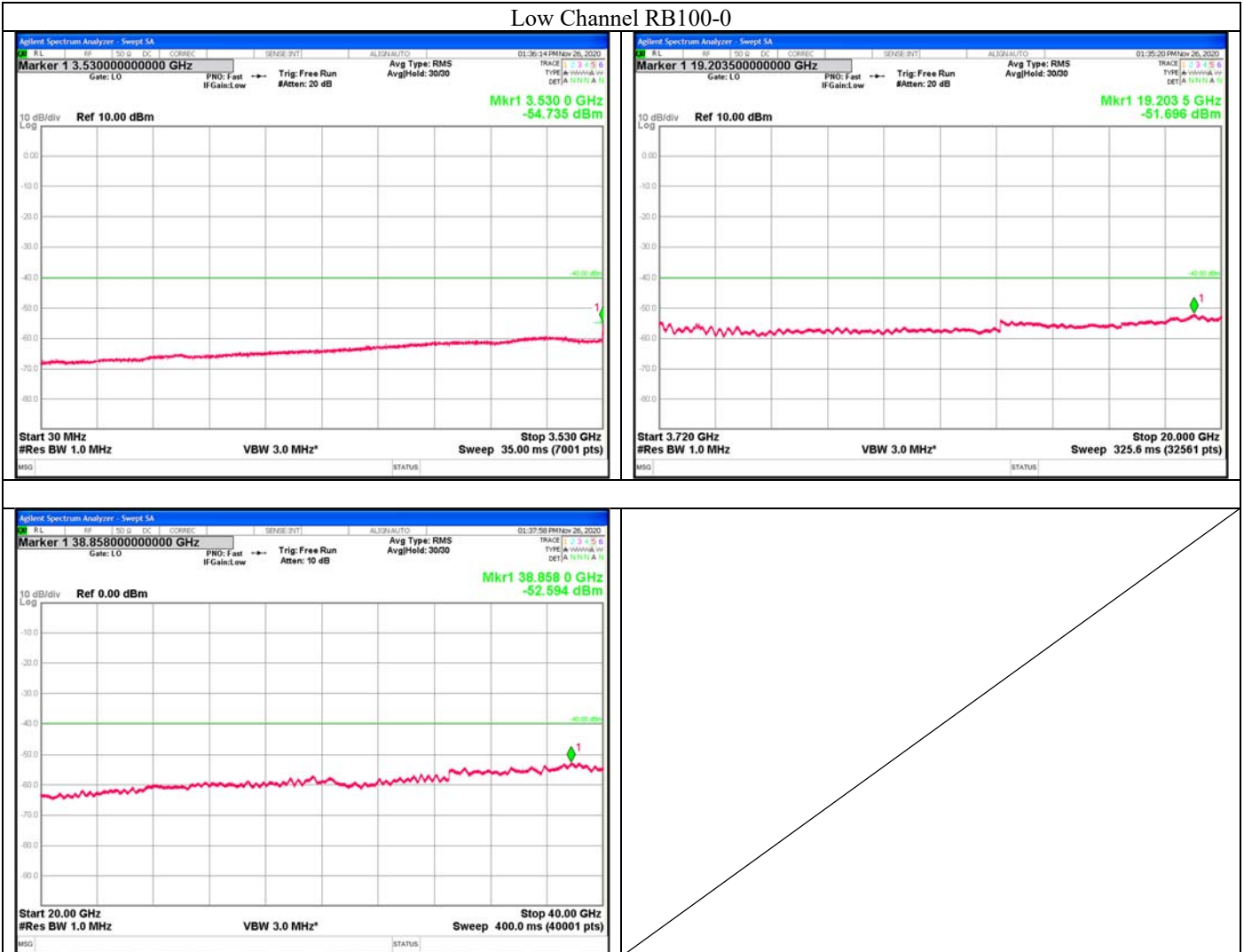
Report No. 13489136H  
 Test place Ise EMC Lab.  
 Shielded Room No.6  
 Date November 26, 2020  
 Temperature / Humidity 21 deg. C / 50 % RH  
 Engineer Yutaka Yoshida  
 Mode LTE Band48 5 MHz QPSK High Channel RB1-24



### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 20 MHz QPSK

Low Channel RB100-0



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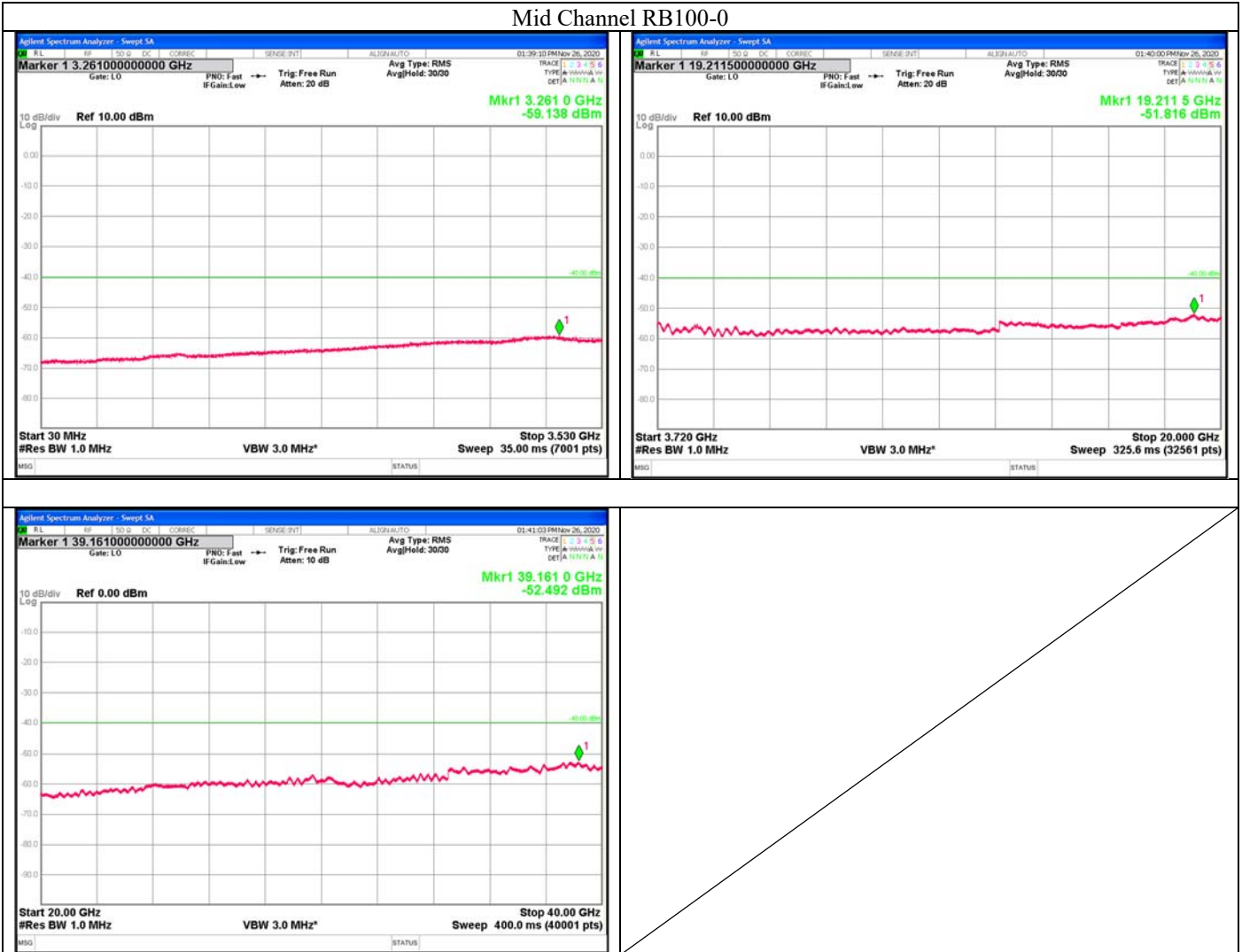
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 20 MHz QPSK

Mid Channel RB100-0



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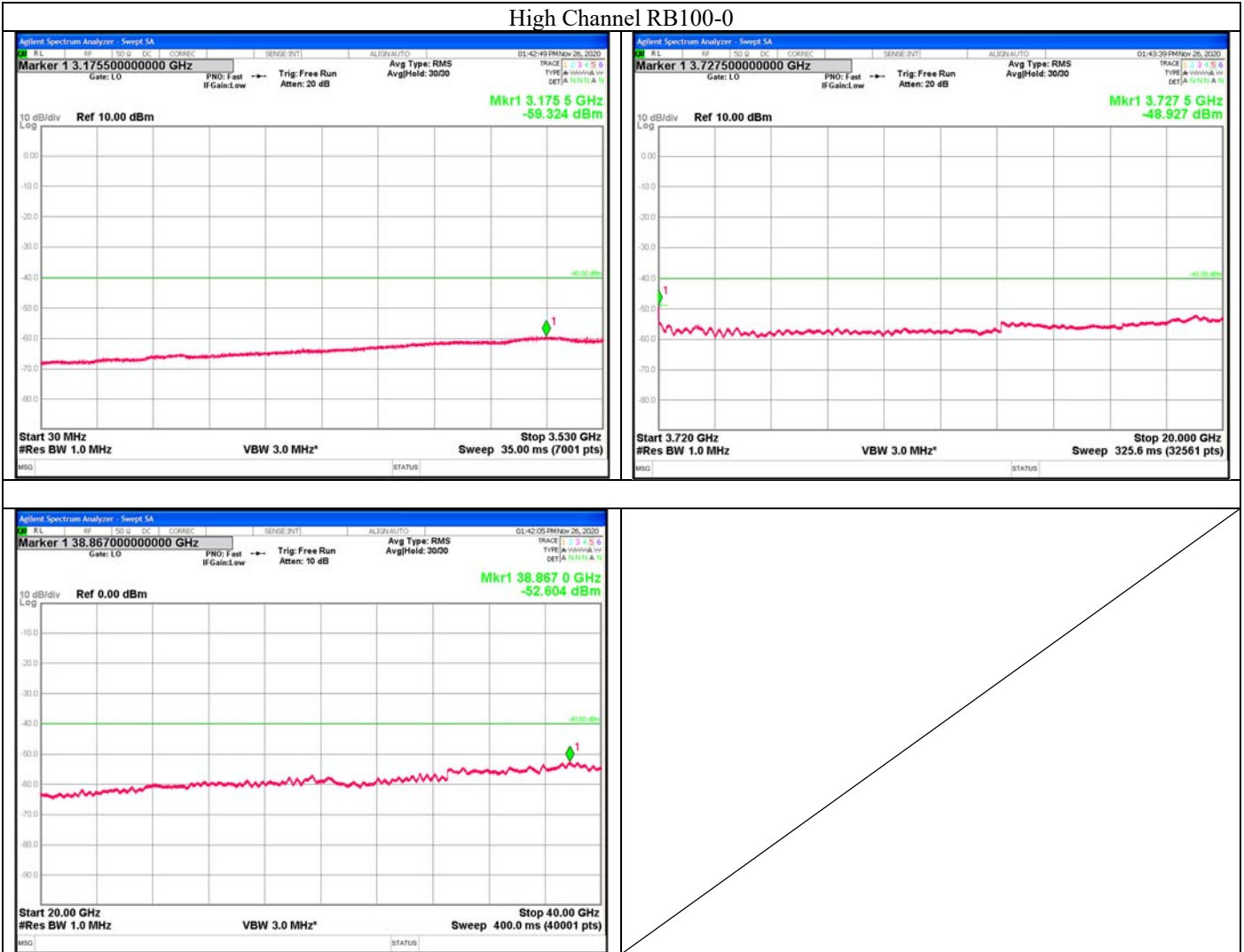
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

## Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 20 MHz QPSK

### High Channel RB100-0



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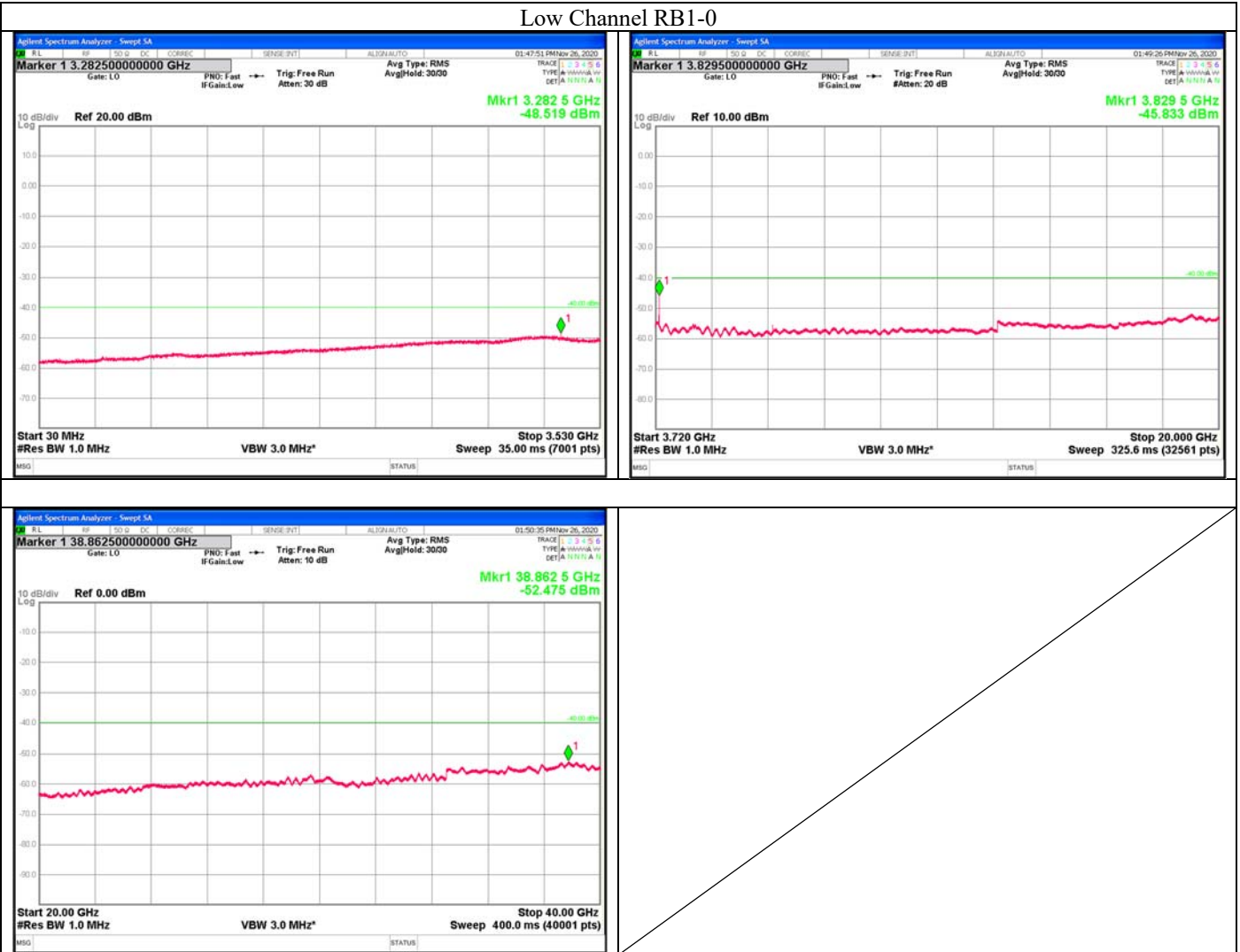
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 20 MHz QPSK

Low Channel RB1-0



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Ise EMC Lab.

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Telephone : +81 596 24 8999

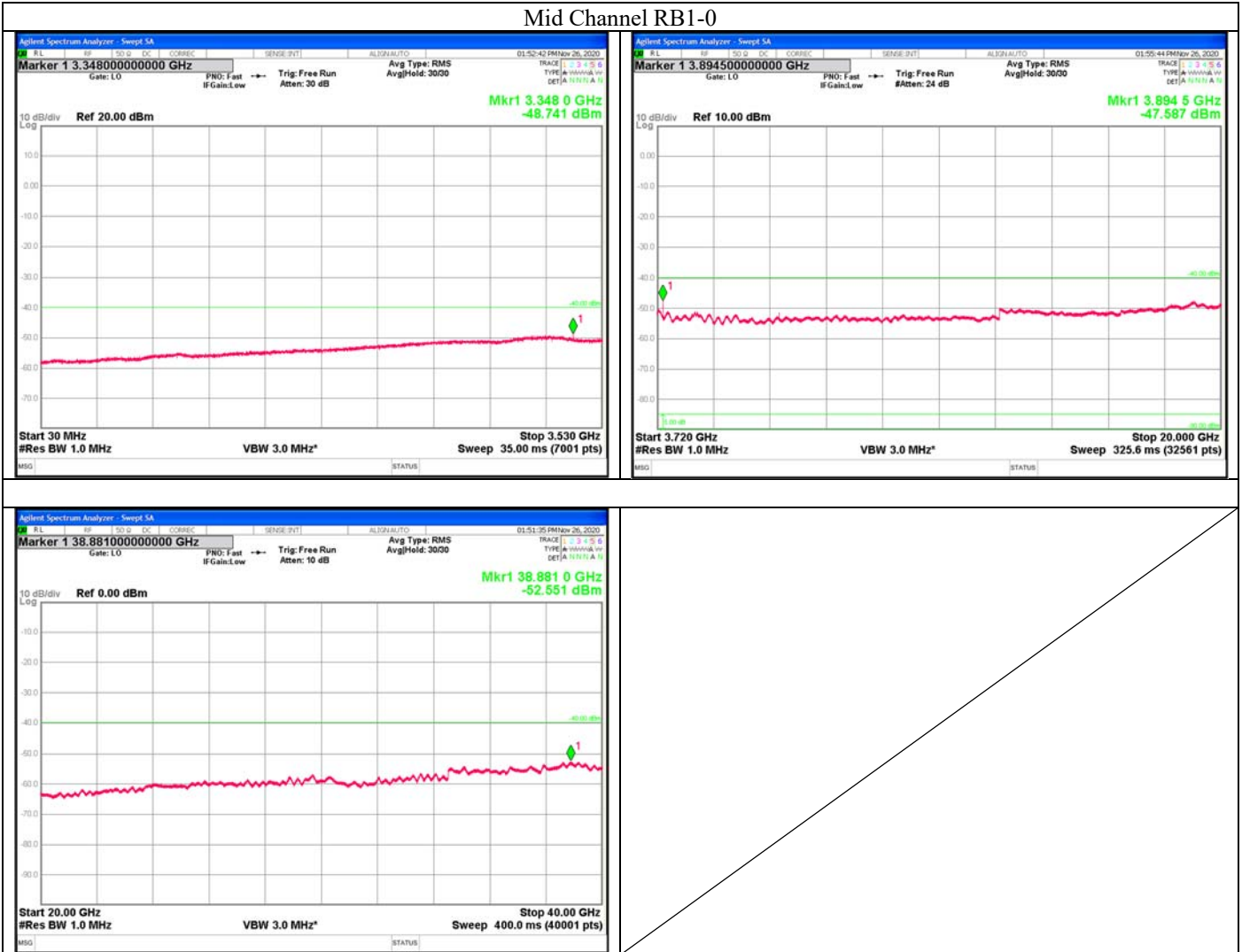
Facsimile : +81 596 24 8124



### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 20 MHz QPSK

Mid Channel RB1-0



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Ise EMC Lab.

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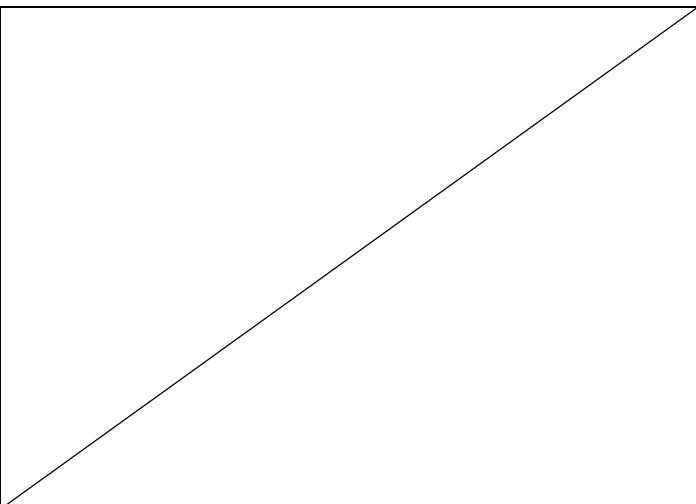
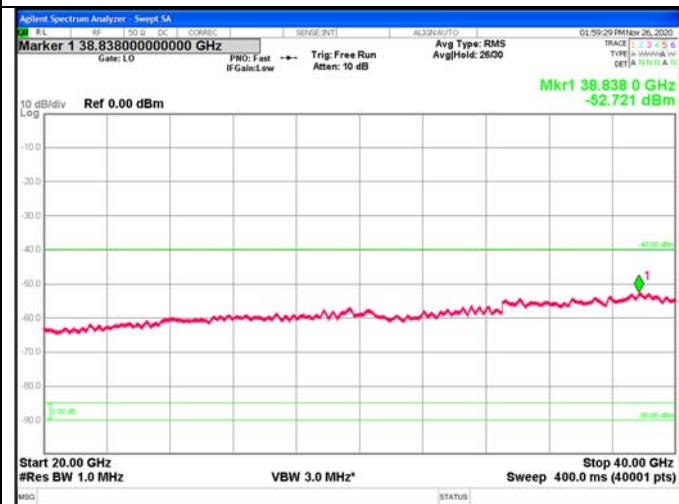
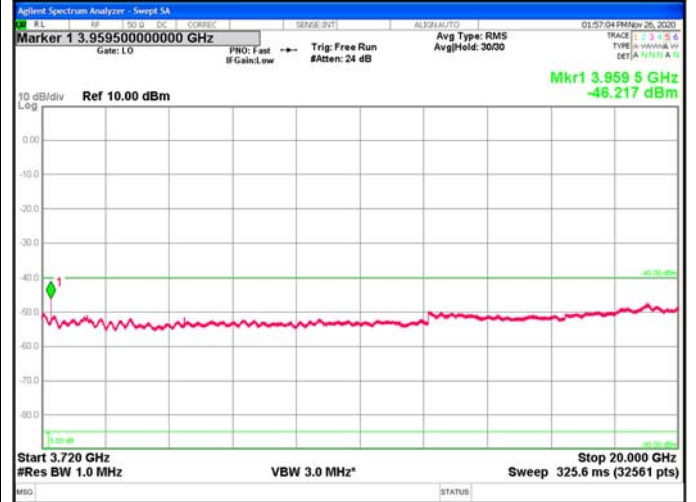
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No. 13489136H  
Test place Ise EMC Lab.  
Shielded Room No.6  
Date November 26, 2020  
Temperature / Humidity 21 deg. C / 50 % RH  
Engineer Yutaka Yoshida  
Mode LTE Band 48 20 MHz QPSK

#### High Channel RB1-0



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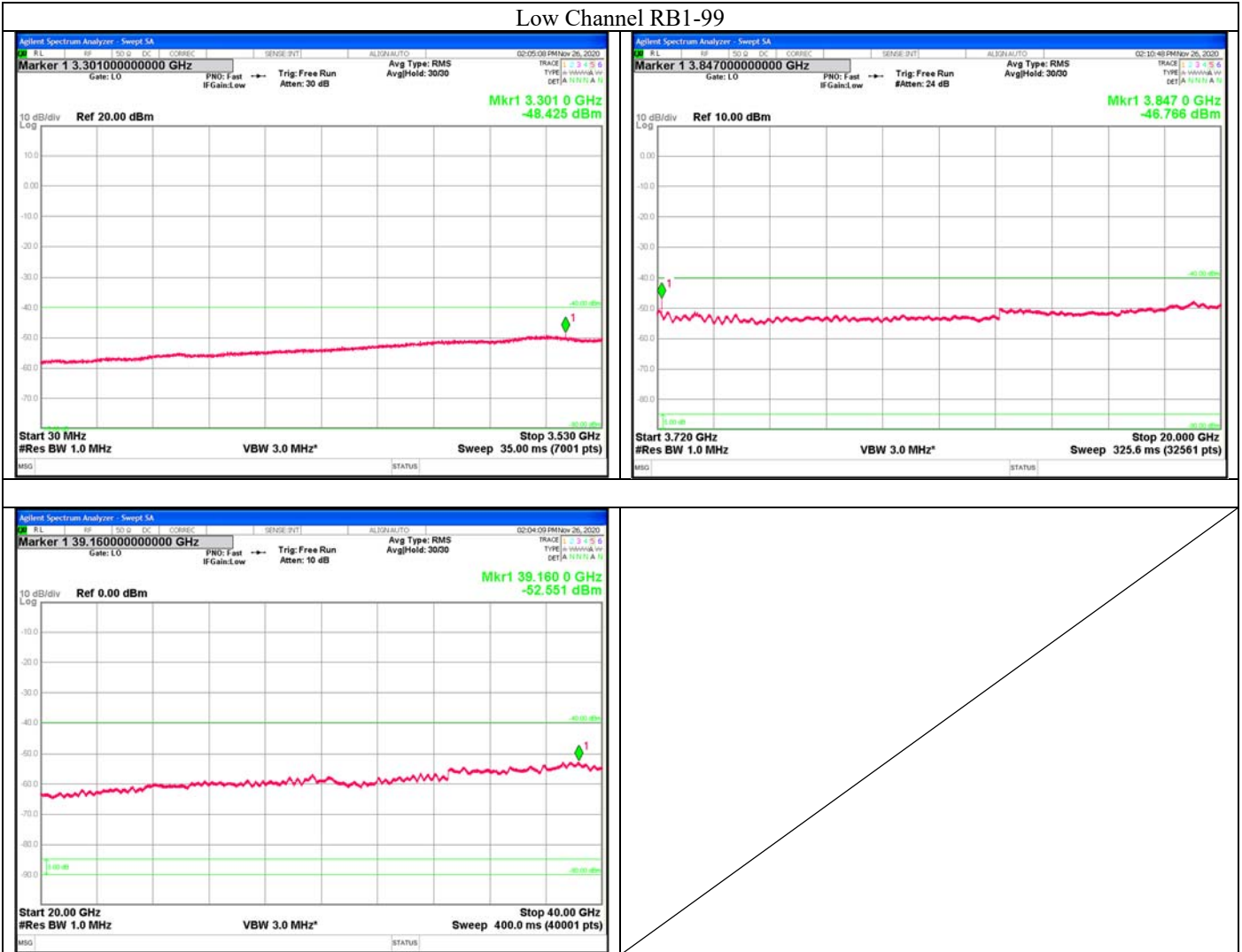
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 20 MHz QPSK

Low Channel RB1-99



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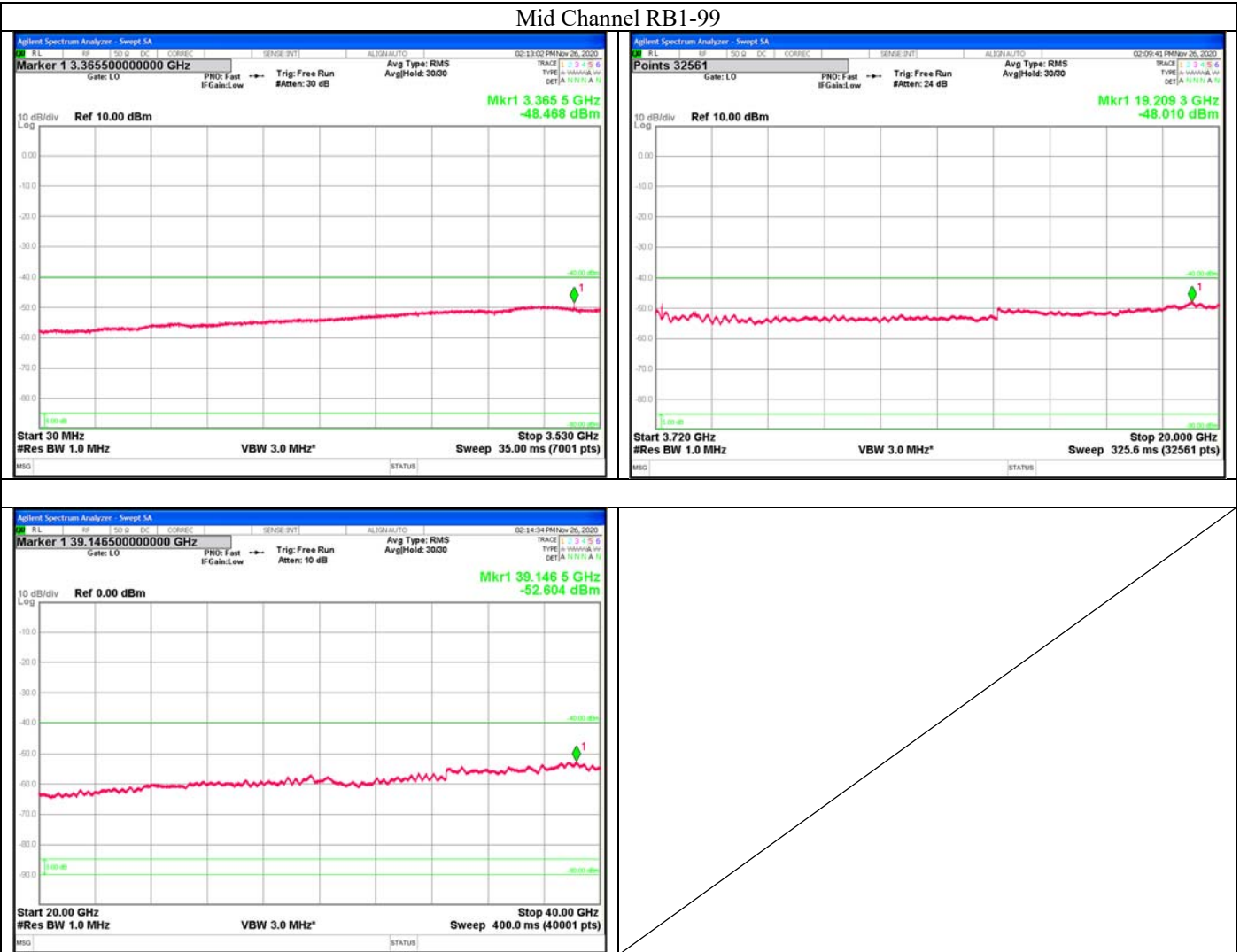
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 20 MHz QPSK

Mid Channel RB1-99



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Ise EMC Lab.

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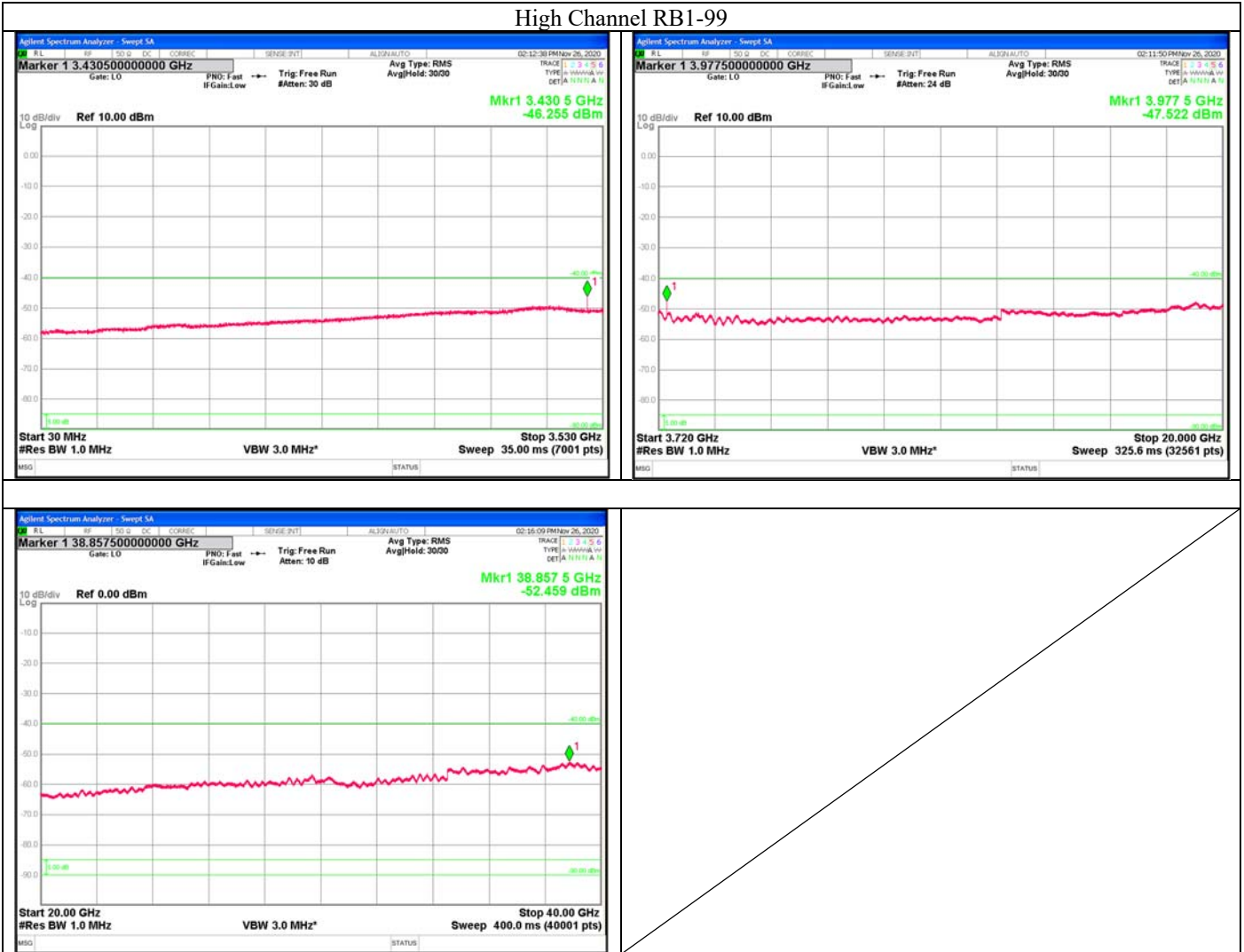
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

## Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 20 MHz QPSK

### High Channel RB1-99



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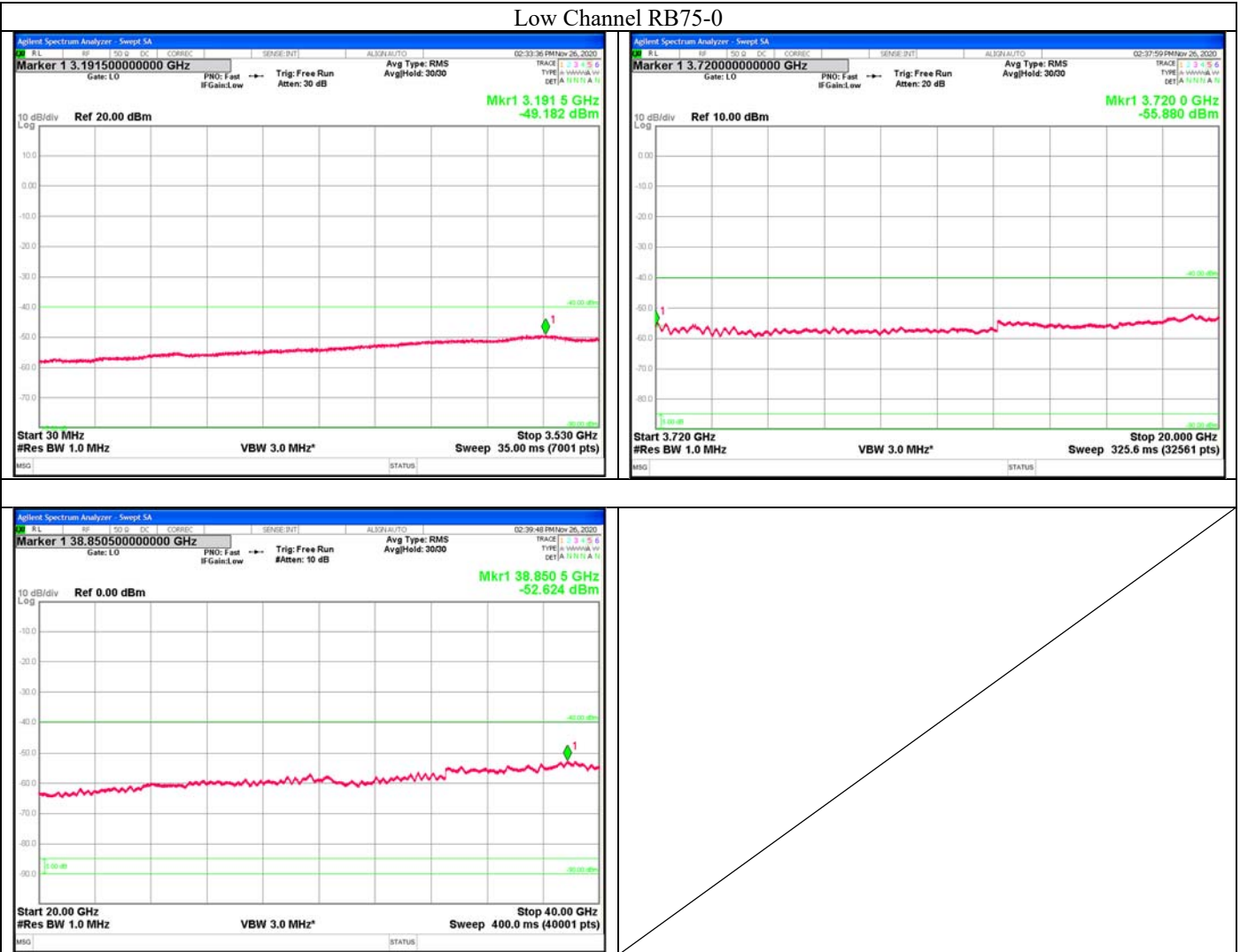
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 15 MHz QPSK

Low Channel RB75-0



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**Ise EMC Lab.**

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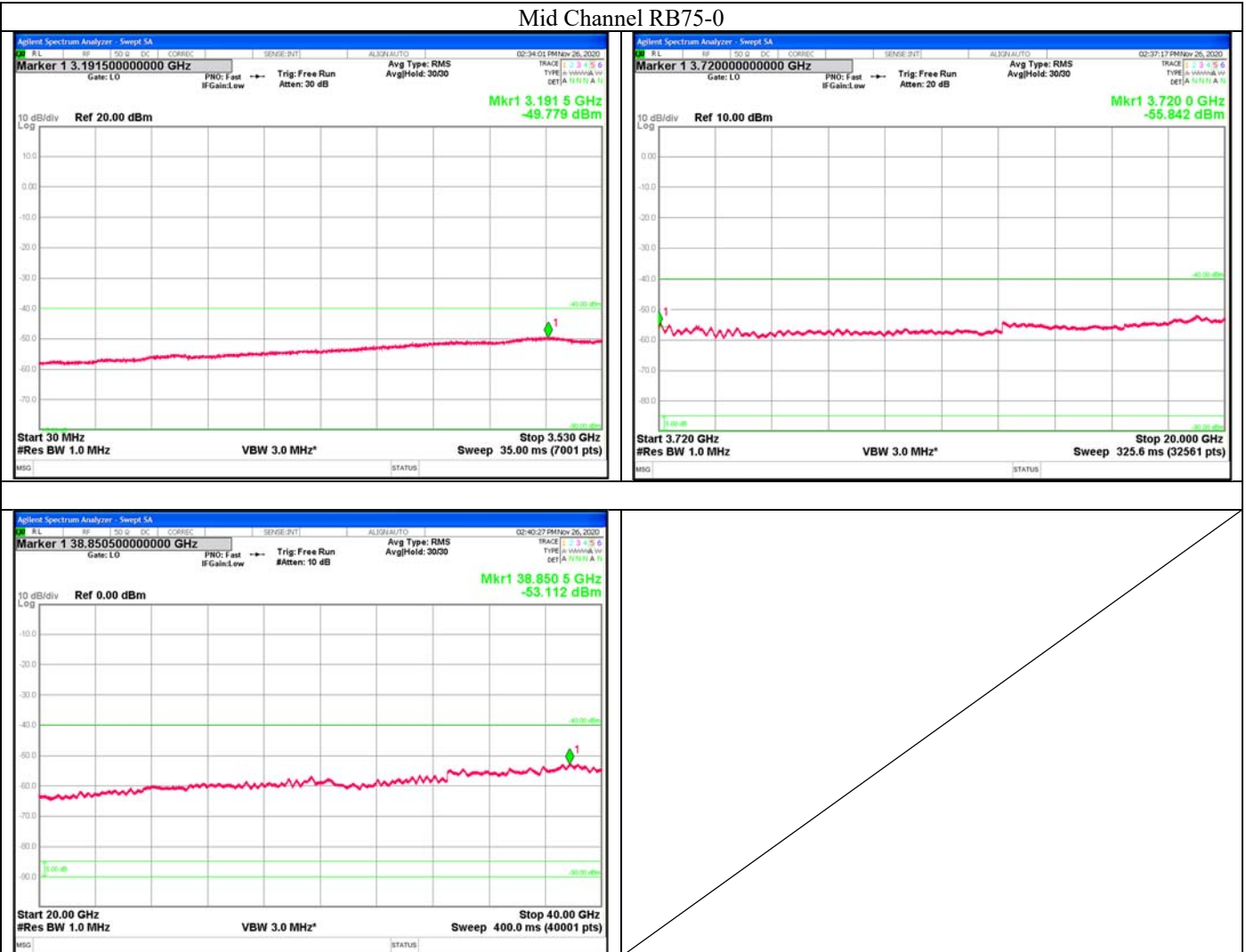
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 15 MHz QPSK

Mid Channel RB75-0



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**Ise EMC Lab.**

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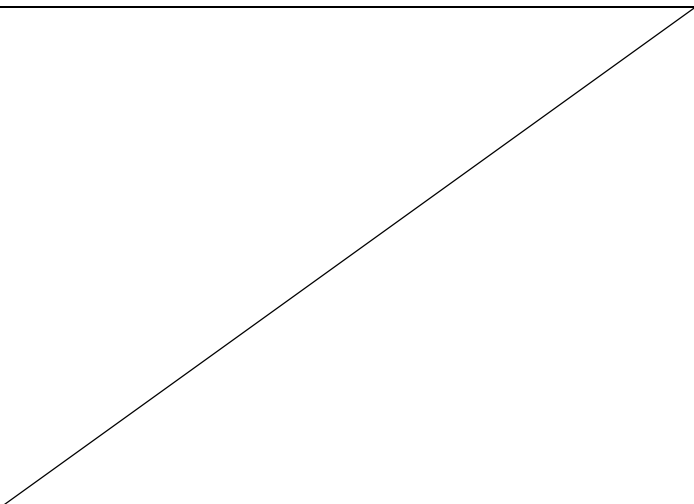
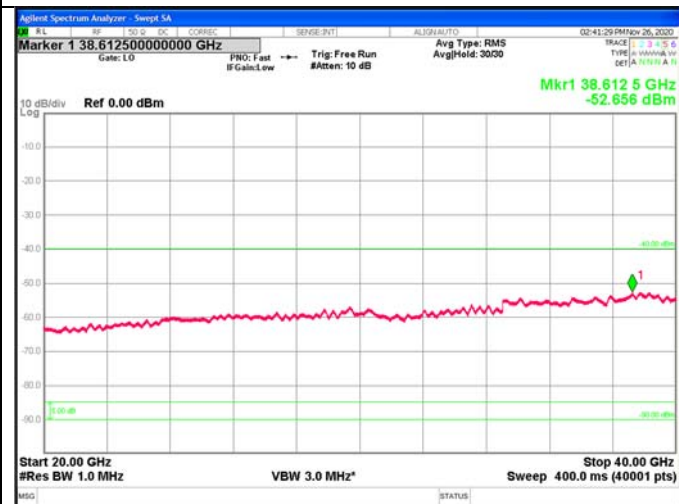
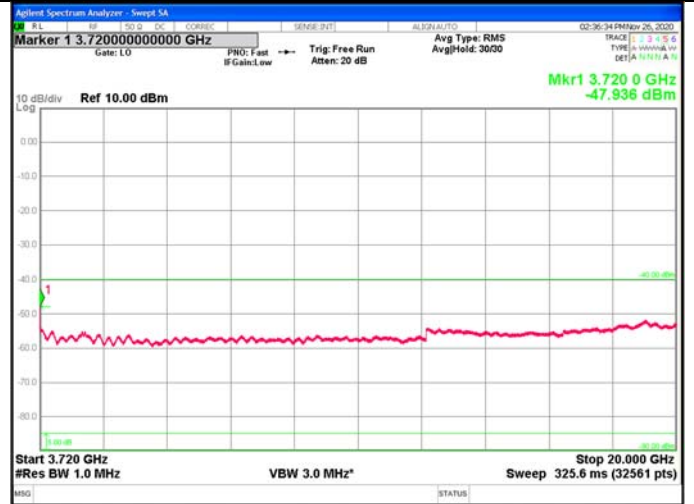
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 15 MHz QPSK

#### High Channel RB75-0



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Ise EMC Lab.

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Telephone : +81 596 24 8999

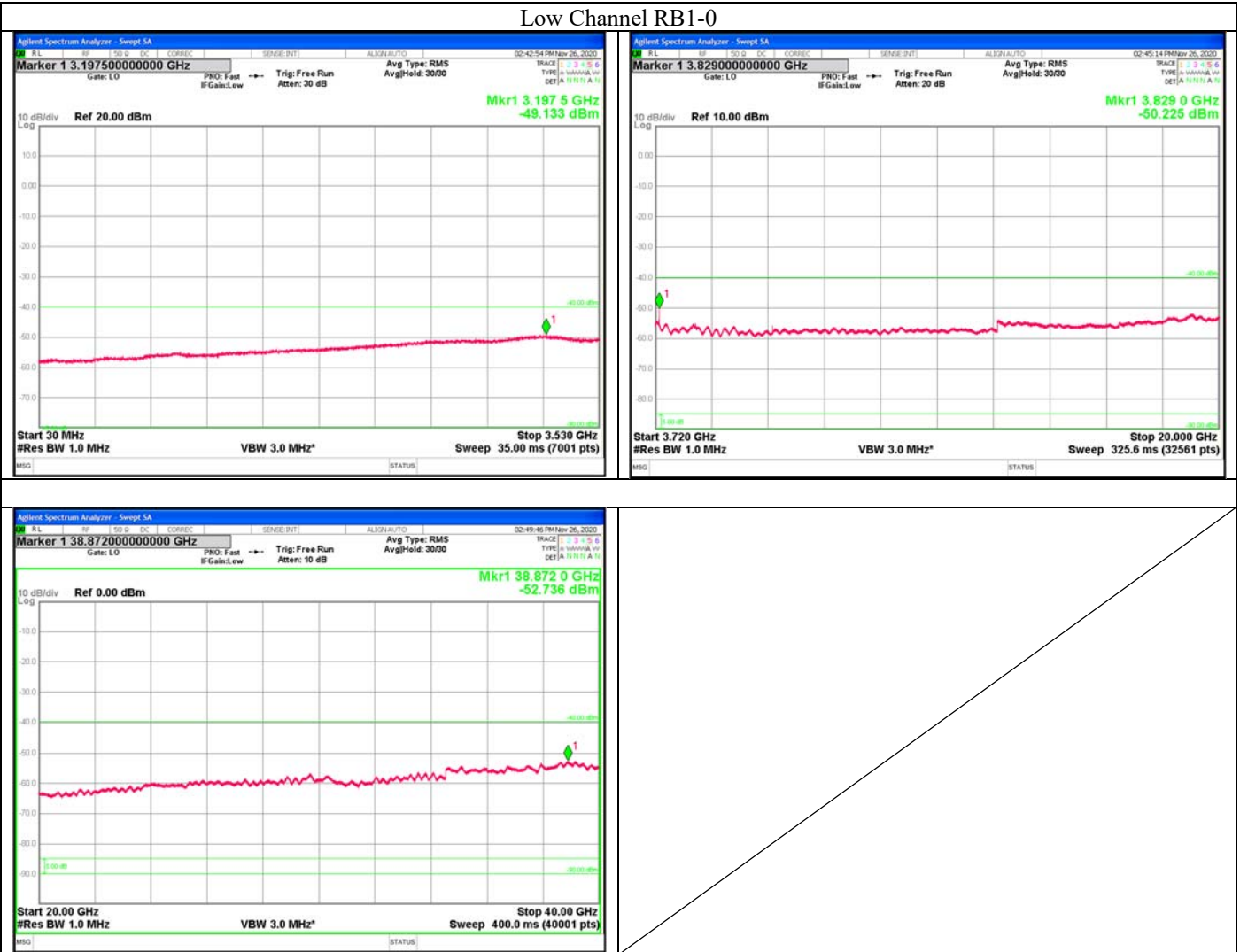
Facsimile : +81 596 24 8124



### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 15 MHz QPSK

Low Channel RB1-0



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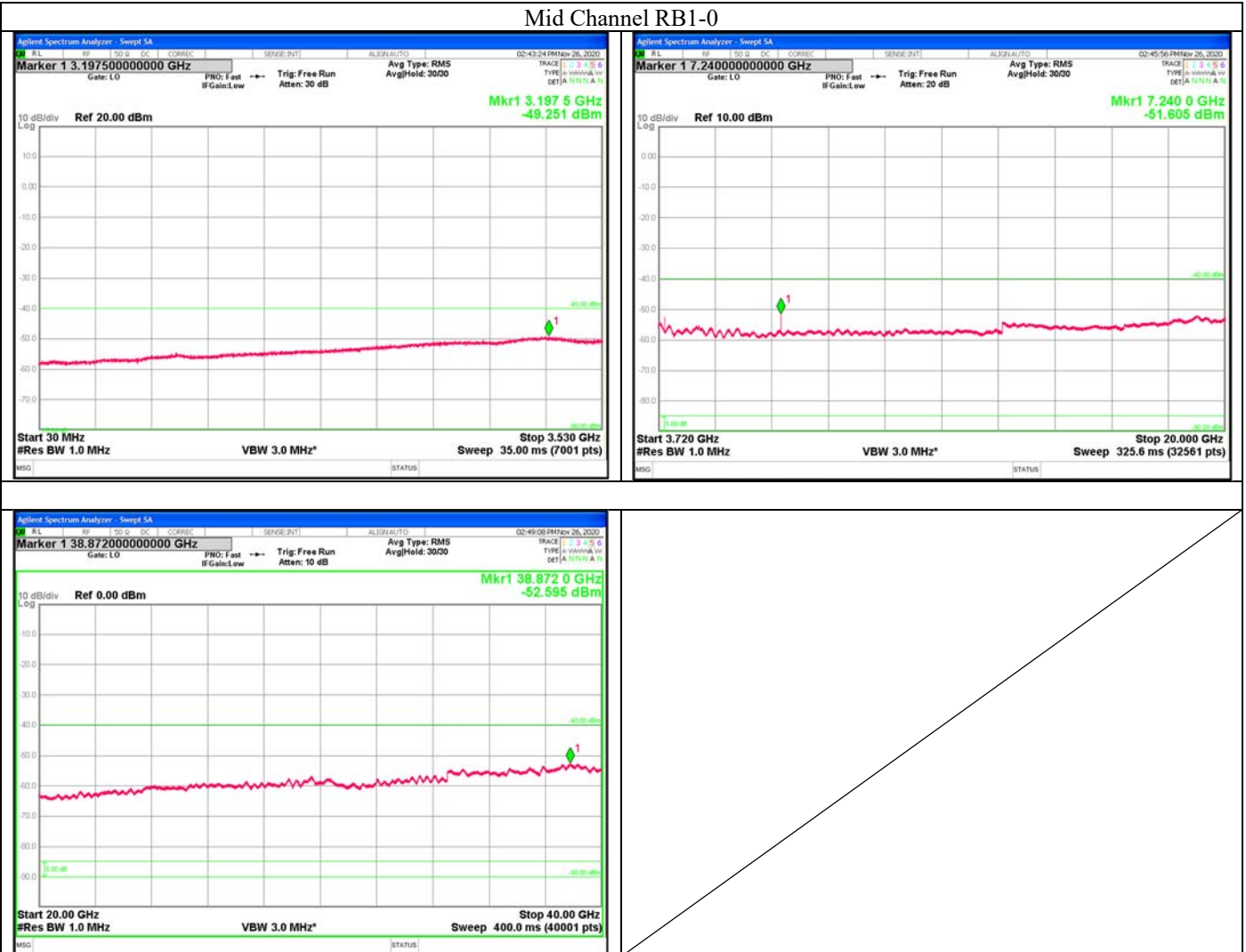
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

**Spurious Emission (Conducted)**

Report No. 13489136H  
 Test place Ise EMC Lab.  
 Shielded Room No.6  
 Date November 26, 2020  
 Temperature / Humidity 21 deg. C / 50 % RH  
 Engineer Yutaka Yoshida  
 Mode LTE Band 48 15 MHz QPSK

Mid Channel RB1-0



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**Ise EMC Lab.**

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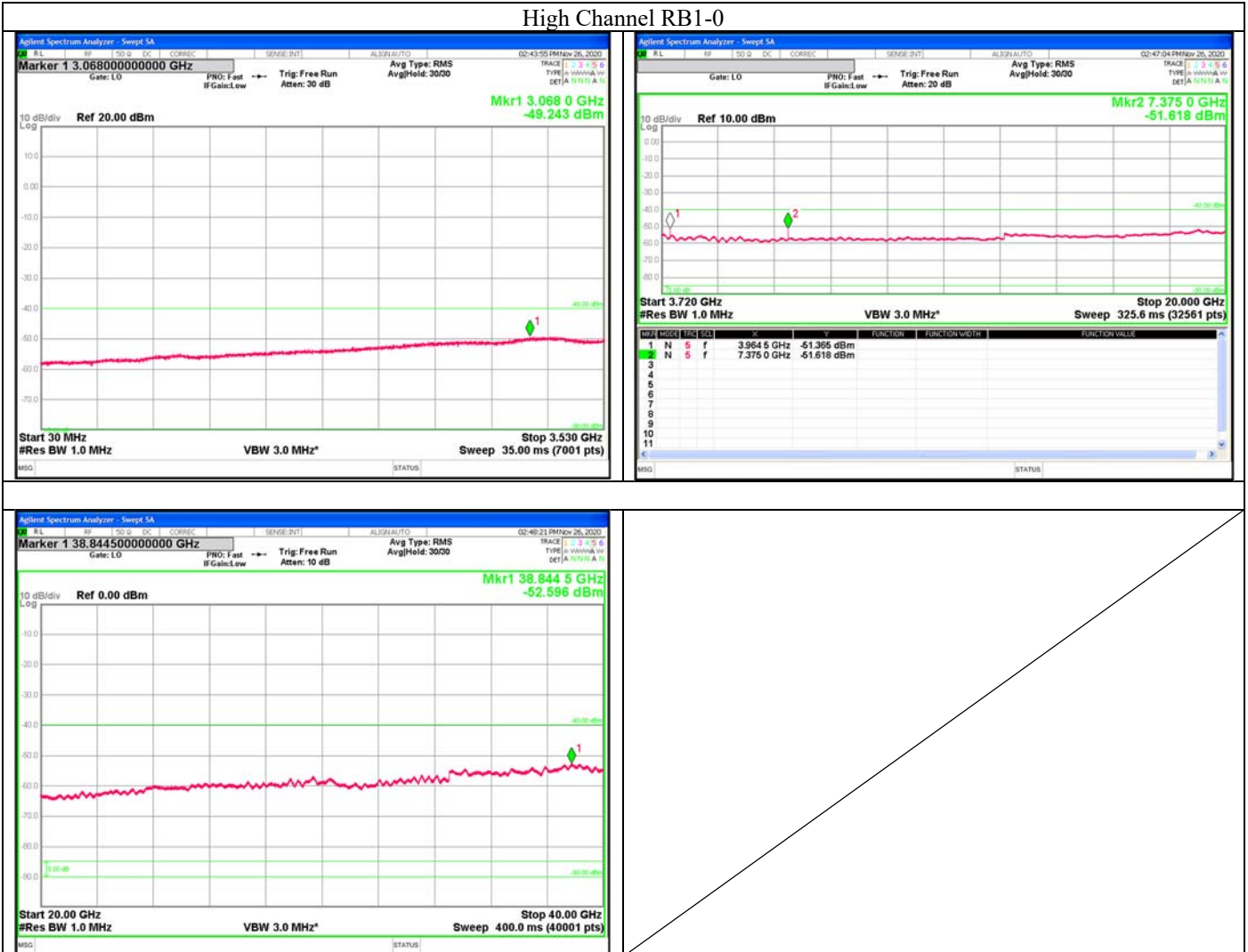
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No. 13489136H  
Test place Ise EMC Lab.  
Shielded Room No.6  
Date November 26, 2020  
Temperature / Humidity 21 deg. C / 50 % RH  
Engineer Yutaka Yoshida  
Mode LTE Band 48 15 MHz QPSK

High Channel RB1-0



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Ise EMC Lab.

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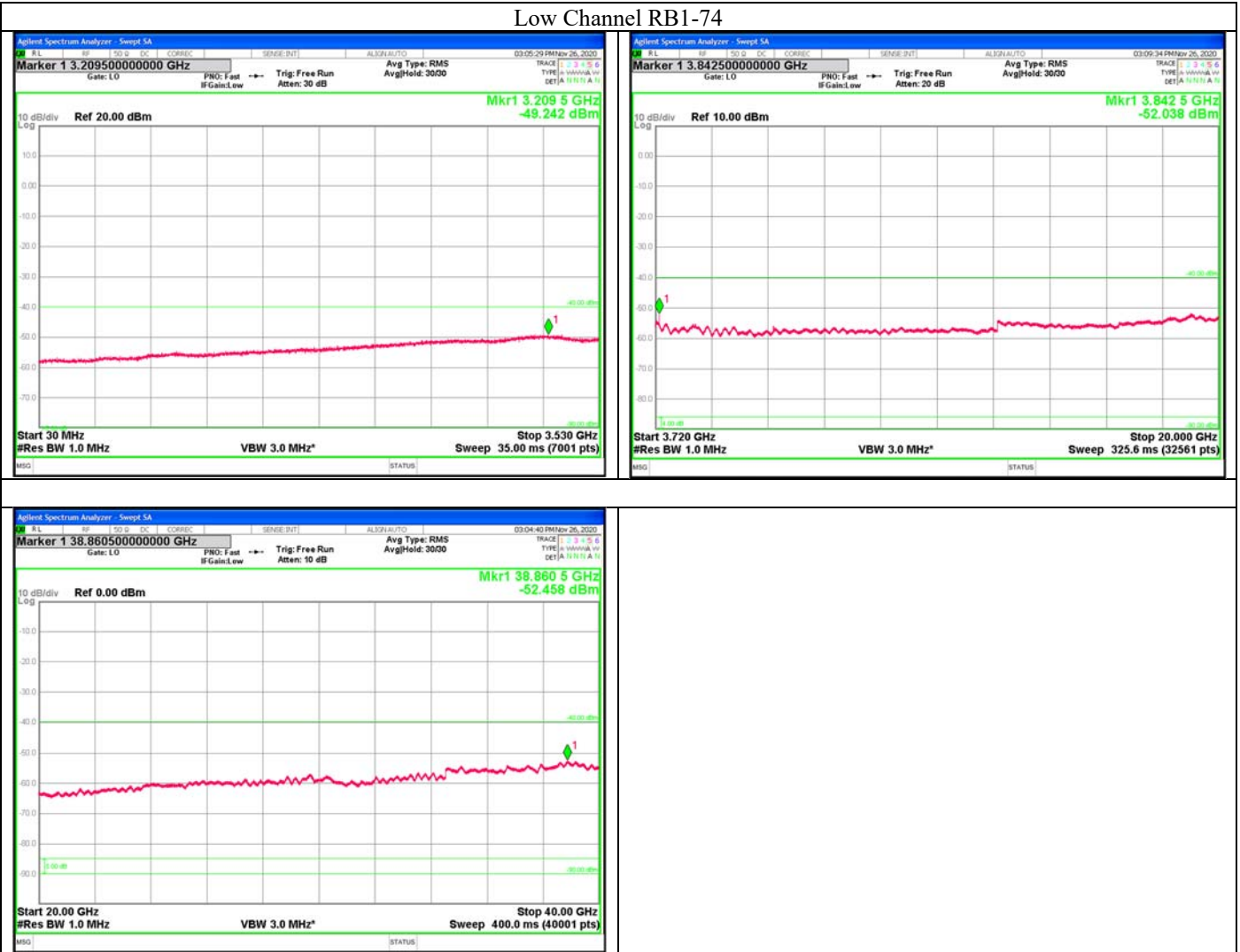
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 15 MHz QPSK

Low Channel RB1-74



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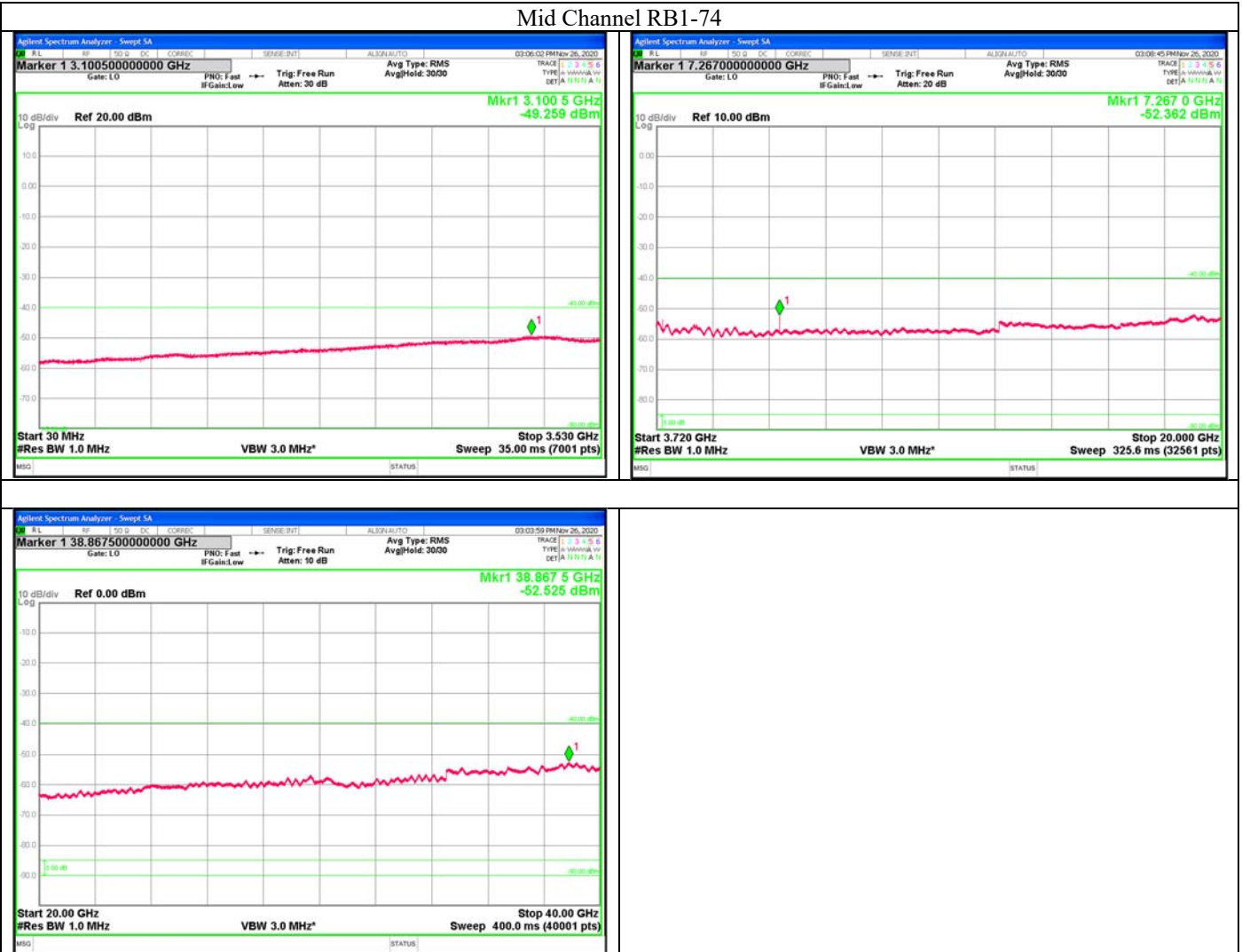
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 15 MHz QPSK

Mid Channel RB1-74



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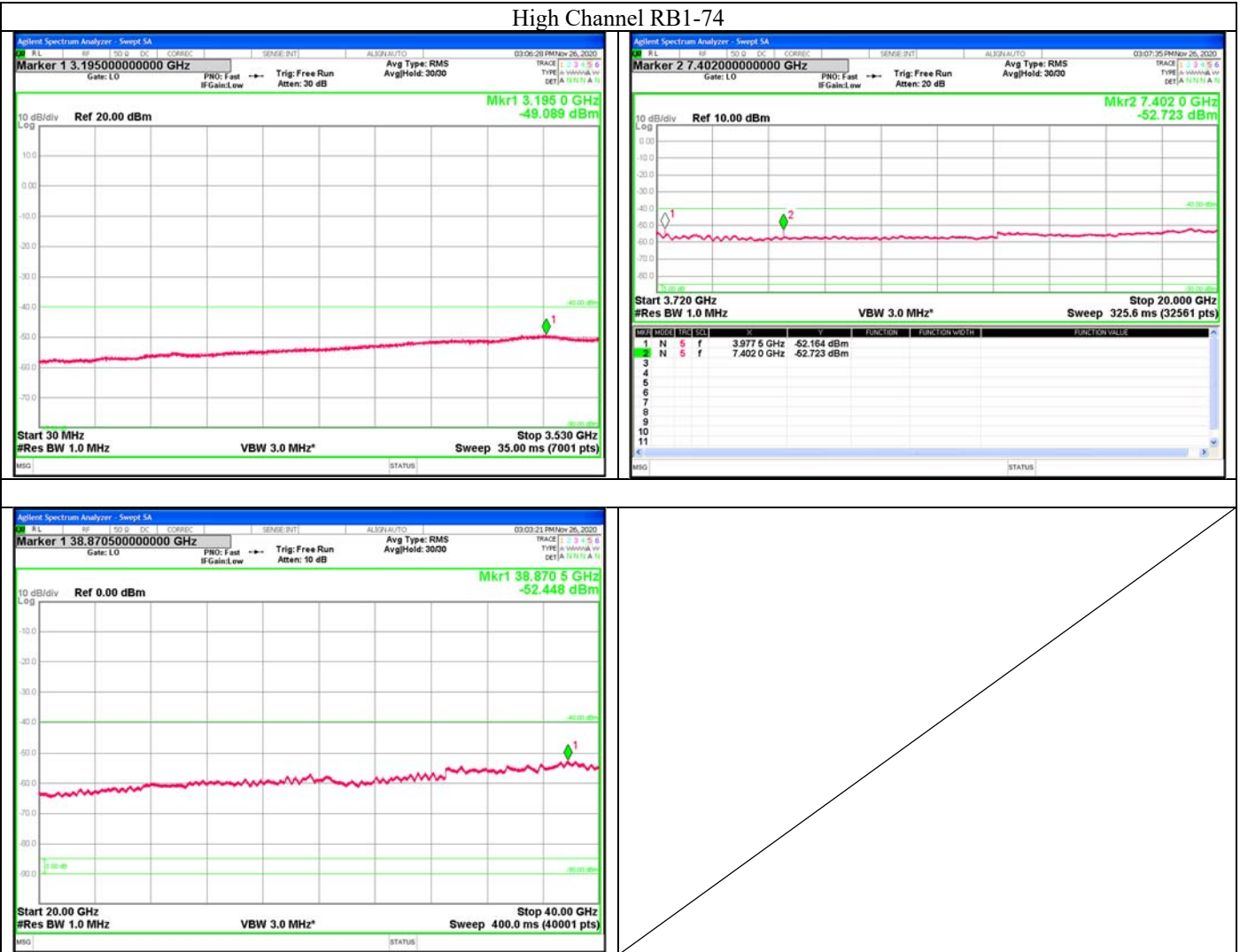
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No. 13489136H  
 Test place Ise EMC Lab.  
 Shielded Room No.6  
 Date November 26, 2020  
 Temperature / Humidity 21 deg. C / 50 % RH  
 Engineer Yutaka Yoshida  
 Mode LTE Band 48 15 MHz QPSK

High Channel RB1-74



UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

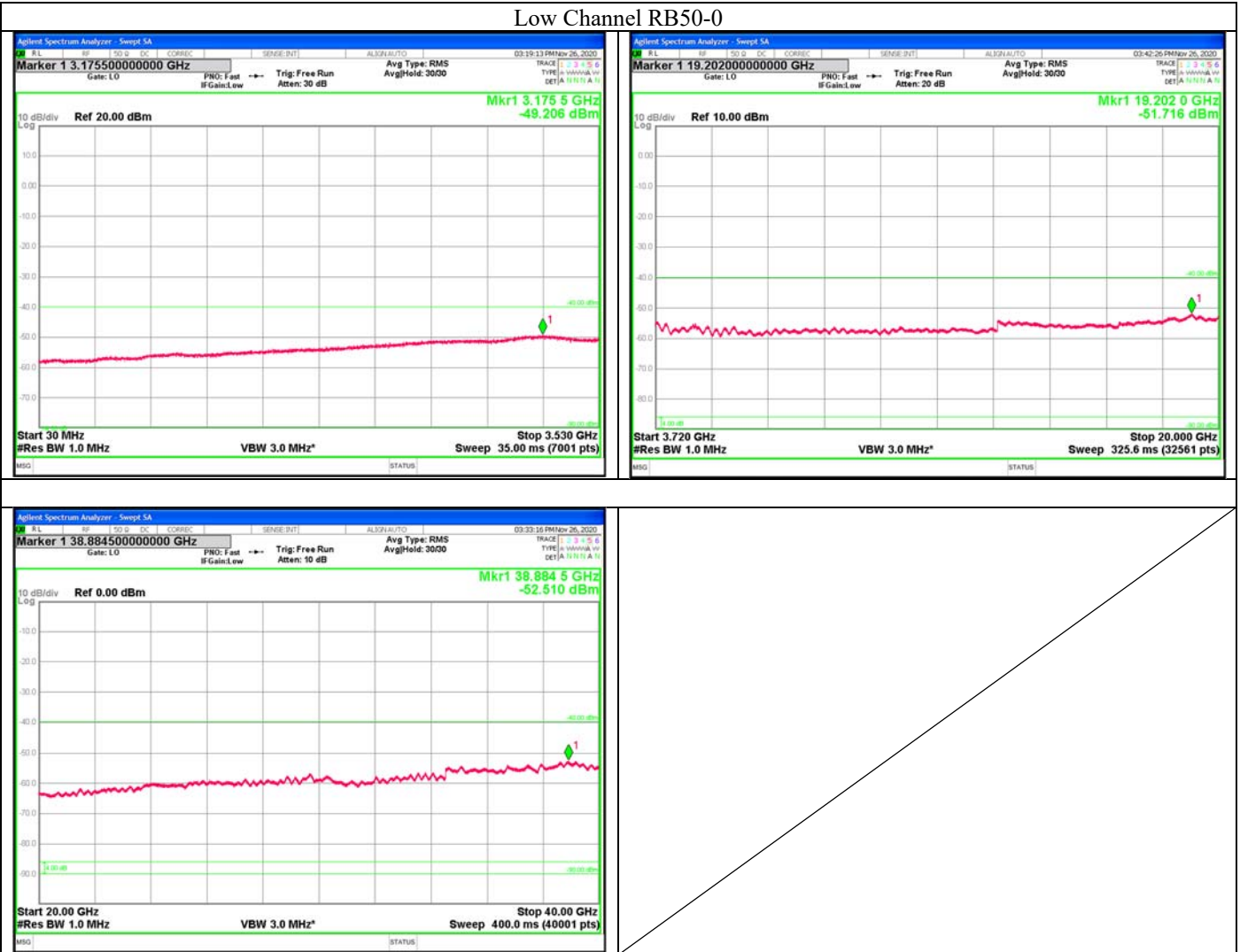
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 10 MHz QPSK

Low Channel RB50-0



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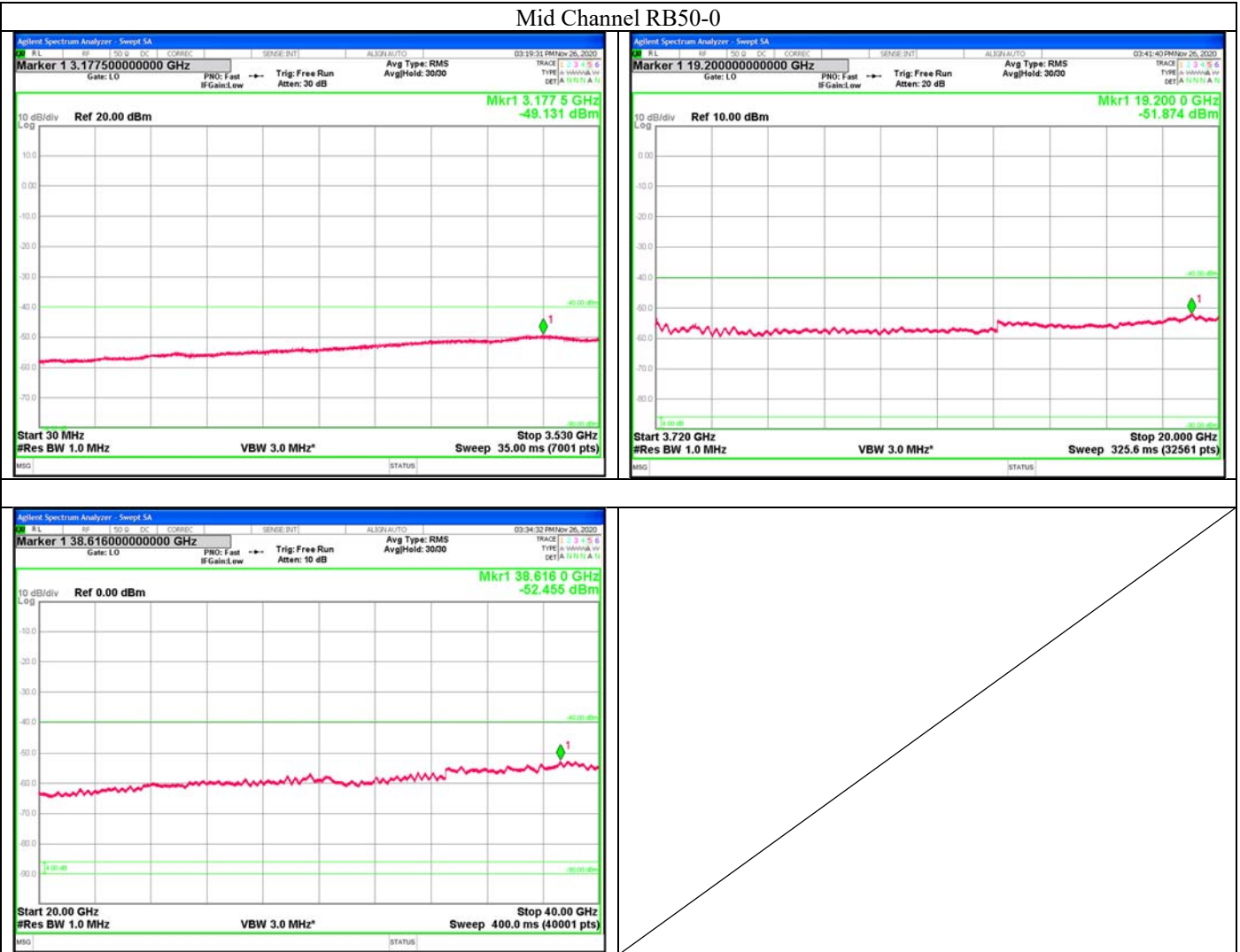
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 10 MHz QPSK

Mid Channel RB50-0



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Ise EMC Lab.

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Telephone : +81 596 24 8999

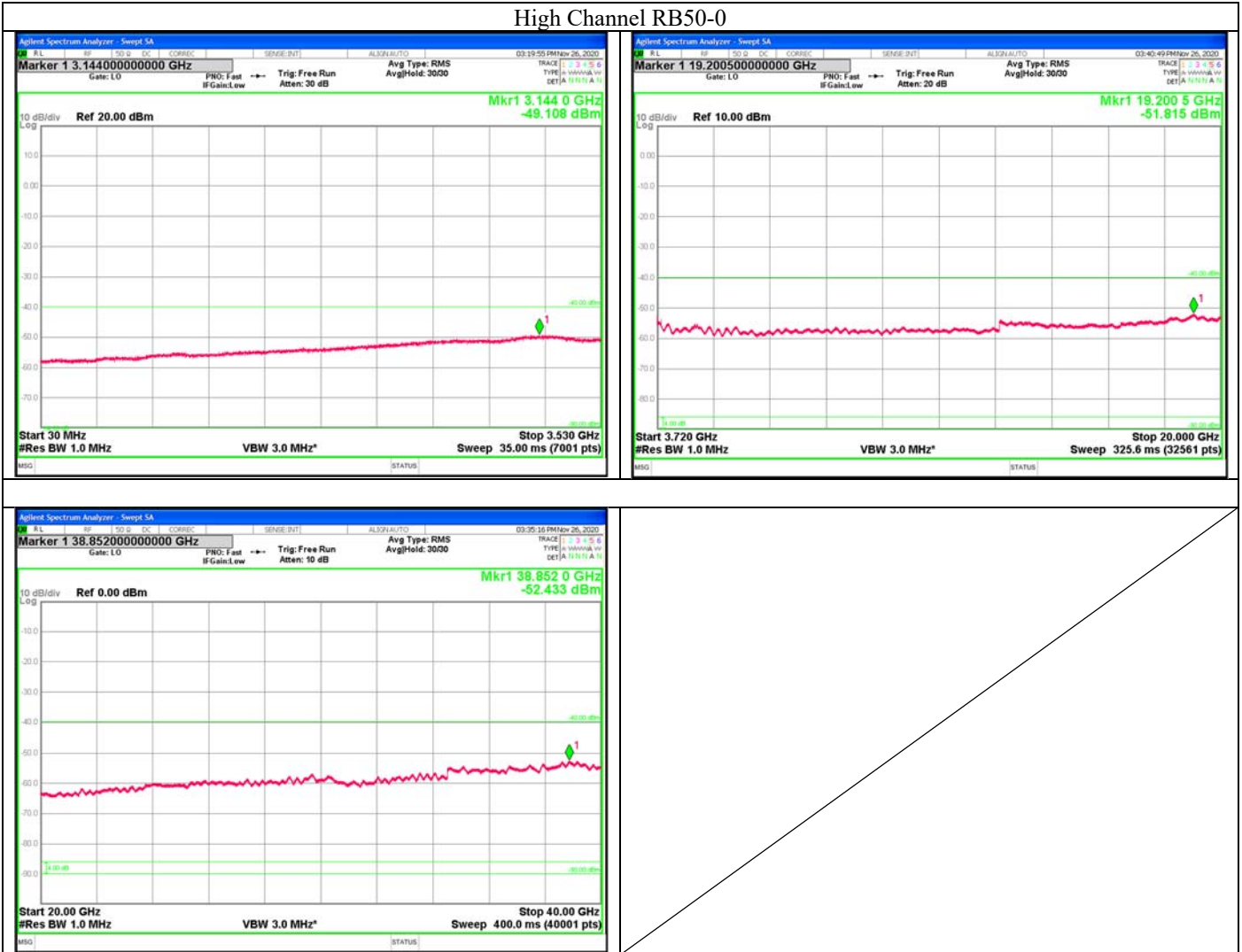
Facsimile : +81 596 24 8124



### Spurious Emission (Conducted)

Report No. 13489136H  
Test place Ise EMC Lab.  
Shielded Room No.6  
Date November 26, 2020  
Temperature / Humidity 21 deg. C / 50 % RH  
Engineer Yutaka Yoshida  
Mode LTE Band 48 10 MHz QPSK

High Channel RB50-0



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Ise EMC Lab.

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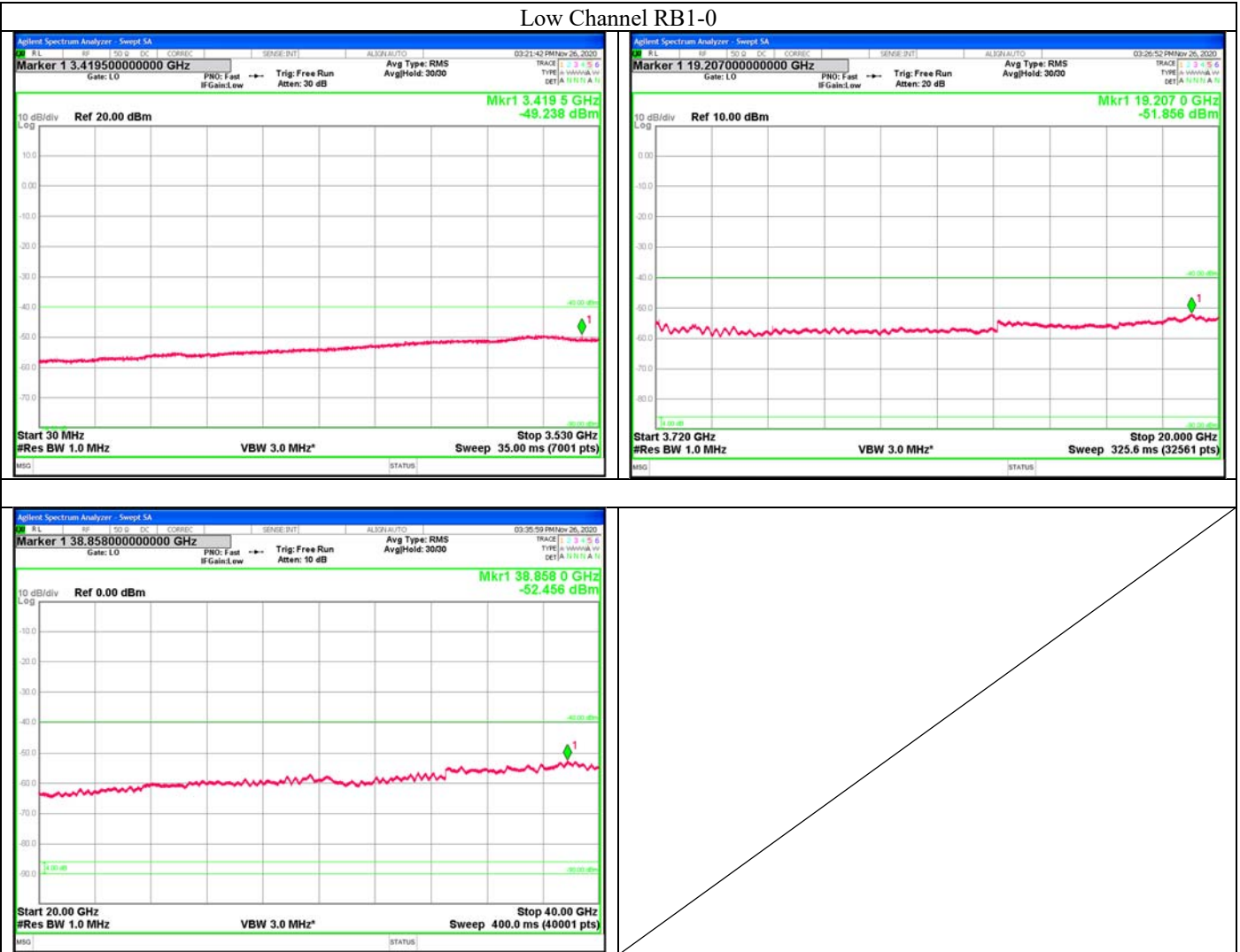
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 10 MHz QPSK

Low Channel RB1-0



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Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

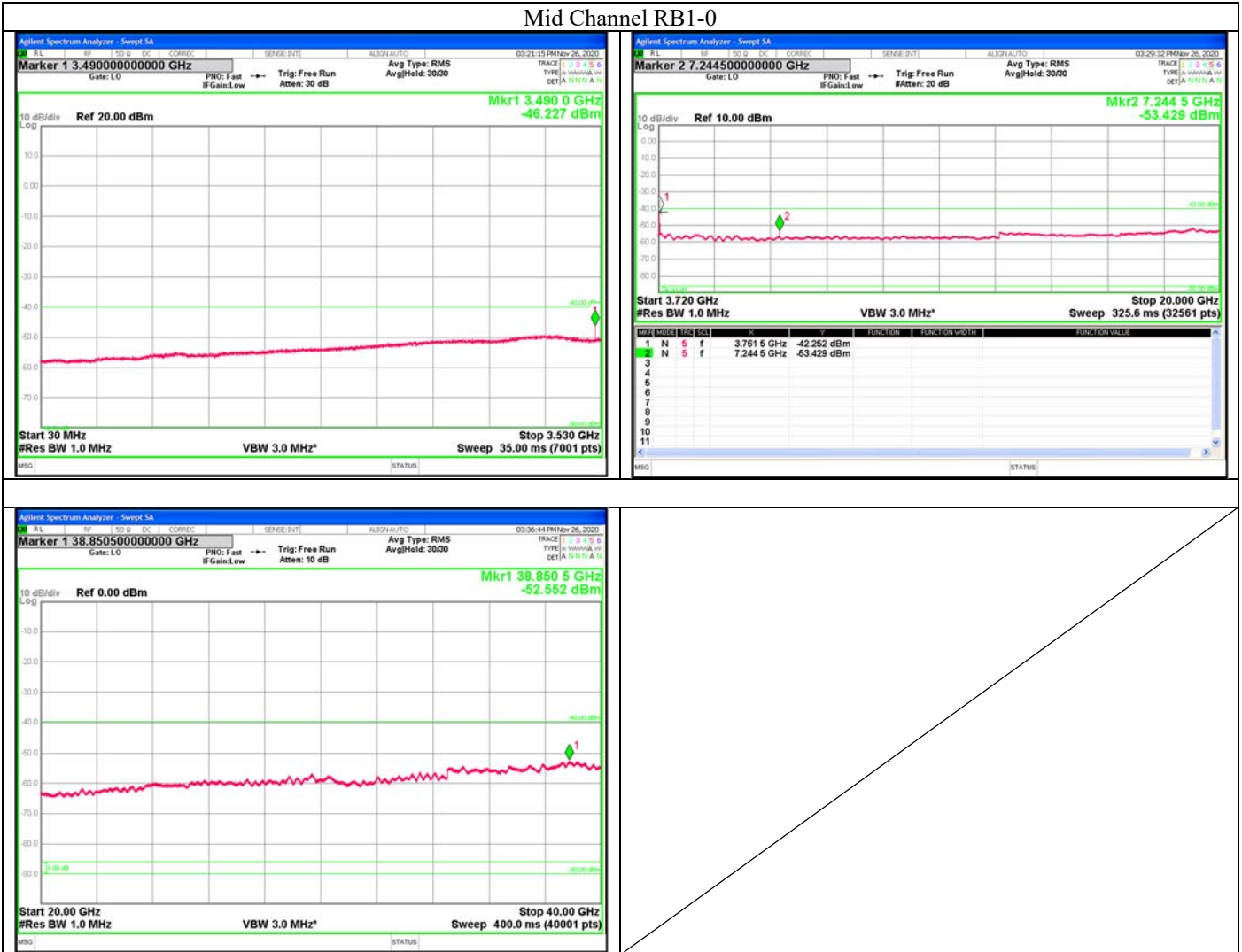
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No. 13489136H  
 Test place Ise EMC Lab.  
 Shielded Room No.6  
 Date November 26, 2020  
 Temperature / Humidity 21 deg. C / 50 % RH  
 Engineer Yutaka Yoshida  
 Mode LTE Band 48 10 MHz QPSK

Mid Channel RB1-0



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Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

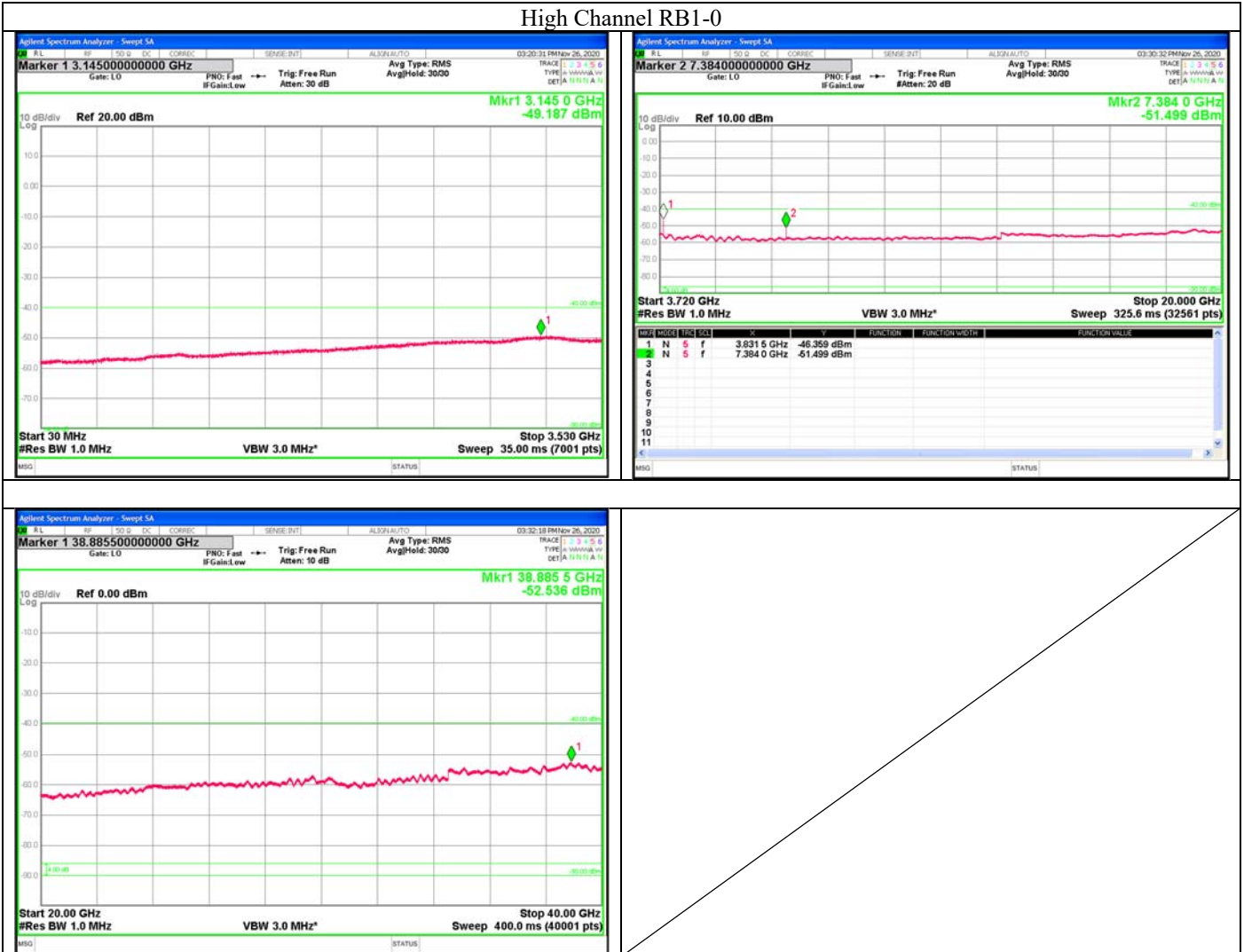
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No. 13489136H  
 Test place Ise EMC Lab.  
 Shielded Room No.6  
 Date November 26, 2020  
 Temperature / Humidity 21 deg. C / 50 % RH  
 Engineer Yutaka Yoshida  
 Mode LTE Band 48 10 MHz QPSK

High Channel RB1-0



UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

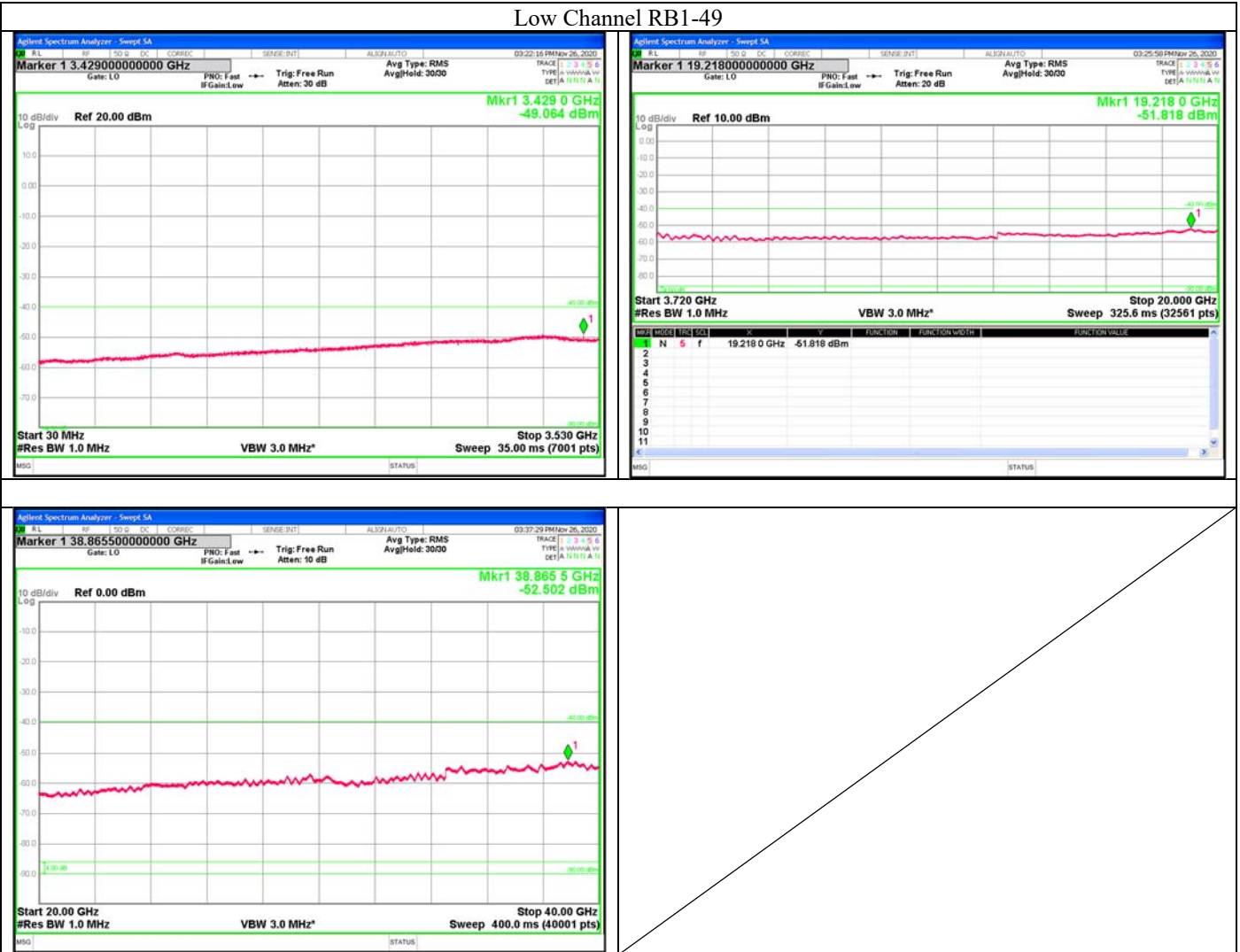
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No. 13489136H  
 Test place Ise EMC Lab.  
 Shielded Room No.6  
 Date November 26, 2020  
 Temperature / Humidity 21 deg. C / 50 % RH  
 Engineer Yutaka Yoshida  
 Mode LTE Band 48 10 MHz QPSK

Low Channel RB1-49



UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

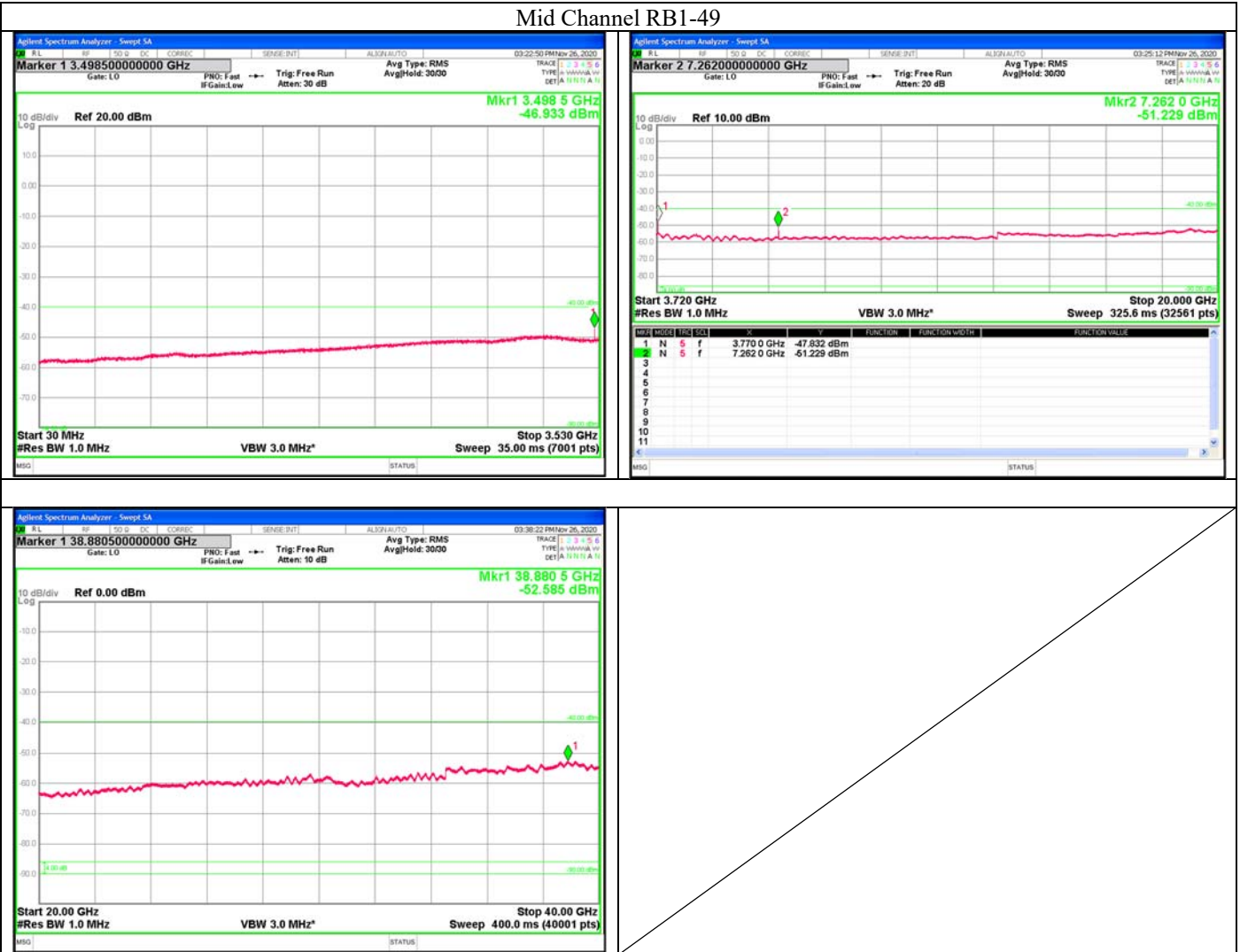
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No. 13489136H  
 Test place Ise EMC Lab.  
 Shielded Room No.6  
 Date November 26, 2020  
 Temperature / Humidity 21 deg. C / 50 % RH  
 Engineer Yutaka Yoshida  
 Mode LTE Band 48 10 MHz QPSK

Mid Channel RB1-49



UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

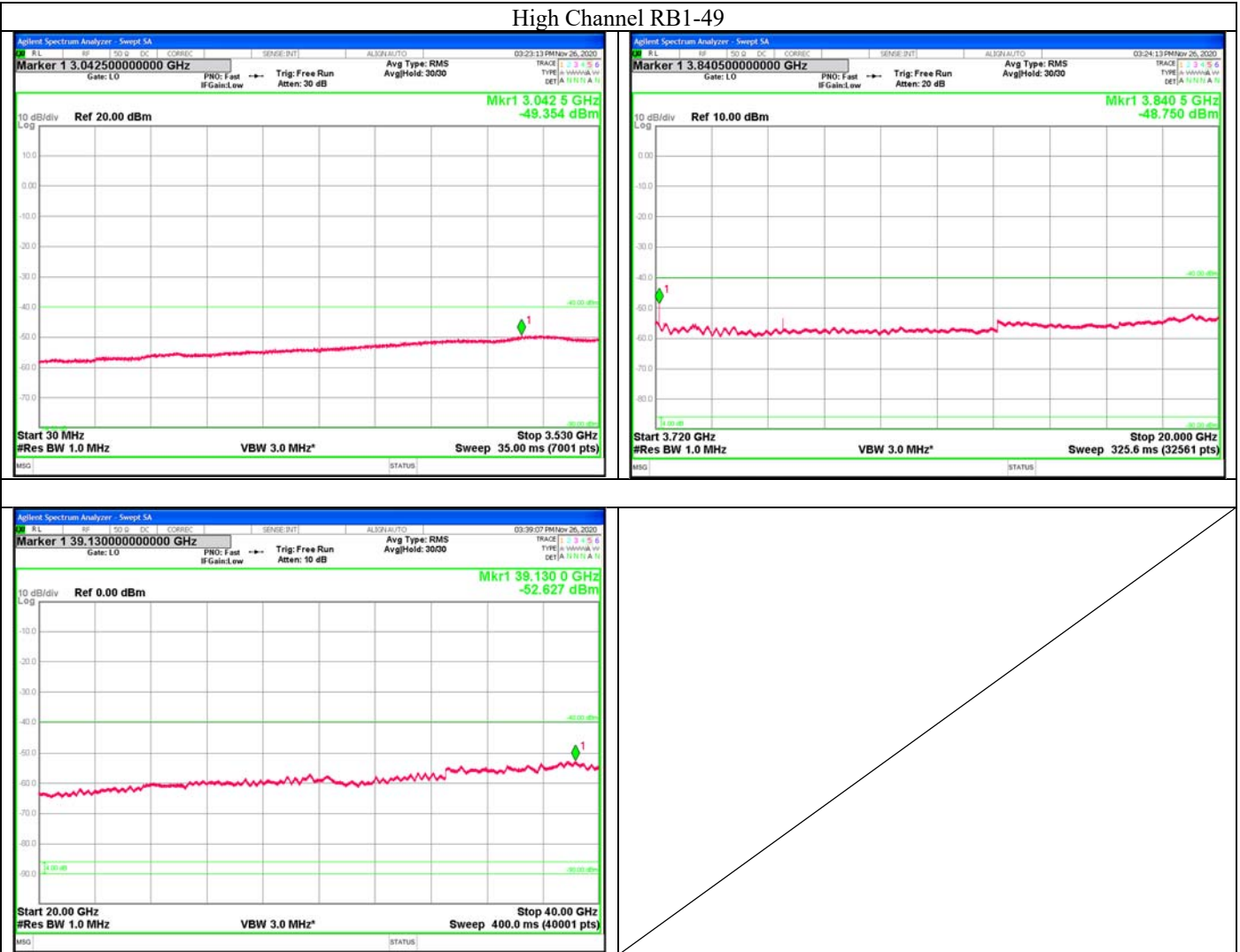
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 10 MHz QPSK

High Channel RB1-49



UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

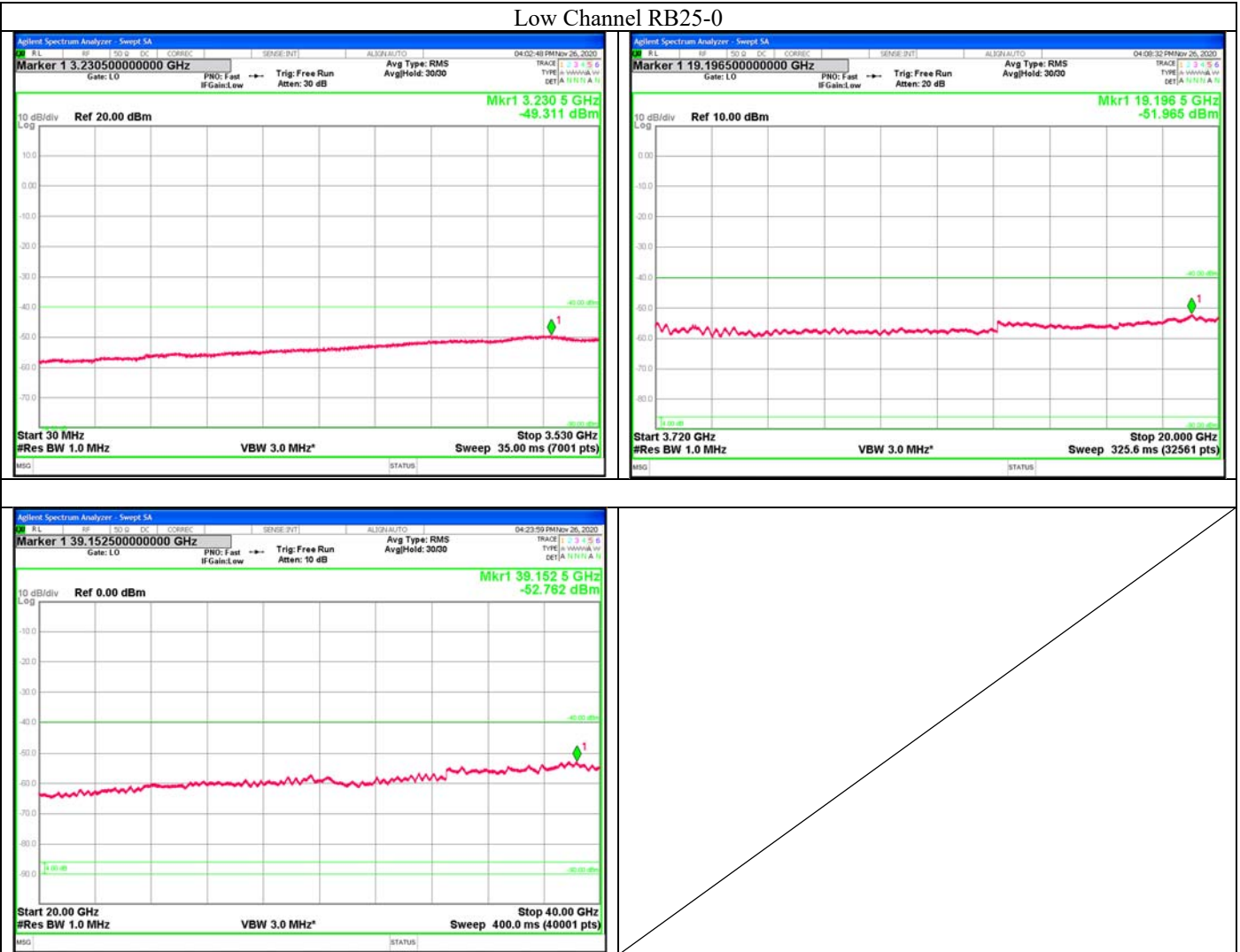
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 5 MHz QPSK

Low Channel RB25-0



UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8999

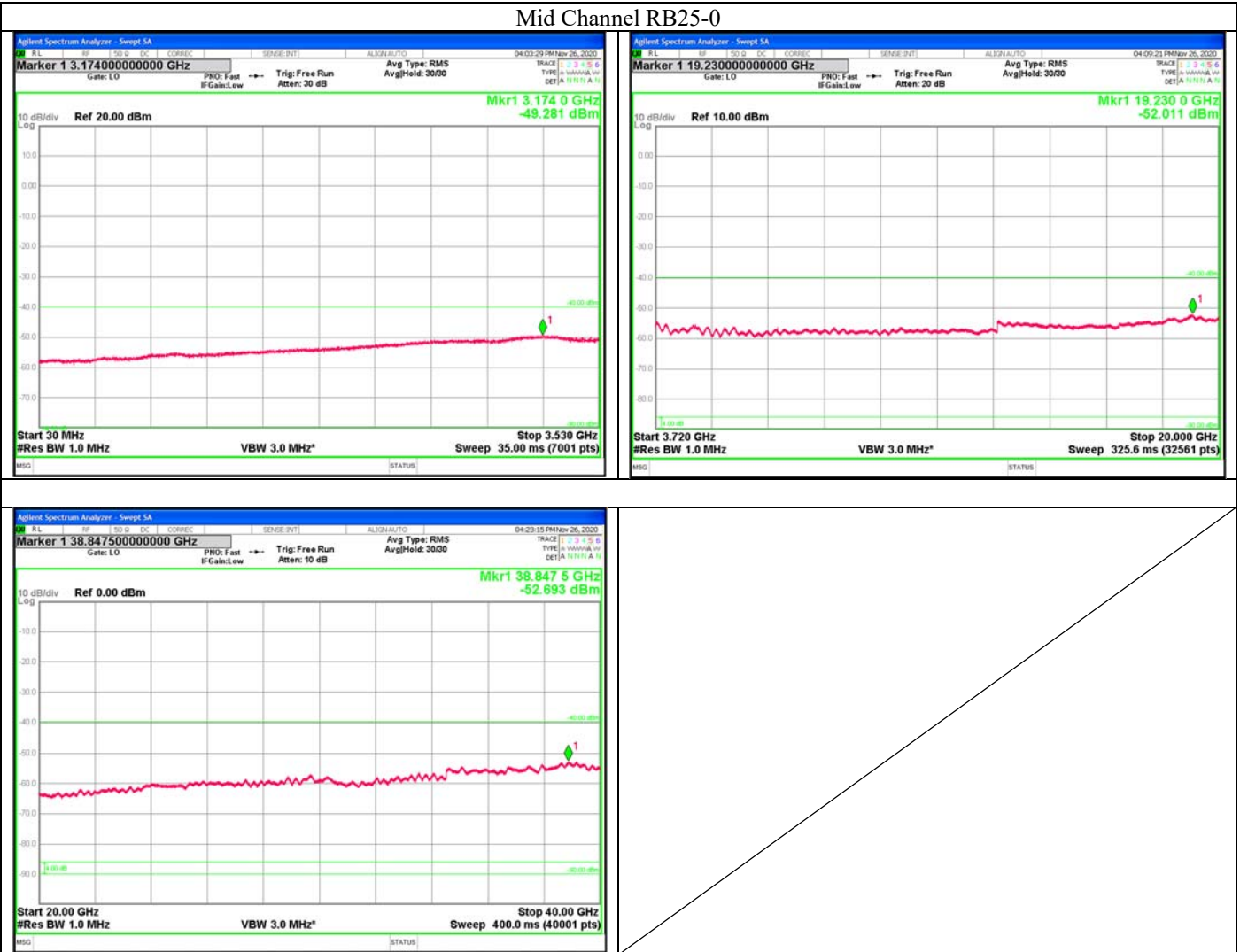
Facsimile : +81 596 24 8124



### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 5 MHz QPSK

Mid Channel RB25-0



UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

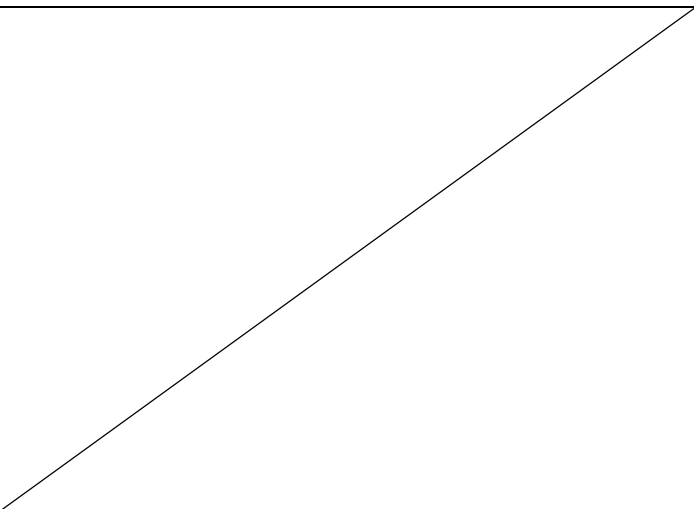
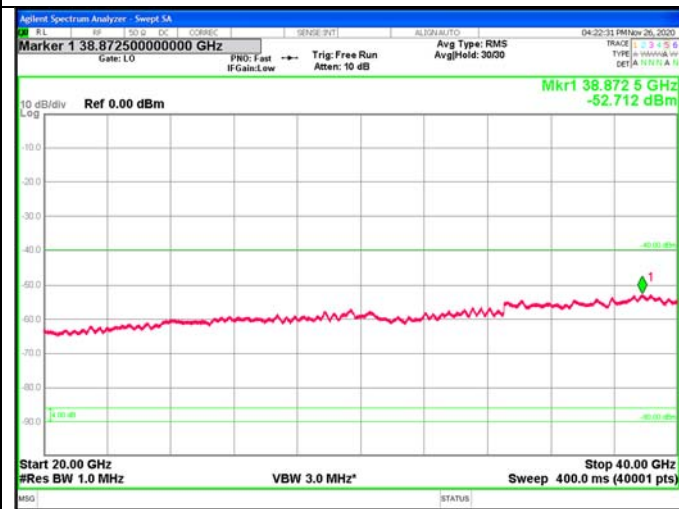
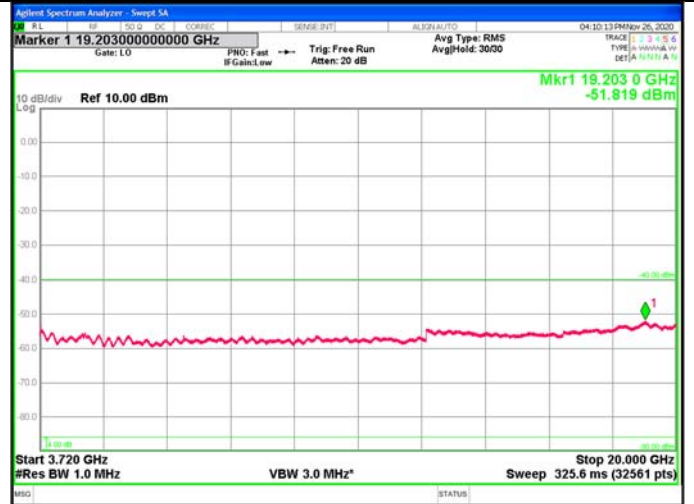
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 5 MHz QPSK

#### High Channel RB25-0



UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

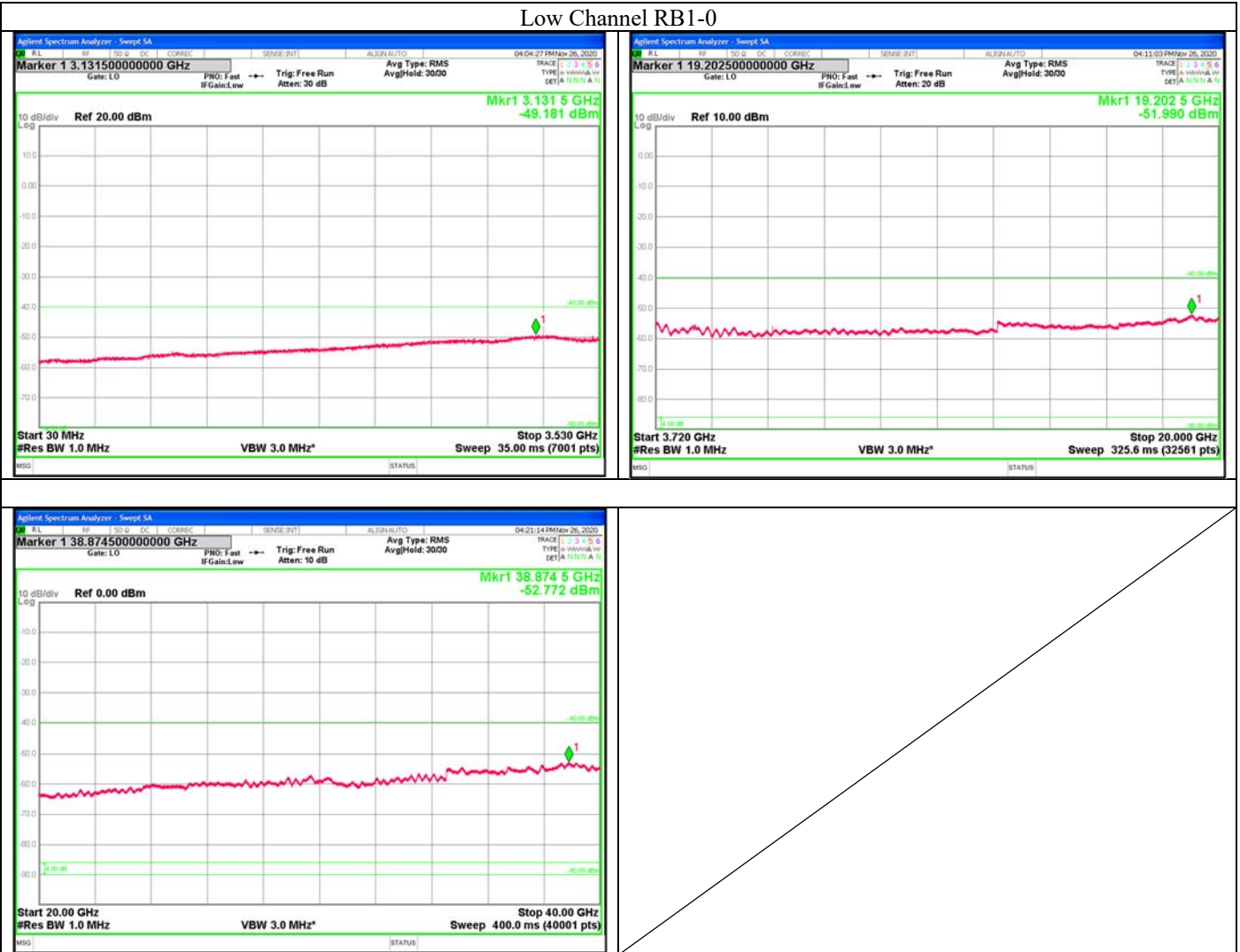
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 5 MHz QPSK

Low Channel RB1-0



UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

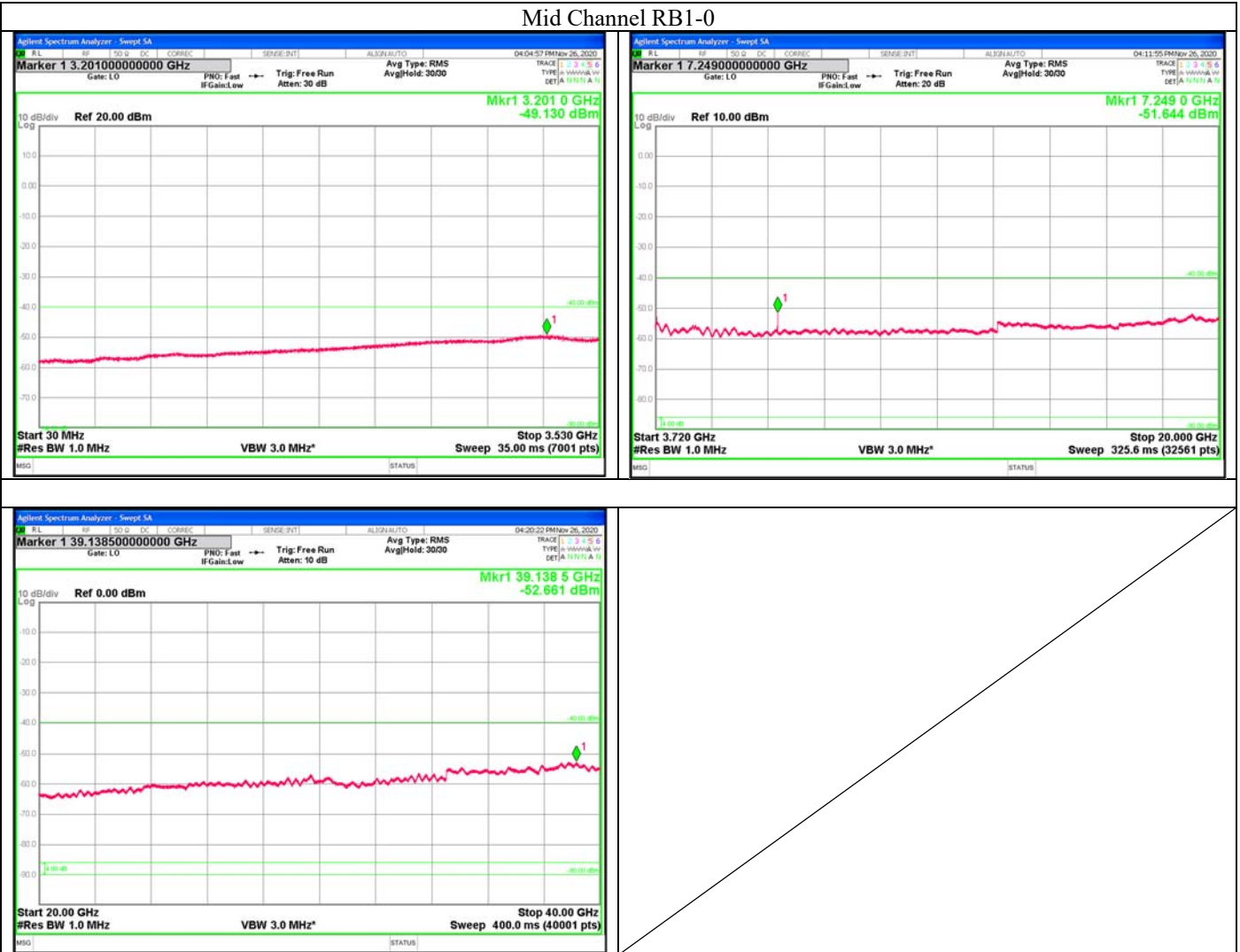
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 5 MHz QPSK

Mid Channel RB1-0



**UL Japan, Inc.**

**Ise EMC Lab.**

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

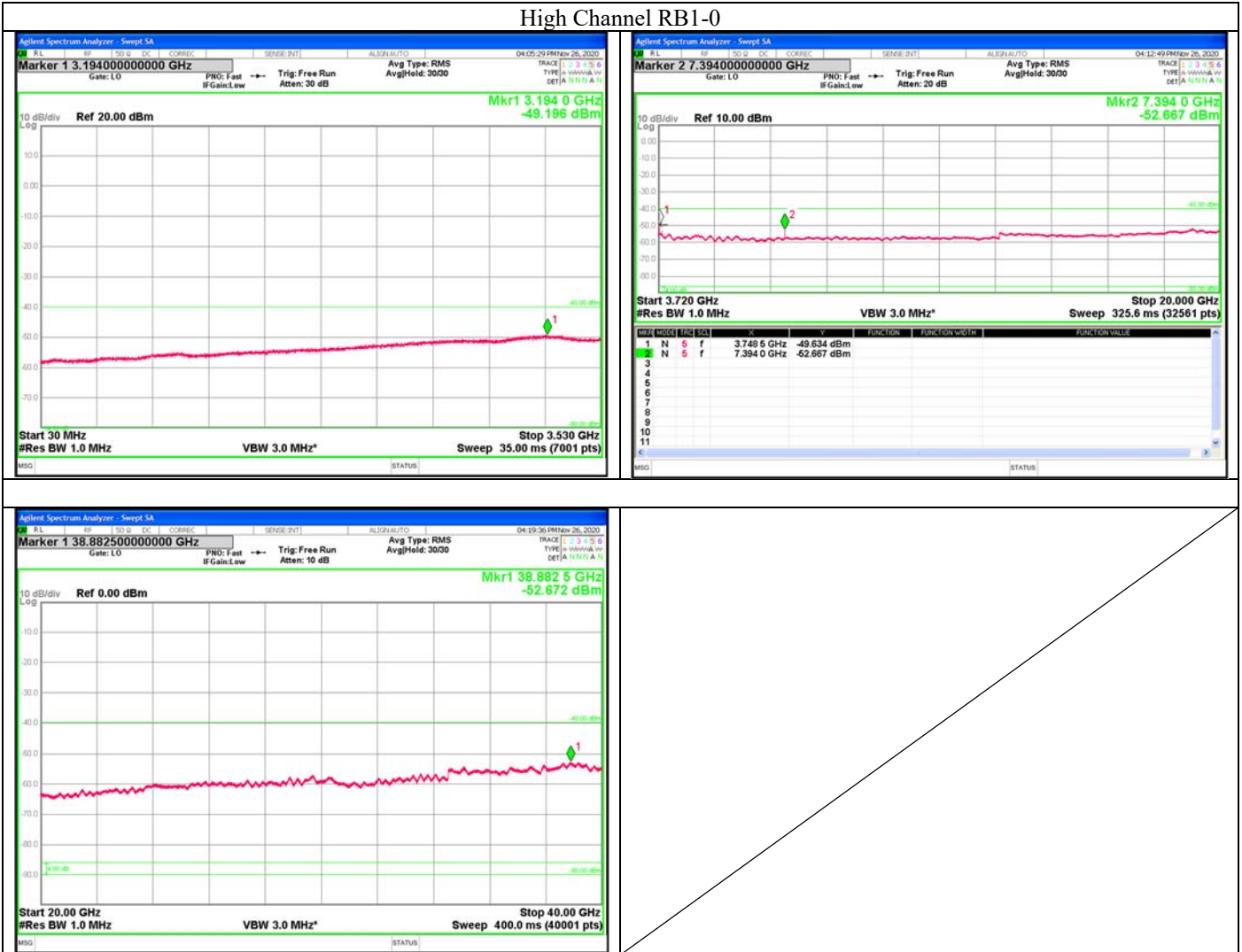
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No. 13489136H  
 Test place Ise EMC Lab.  
 Shielded Room No.6  
 Date November 26, 2020  
 Temperature / Humidity 21 deg. C / 50 % RH  
 Engineer Yutaka Yoshida  
 Mode LTE Band 48 5 MHz QPSK

High Channel RB1-0



UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

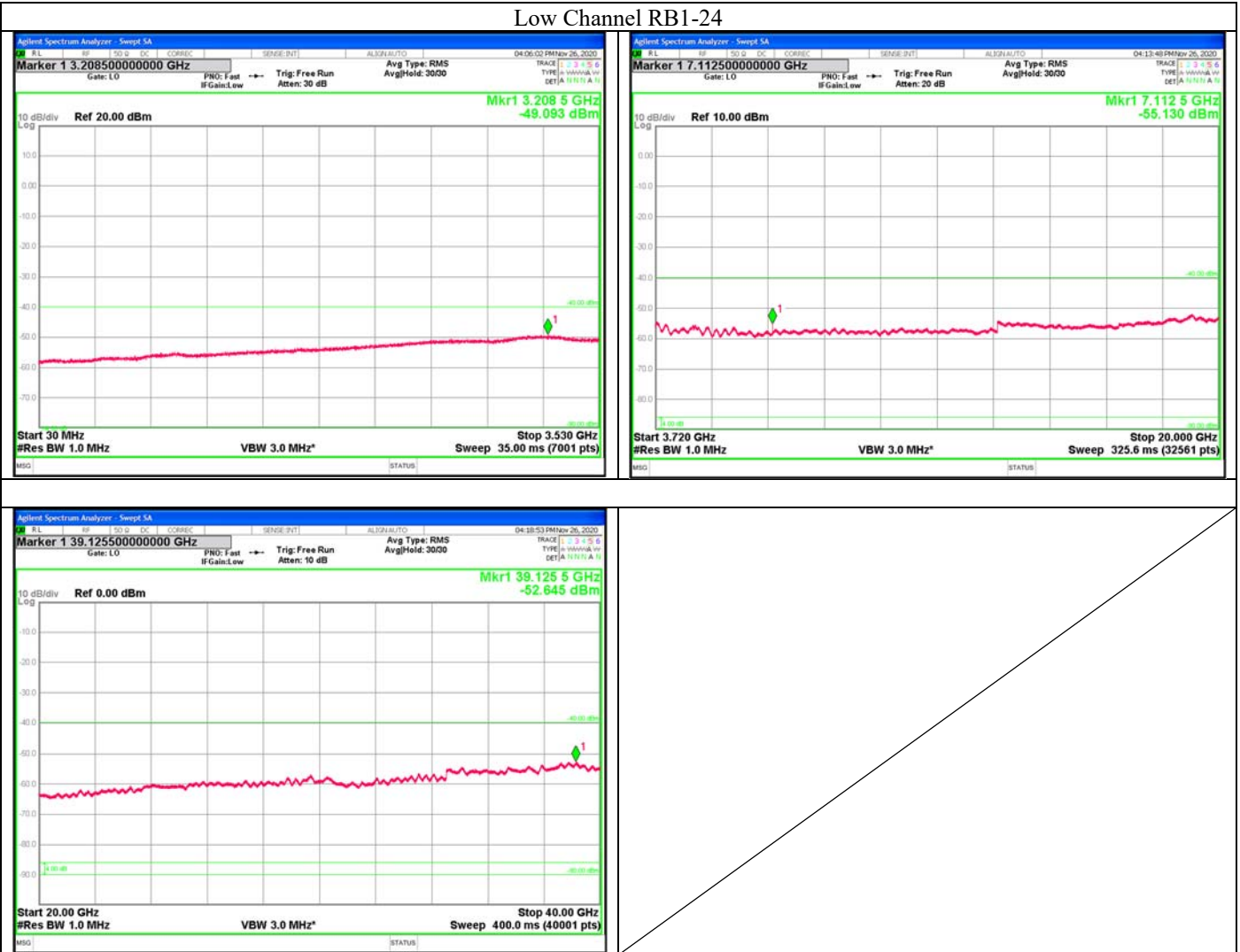
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 10 MHz QPSK

Low Channel RB1-24



UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

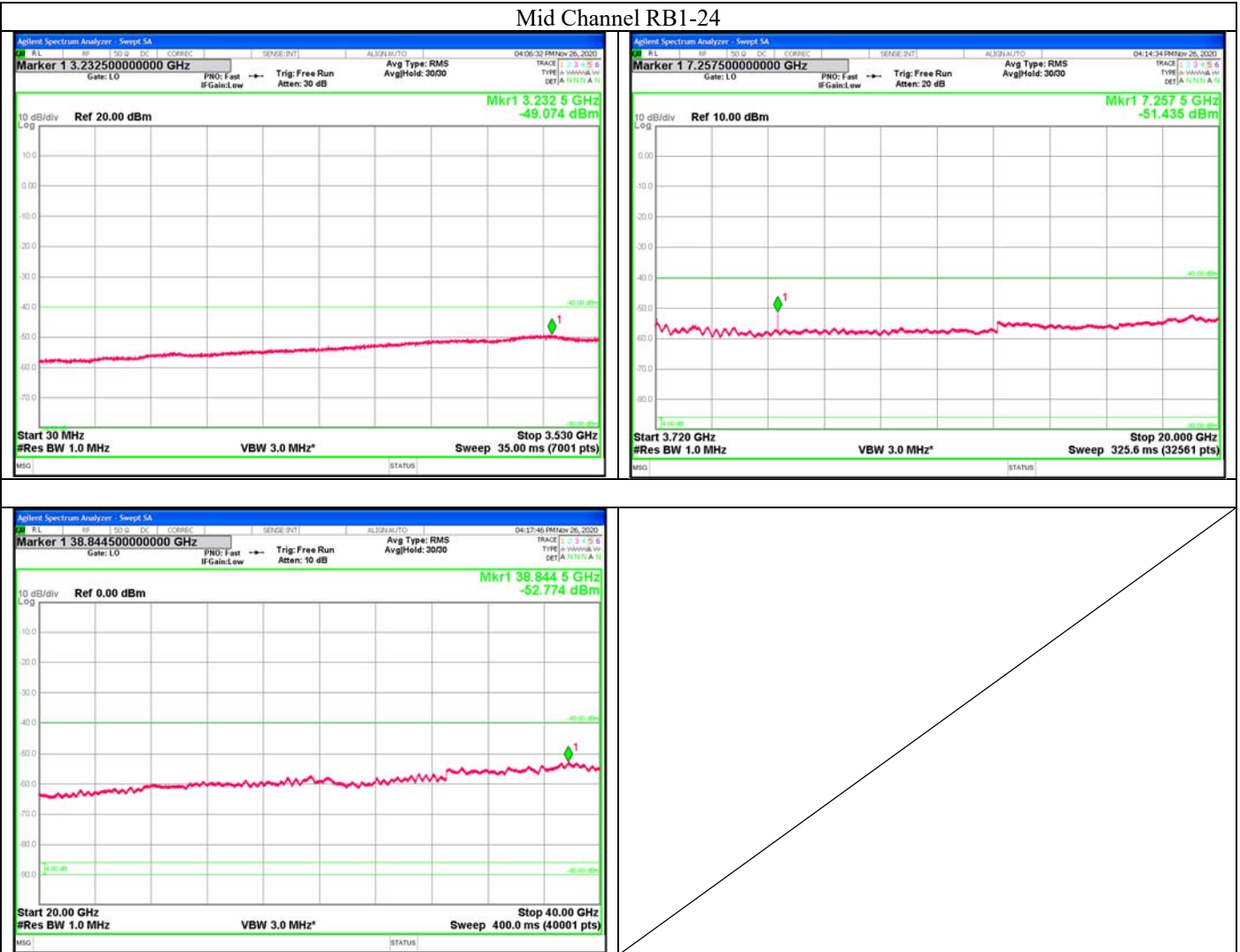
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No.	13489136H
Test place	Ise EMC Lab.
Shielded Room	No.6
Date	November 26, 2020
Temperature / Humidity	21 deg. C / 50 % RH
Engineer	Yutaka Yoshida
Mode	LTE Band 48 10 MHz QPSK

Mid Channel RB1-24



UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

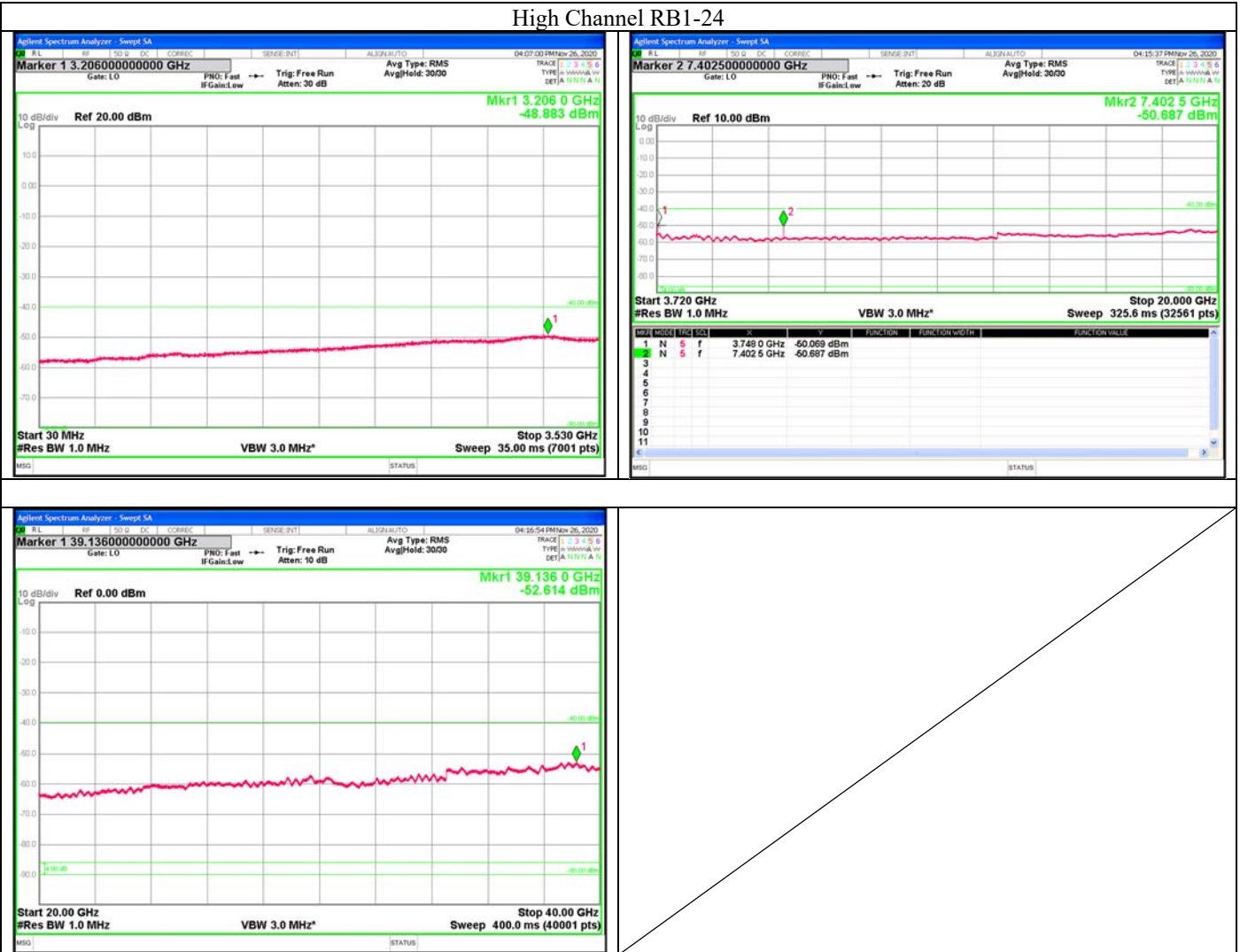
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

### Spurious Emission (Conducted)

Report No. 13489136H  
 Test place Ise EMC Lab.  
 Shielded Room No.6  
 Date November 26, 2020  
 Temperature / Humidity 21 deg. C / 50 % RH  
 Engineer Yutaka Yoshida  
 Mode LTE Band 48 10 MHz QPSK

High Channel RB1-24



UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124



## Spurious Emission (Radiated)

Report No. 13489136H  
Test place Ise EMC Lab.  
Semi Anechoic Chamber No.4  
Date March 18, 2021  
Temperature / Humidity 21 deg. C / 37 % RH  
Engineer Akihiko Maeda  
Mode LTE Band 48 20 MHz QPSK  
55340ch 3560 MHz 1RB Start49

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Distance [m]	EIRP [dBm]	ERP [dBm]	Limit [dBm]	Margin [dB]	Remark
Hori.	42.916	PK	28.8	13.7	7.3	31.5	18.3	3.0	-77.0	-79.1	-40.0	39.1	
Hori.	54.513	PK	28.8	9.5	7.5	31.5	14.2	3.0	-81.0	-83.2	-40.0	43.2	
Hori.	82.446	PK	28.3	7.1	7.8	31.5	11.8	3.0	-83.5	-85.6	-40.0	45.6	
Hori.	100.350	PK	28.9	10.2	8.0	31.5	15.6	3.0	-79.7	-81.8	-40.0	41.8	
Hori.	222.817	PK	29.2	11.2	9.0	31.3	18.1	3.0	-77.1	-79.3	-40.0	39.3	
Hori.	328.967	PK	28.9	14.5	9.7	31.3	21.8	3.0	-73.4	-75.6	-40.0	35.6	
Hori.	7120.000	PK	37.6	36.2	8.7	32.3	50.2	3.0	-45.1	-47.2	-40.0	7.2	Floor noise
Hori.	10680.000	PK	38.5	39.8	-2.6	33.1	42.6	3.0	-52.7	-54.8	-40.0	14.8	Floor noise
Hori.	14240.000	PK	38.1	41.1	-2.1	32.4	44.7	3.0	-50.6	-52.7	-40.0	12.7	Floor noise
Vert.	42.916	PK	31.6	13.7	7.3	31.5	21.1	3.0	-74.2	-76.3	-40.0	36.3	
Vert.	54.513	PK	32.9	9.5	7.5	31.5	18.3	3.0	-76.9	-79.1	-40.0	39.1	
Vert.	82.446	PK	36.3	7.1	7.8	31.5	19.8	3.0	-75.5	-77.6	-40.0	37.6	
Vert.	100.350	PK	36.7	10.2	8.0	31.5	23.4	3.0	-71.9	-74.0	-40.0	34.0	
Vert.	222.817	PK	37.8	11.2	9.0	31.3	26.7	3.0	-68.5	-70.7	-40.0	30.7	
Vert.	328.967	PK	28.9	14.5	9.7	31.3	21.8	3.0	-73.4	-75.6	-40.0	35.6	
Vert.	7120.000	PK	37.6	36.2	8.7	32.3	50.2	3.0	-45.1	-47.2	-40.0	7.2	Floor noise
Vert.	10680.000	PK	38.5	39.8	-2.6	33.1	42.6	3.0	-52.7	-54.8	-40.0	14.8	Floor noise
Vert.	14240.000	PK	38.1	41.1	-2.1	32.4	44.7	3.0	-50.6	-52.7	-40.0	12.7	Floor noise

Result (E) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

EIRP = E + 20\*log(D) -104.8

ERP =EIRP -2.15

\*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log(3.85 m / 3.0 m) = 2.17 dB  
10 GHz - 40 GHz 20log(1.0 m / 3.0 m) = -9.5 dB

## Spurious Emission (Radiated)

Report No. 13489136H  
Test place Ise EMC Lab.  
Semi Anechoic Chamber No.4  
Date March 18, 2021  
Temperature / Humidity 21 deg. C / 37 % RH  
Engineer Akihiko Maeda  
Mode LTE Band 48 20 MHz QPSK  
55990ch 3625 MHz 1RB Start49

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Distance [m]	EIRP [dBm]	ERP [dBm]	Limit [dBm]	Margin [dB]	Remark
Hori.	42.347	PK	29.0	13.9	7.3	31.5	18.7	3.0	-76.5	-78.7	-40.0	38.7	
Hori.	51.728	PK	28.6	10.5	7.4	31.5	15.0	3.0	-80.2	-82.4	-40.0	42.4	
Hori.	80.593	PK	29.0	6.9	7.8	31.5	12.2	3.0	-83.0	-85.2	-40.0	45.2	
Hori.	99.731	PK	29.1	10.0	8.0	31.5	15.6	3.0	-79.6	-81.8	-40.0	41.8	
Hori.	219.826	PK	30.1	11.2	9.0	31.3	19.0	3.0	-76.3	-78.4	-40.0	38.4	
Hori.	356.391	PK	29.7	15.2	9.9	31.3	23.5	3.0	-71.8	-73.9	-40.0	33.9	
Hori.	7250.000	PK	37.7	36.5	8.7	32.4	50.4	3.0	-44.8	-47.0	-40.0	7.0	Floor noise
Hori.	10875.000	PK	40.1	40.1	-2.6	33.1	44.5	3.0	-50.8	-52.9	-40.0	12.9	Floor noise
Hori.	14500.000	PK	39.7	40.8	-2.1	32.4	46.0	3.0	-49.3	-51.4	-40.0	11.4	Floor noise
Vert.	42.347	PK	32.1	13.9	7.3	31.5	21.8	3.0	-73.4	-75.6	-40.0	35.6	
Vert.	51.728	PK	32.7	10.5	7.4	31.5	19.1	3.0	-76.1	-78.3	-40.0	38.3	
Vert.	80.593	PK	35.9	6.9	7.8	31.5	19.1	3.0	-76.1	-78.3	-40.0	38.3	
Vert.	99.731	PK	35.6	10.0	8.0	31.5	22.1	3.0	-73.1	-75.3	-40.0	35.3	
Vert.	219.826	PK	39.8	11.2	9.0	31.3	28.7	3.0	-66.6	-68.7	-40.0	28.7	
Vert.	356.391	PK	29.2	15.2	9.9	31.3	23.0	3.0	-72.3	-74.4	-40.0	34.4	
Vert.	7250.000	PK	37.7	36.5	8.7	32.4	50.4	3.0	-44.8	-47.0	-40.0	7.0	Floor noise
Vert.	10875.000	PK	40.1	40.1	-2.6	33.1	44.5	3.0	-50.8	-52.9	-40.0	12.9	Floor noise
Vert.	14500.000	PK	39.7	40.8	-2.1	32.4	46.0	3.0	-49.3	-51.4	-40.0	11.4	Floor noise

Result (E) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

EIRP = E + 20\*log(D) -104.8

ERP =EIRP -2.15

\*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (3.85 m / 3.0 m) = 2.17 dB  
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

## Spurious Emission (Radiated)

Report No. 13489136H  
Test place Ise EMC Lab.  
Semi Anechoic Chamber No.4  
Date March 18, 2021  
Temperature / Humidity 21 deg. C / 37 % RH  
Engineer Akihiko Maeda  
Mode LTE Band 48 20 MHz QPSK  
56640ch 3690 MHz 1RB Start49

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Distance [m]	EIRP [dBm]	ERP [dBm]	Limit [dBm]	Margin [dB]	Remark
Hori.	42.267	PK	28.4	14.0	7.3	31.5	18.2	3.0	-77.1	-79.2	-40.0	39.2	
Hori.	52.687	PK	28.8	10.1	7.5	31.5	14.9	3.0	-80.4	-82.6	-40.0	42.6	
Hori.	85.448	PK	28.5	7.6	7.8	31.5	12.5	3.0	-82.8	-84.9	-40.0	44.9	
Hori.	99.425	PK	28.2	10.0	8.0	31.5	14.7	3.0	-80.6	-82.7	-40.0	42.7	
Hori.	220.328	PK	29.2	11.2	9.0	31.3	18.1	3.0	-77.1	-79.3	-40.0	39.3	
Hori.	348.158	PK	29.0	15.1	9.9	31.3	22.7	3.0	-72.6	-74.8	-40.0	34.8	
Hori.	7380.000	PK	37.8	36.7	8.6	32.5	50.7	3.0	-44.6	-46.7	-40.0	6.7	Floor noise
Hori.	11070.000	PK	38.8	39.8	-2.5	33.2	42.9	3.0	-52.3	-54.5	-40.0	14.5	Floor noise
Hori.	14760.000	PK	39.1	39.6	-2.0	32.4	44.2	3.0	-51.0	-53.2	-40.0	13.2	Floor noise
Vert.	42.267	PK	31.9	14.0	7.3	31.5	21.7	3.0	-73.6	-75.7	-40.0	35.7	
Vert.	52.687	PK	33.7	10.1	7.5	31.5	19.8	3.0	-75.5	-77.7	-40.0	37.7	
Vert.	85.448	PK	37.0	7.6	7.8	31.5	21.0	3.0	-74.3	-76.4	-40.0	36.4	
Vert.	99.425	PK	35.4	10.0	8.0	31.5	21.9	3.0	-73.4	-75.5	-40.0	35.5	
Vert.	220.328	PK	38.9	11.2	9.0	31.3	27.8	3.0	-67.4	-69.6	-40.0	29.6	
Vert.	348.158	PK	29.0	15.1	9.9	31.3	22.7	3.0	-72.6	-74.8	-40.0	34.8	
Vert.	7380.000	PK	37.8	36.7	8.6	32.5	50.7	3.0	-44.6	-46.7	-40.0	6.7	Floor noise
Vert.	11070.000	PK	38.8	39.8	-2.5	33.2	42.9	3.0	-52.3	-54.5	-40.0	14.5	Floor noise
Vert.	14760.000	PK	39.1	39.6	-2.0	32.4	44.2	3.0	-51.0	-53.2	-40.0	13.2	Floor noise

Result (E) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

EIRP = E + 20\*log(D) -104.8

ERP =EIRP -2.15

\*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (3.85 m / 3.0 m) = 2.17 dB  
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

**Frequency Stability (Temperature/Voltage Variation)**

Report No. 13489136H  
Test place Ise EMC Lab.  
Measurement Room No.6  
Date March 22, 2021  
Temperature / Humidity 24 deg. C / 39 % RH  
Engineer Yutaka Yoshida  
Mode LTE Band 48

Tested Frequency: 3625 [MHz]

Temp [deg. C]	Volt [V]	Reading Frequency Error		Result [ppm]
		[Hz]	[MHz]	
50	120.0	10.81	0.00001081	+ 0.0030
40	120.0	14.15	0.00001415	+ 0.0039
30	120.0	16.68	0.00001668	+ 0.0046
20	120.0	13.28	0.00001328	+ 0.0037
10	120.0	15.32	0.00001532	+ 0.0042
0	120.0	9.58	0.00000958	+ 0.0026
-10	120.0	-8.00	-0.00000800	- 0.0022
-20	120.0	-5.38	-0.00000538	- 0.0015
* -30	120.0	N/A	N/A	N/A

Temp [deg. C]	Volt [V]	Reading Frequency Error		Result [ppm]	Remark
		[Hz]	[MHz]		
20	*Battery End Point	12.24	0.00001224	+ 0.0034	
20	AC102.0	11.33	0.00001133	+ 0.0031	For reference
20	AC120.0	13.28	0.00001328	+ 0.0037	For reference
20	AC138.0	10.84	0.00001084	+ 0.0030	For reference
20	DC9.69	-13.33	-0.00001333	- 0.0037	For reference
20	DC11.4	-9.77	-0.00000977	- 0.0027	For reference
20	DC13.11	-14.65	-0.00001465	- 0.0040	For reference

\*BatteryEnd Point: DC9.25V(measured)

\*The temperature of the EUT was outside of its operating range, so the EUT did not work normally.

## **APPENDIX 2: Test instruments**

### **Test equipment used on November 18 to December 1, 2020**

<b>Test Name</b>	<b>Local Id</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Serial</b>	<b>Last Cal Date</b>	<b>Interval</b>
AT	MSA-17	Spectrum Analyzer	Keysight Technologies Inc	N9030A	US51350215	2020/09/23	12
AT	MURC-10	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	165750	2020/07/31	12
AT	MPD-03	Power Divider DC-12.4GHz	Suhner	4901.19.A	-	2020/05/25	12
AT	MCC-144	Microwave Cable	Junkosha	MWX221	1207S407	2020/08/03	12
AT	MOS-33	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2020/07/10	12
AT	MCH-04	Temperature and Humidity Chamber	Espec	PL-2KP	14015723	2020/08/24	12
AT	MMM-11	Digital HiTESTER	Hioki	3805	60100600	2020/05/07	12
AT	PRE0194561	LTE Access Point , Q710	Ruckus	P01-Q710-US02	931929000039	Pre-check	-

\*Hyphens for Last Calibration Date and Cal Int (month) are instruments that Calibration is not required (e.g. software), or instruments checked in advance before use.

The expiration date of the calibration is the end of the expired month.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

The expiration\*1) This test equipment was used for the tests before the expiration date of the calibration.

All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

Test item: RE: Radiated Emission test

AT: Antenna Terminal Conducted test

**Test equipment used on March 28 to 22, 2021**

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	MAEC-04	142011	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	05/25/2020	24
RE	MOS-15	141562	Thermo-Hygrometer	CUSTOM	CTH-180	1501	01/15/2021	12
RE	MMM-10	141545	DIGITAL HiTESTER	HIOKI	3805	51201148	01/07/2021	12
RE	MJM-26	142227	Measure	KOMELON	KMC-36	-	-	-
RE	COTS-MEMI-02	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
RE	MAEC-04-SVSWR	142017	Semi Anechoic Chamber(SVSWR)	TDK	Semi Anechoic Chamber 3m	DA-10005	04/04/2019	24
RE	MAT-34	141331	Attenuator(6dB)	TME	UFA-01	-	02/02/2021	12
RE	MBA-05	141425	Biconical Antenna	Schwarzbeck	BBA9106	1302	08/31/2020	12
RE	MCC-50	141397	Coaxial Cable	UL Japan	-	-	11/06/2020	12
RE	MLA-23	141267	Logperiodic Antenna(200-1000MHz)	Schwarzbeck	VUSLP9111B	911B-192	09/02/2020	12
RE	MPA-14	141583	Pre Amplifier	SONOMA INSTRUMENT	11/5/1900	260833	02/03/2021	12
RE	MHA-21	141508	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	9120D-557	05/22/2020	12
RE	MPA-12	141581	MicroWave System Amplifier	AGILENT	83017A	650	10/19/2020	12
RE	MCC-246	199563	Microwave Cable	HUBER+SUNER	SF126E/11PC35/11PC35/1000M,5000M	537061/126E / 537072/126E	06/11/2020	12
RE	MHA-17	141506	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170307	07/16/2020	12
RE	MHA-29	141517	Horn Antenna 26.5-40GHz	ETS LINDGREN	22190	152399	08/03/2020	12
RE	MPA-22	141588	Pre Amplifier	MITEQ, Inc	AMF-6F-2600400-33-8P / AMF-4F-2600400-33-8P	1871355 /1871328	09/07/2020	12
RE	MCC-224	160324	Coaxial Cable	Huber+Suhner	SUCOFLEX 102A	MY009/2A	11/17/2020	12
RE	MCC-219	159670	Coaxial Cable	UL Japan Inc.	-	-	11/17/2020	12
RE	MLPA-02	142152	Loop Antenna	Rohde & Schwarz	HFH2-Z2	836553/009	12/04/2020	12
RE	MCC-113	141217	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W/SFM141/421-010/sucoform141-PE/RFM-E121(SW)	-/04178	06/18/2020	12
RE	MHF-23	141294	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCC	603	02/18/2021	12
RE	MAT-22	141269	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	03./24/2020	12

\*Hyphens for Last Calibration Date and Cal Int (month) are instruments that Calibration is not required (e.g. software), or instruments checked in advance before use.

The expiration date of the calibration is the end of the expired month.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

Test item:

**RE: Radiated Emission test**

**UL Japan, Inc.**

**Ise EMC Lab.**

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124