

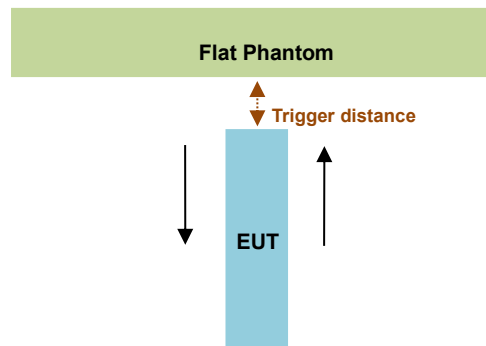
Appendix D. Proximity Sensor Verification

<Proximity Sensor Triggering Distance (KDB 616217 D04 section 6.2)>:

For the device is fully integrated, touch sensing capacitive sensor. It uses a charge transfer capacitive acquisition method that is capable of near range proximity detection. In this device offers a state-of-the-art capacitive sensing engine with an embedded sampling capacitor and voltage regulator allowing the overall solution cost to be reduced and improving system immunity in noisy environments.

Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed. The details are illustrated as following, and the shortest triggering distances were reported and used for SAR assessment.

In the preliminary triggering distance testing, the tissue-equivalent medium for different frequency bands were used for verification; no other frequency bands tissue-equivalent medium was found to result in shortest triggering distance than that for 1900MHz, and the tissue-equivalent medium for 1900MHz was used for formal proximity sensor triggering testing.



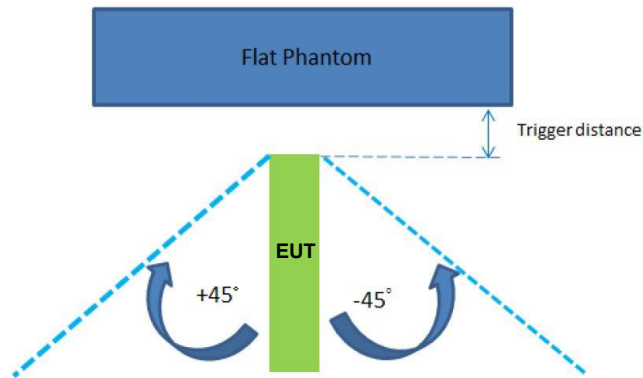
Distance Verification Results (mm)												
Position	Front		Back		Left		Right		Top		Bottom	
Minimum (mm)	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
	36	36	38	37	30	32	48	47	28	27	24	21

<Proximity Sensor Triggering Coverage (KDB 616217 D04 section 6.3)>:

Since the antenna and sensor are collocated and all of the peak SAR location is overlapping with the sensor pad for this device, therefore, According to KDB 616217 section 6.3, these procedures do not apply and are not required for this device. due to the antenna and sensor are collocated and the peak SAR location is overlapping with the sensor on this device.

<Tablet Tilt angle influences to proximity sensor triggering (KDB 616217 D04 section 6.4)>:

The influence of table tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom, at above separation distance. Rotating the tablet around the edge next to the phantom in $\leq 10^\circ$ increments until the tablet is $\pm 45^\circ$ from the vertical position at 0° , and the maximum output power remains in the reduced mode.



Distance Verification Results (mm)								
Position	Left		Right		Top		Bottom	
Minimum (mm)	+45	-45	+45	-45	+45	-45	+45	-45
	21	25	22	27	24	27	21	21

<Power verification>

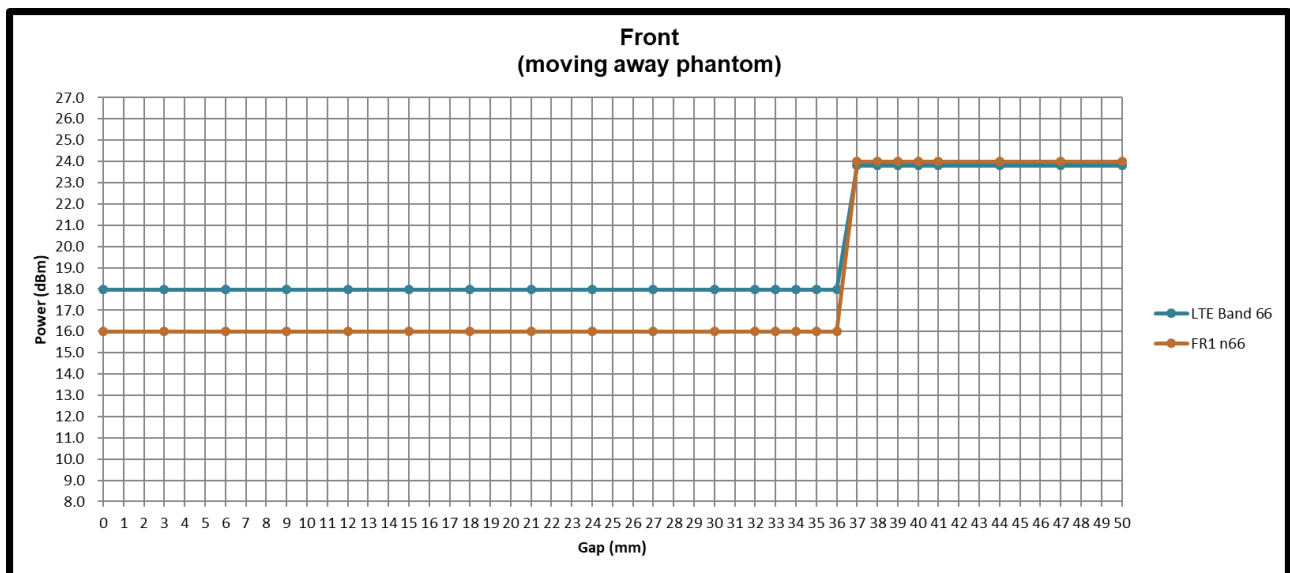
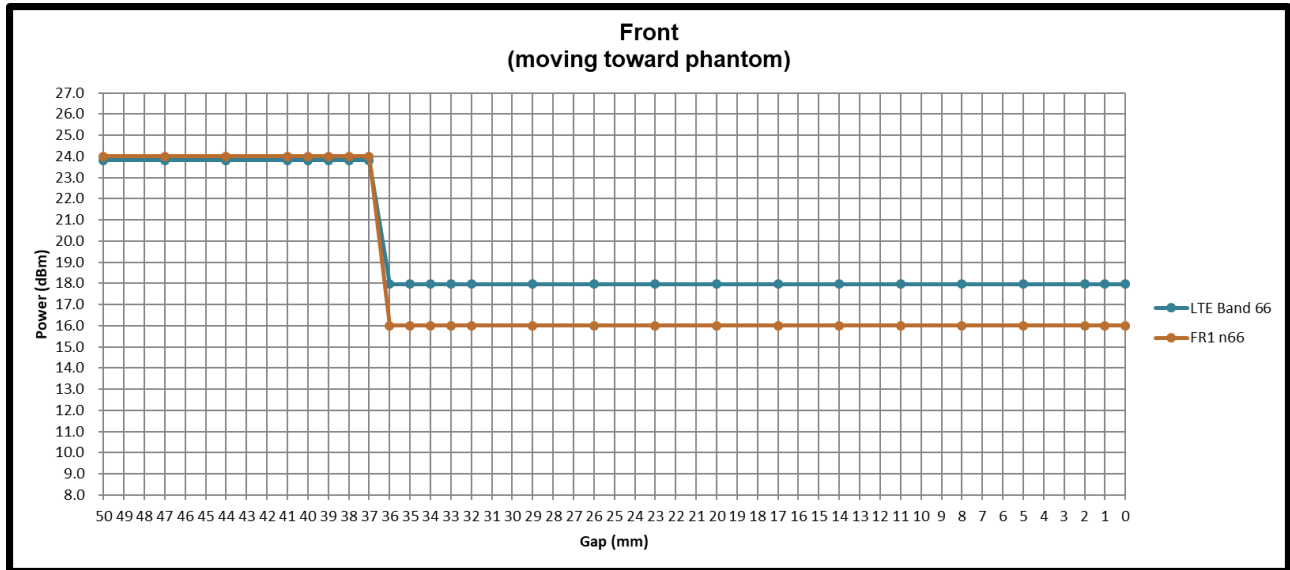
Power Verification Results (dBm)		
Band / Antenna	Sensor non-Trigger	Sensor Trigger
LTE B2 Ant 0	24.0	20.0
LTE B2 Ant 3	25.0	20.5
LTE B5 Ant 0	25.0	25.0
LTE B7 Ant 0	23.0	20.0
LTE B12/17 Ant 0	25.0	24.0
LTE B13 Ant 0	25.0	21.5
LTE B4/66 Ant 0	24.0	18.5
LTE B4/66 Ant 3	24.0	21.5
LTE B48 Ant 5	22.5	19.5
FR1 n2 Ant 0	24.0	17.5
FR1 n2 Ant 3	24.0	20.5
FR1 n5 Ant 0	24.5	24.5
FR1 n66 Ant 0	24.0	17.0
FR1 n48 Ant 5	22.5	17.5
FR1 n48 Ant 7	19.5	19.5
FR1 n77/78 Ant 5	23.5	17.0
FR1 n77/78 Ant 7	22.5	22.5

Remark:

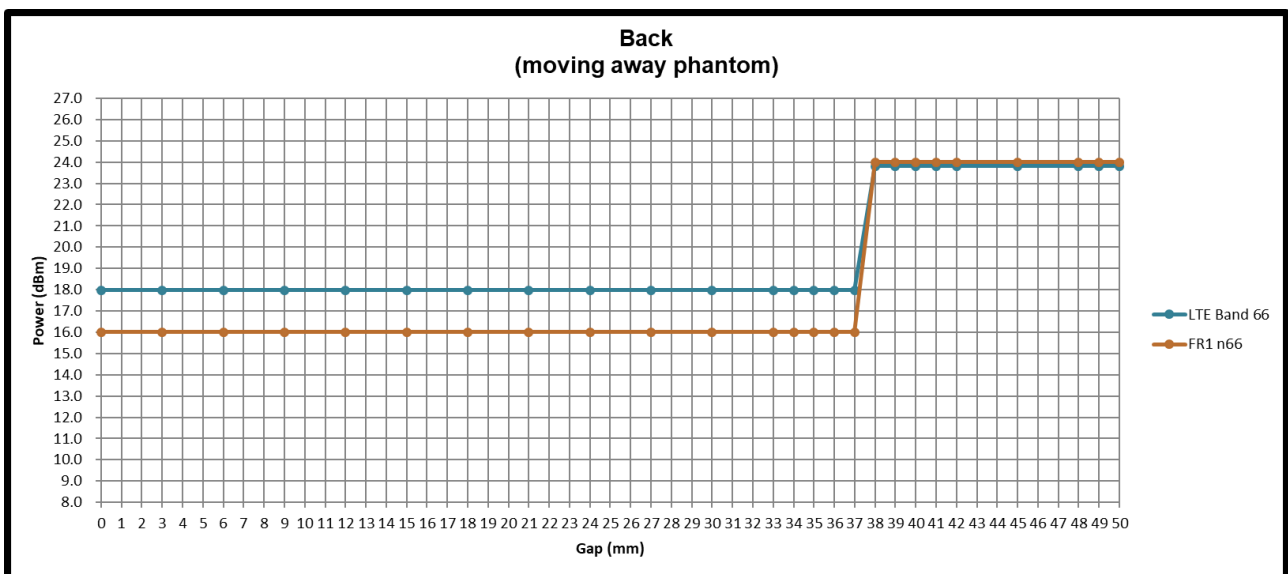
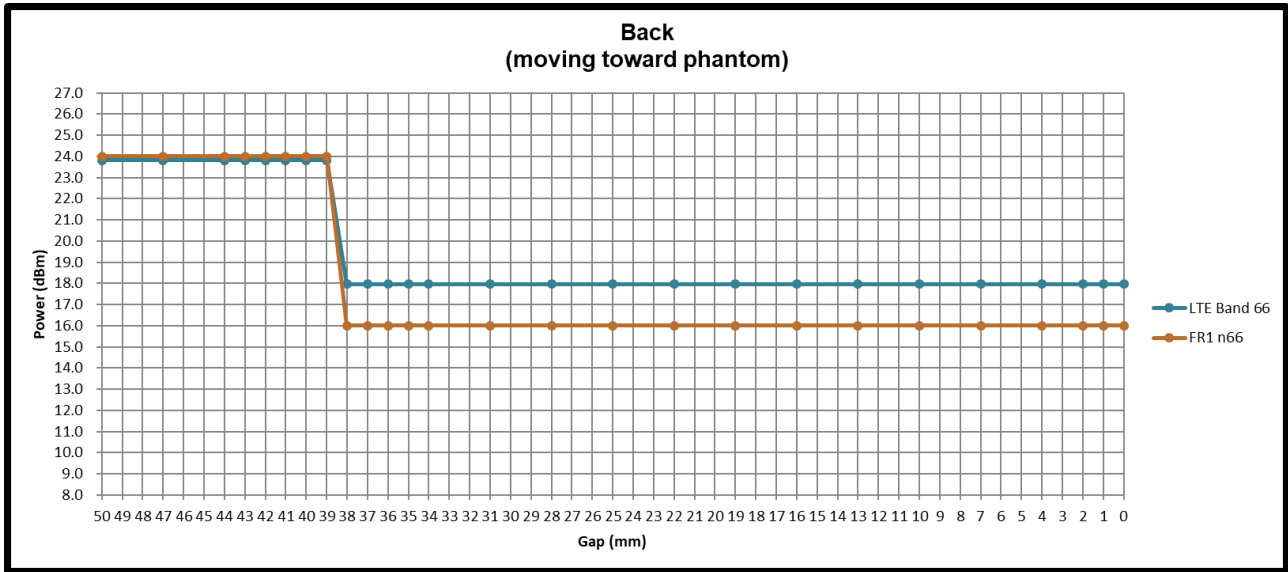
- For LTE/FR1 verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance was performed:
 - Front: [35 mm](#)
 - Back: [25 mm](#)
 - Right: [20 mm](#)
 - Left: since the transmit antenna to left separation distance is > 25mm, SAR is not required
 - Top: [20 mm](#)
 - Bottom: [20 mm](#)
- Since conducted power monitoring during FR2 triggering tests is not feasible, built-in test software is used to confirm the activation status of the sensor triggering condition. The verification figures below show sensor state "0" as the non-trigger condition and sensor state "1" as the trigger condition. In addition, observation results indicate that FR2 transmit power reduction is associated with the activated sensor triggering condition, which supports the expected power control behavior.
- For FR2 verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance was performed:
 - Front: [35 mm](#)
 - Back: [25 mm](#)
 - Right: the transmit antenna to left separation distance is > 25mm, RF Exposure is not required
 - Left: [20 mm](#)
 - Top: the transmit antenna to left separation distance is > 25mm, RF Exposure is not required
 - Bottom: [20 mm](#)

<Ant 0>

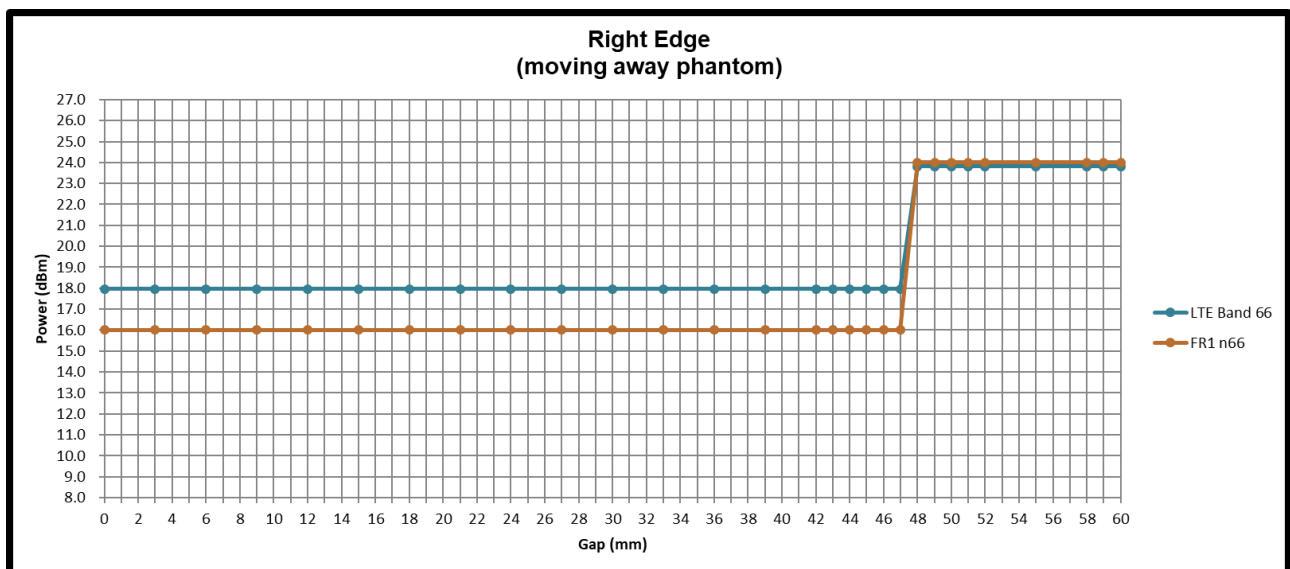
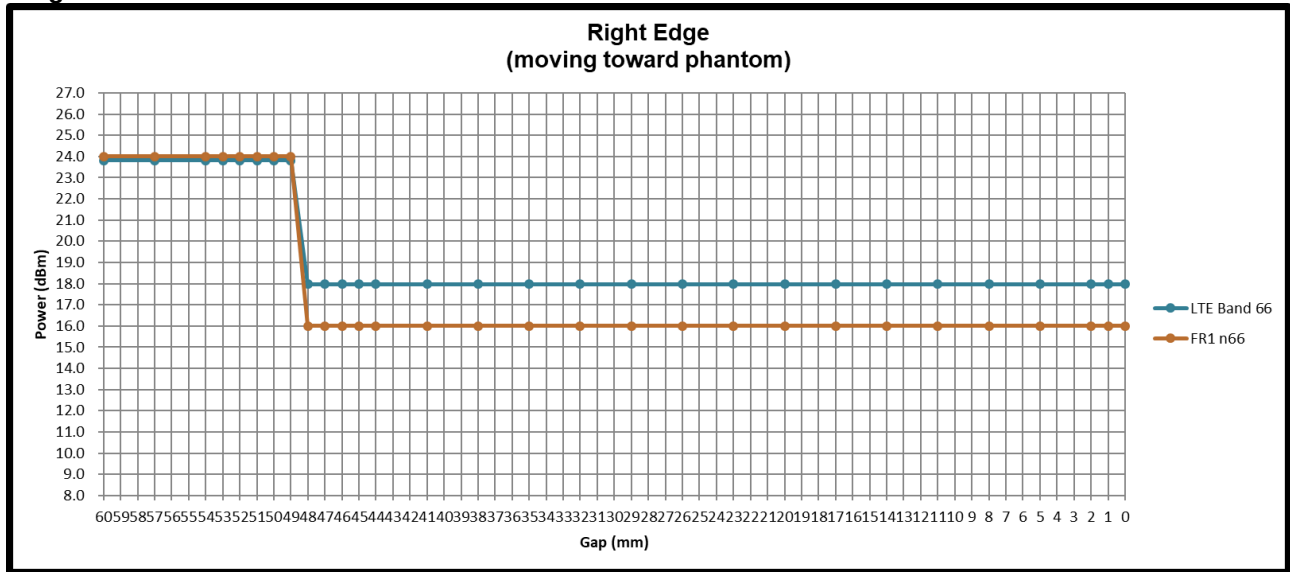
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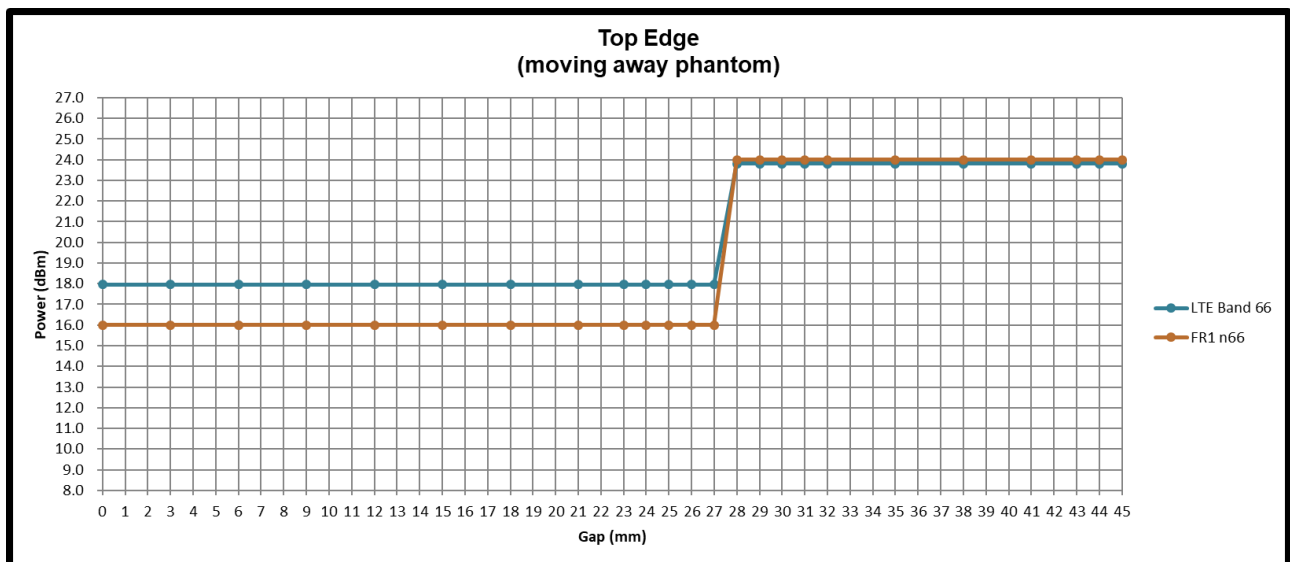
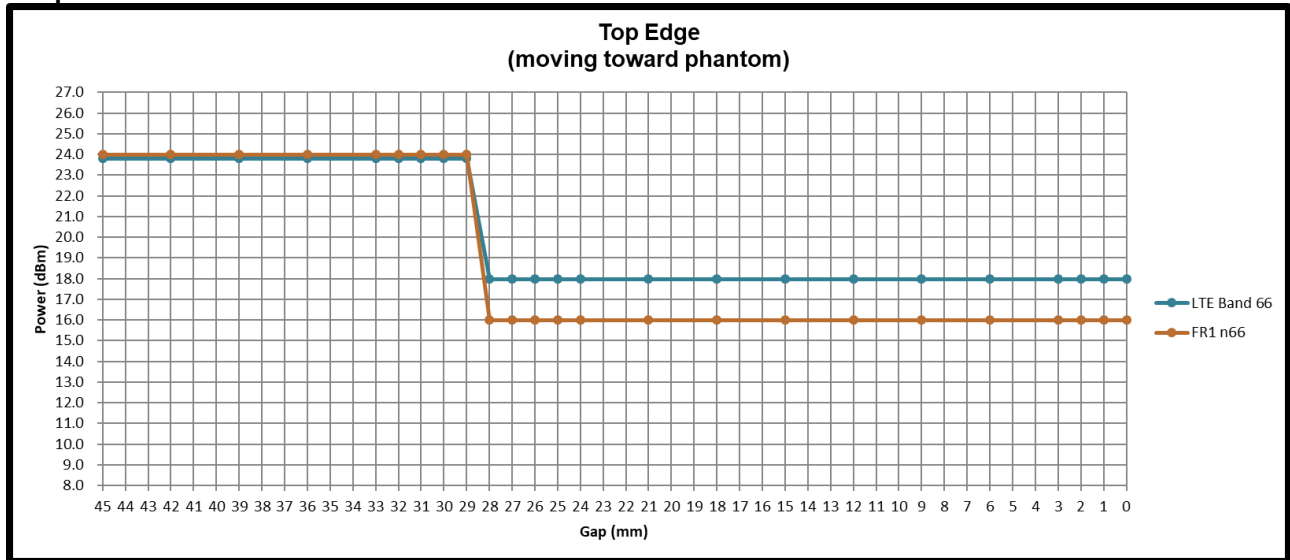
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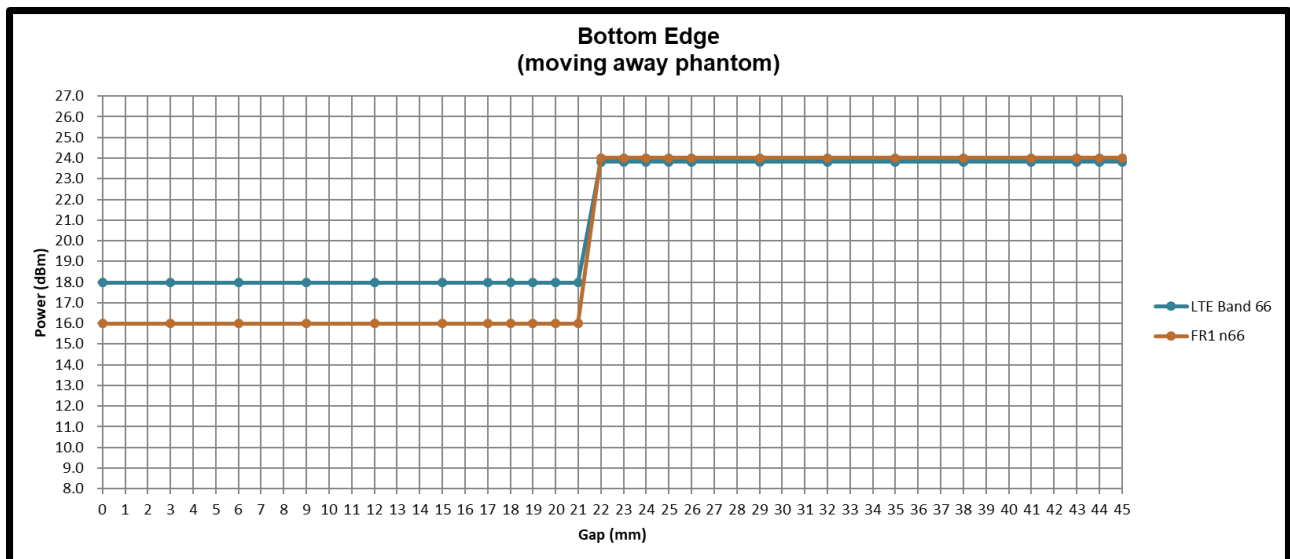
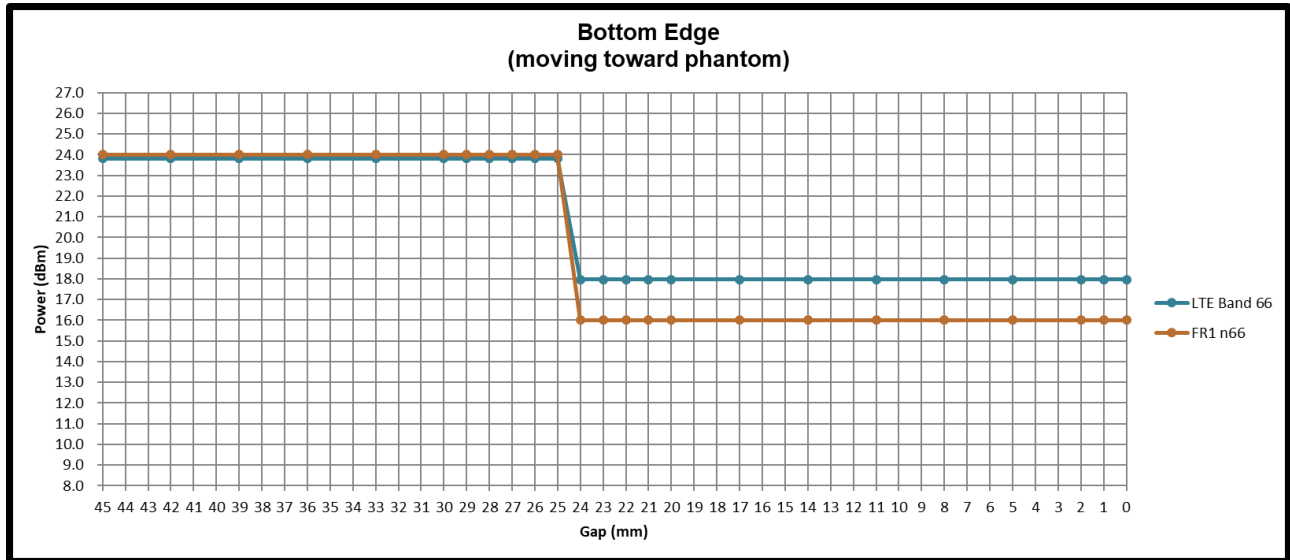
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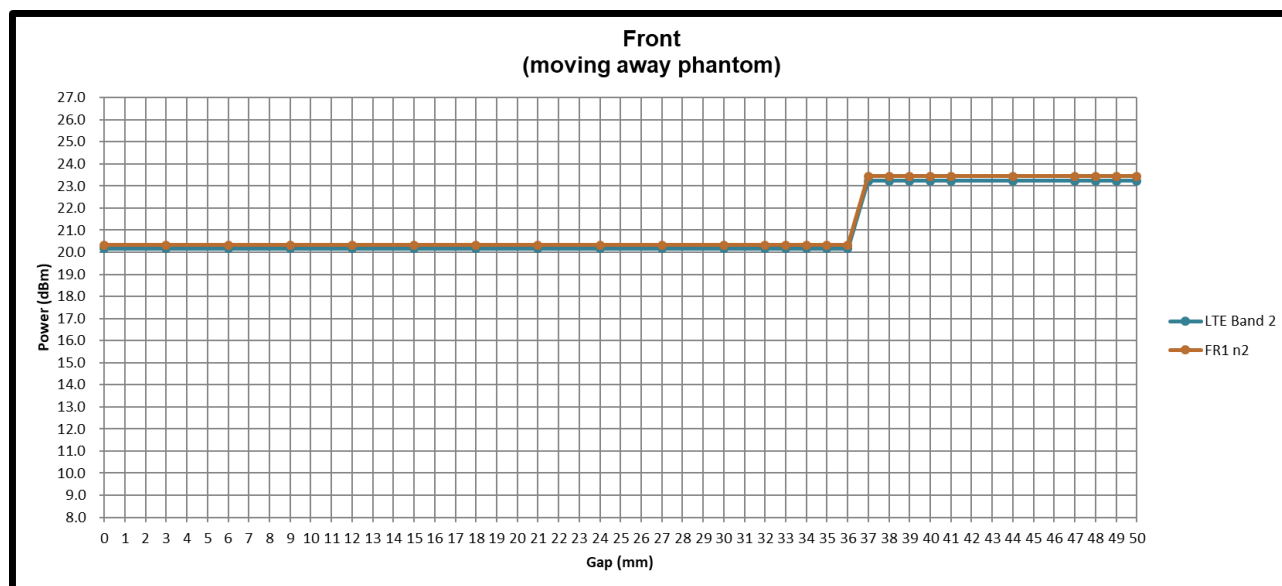
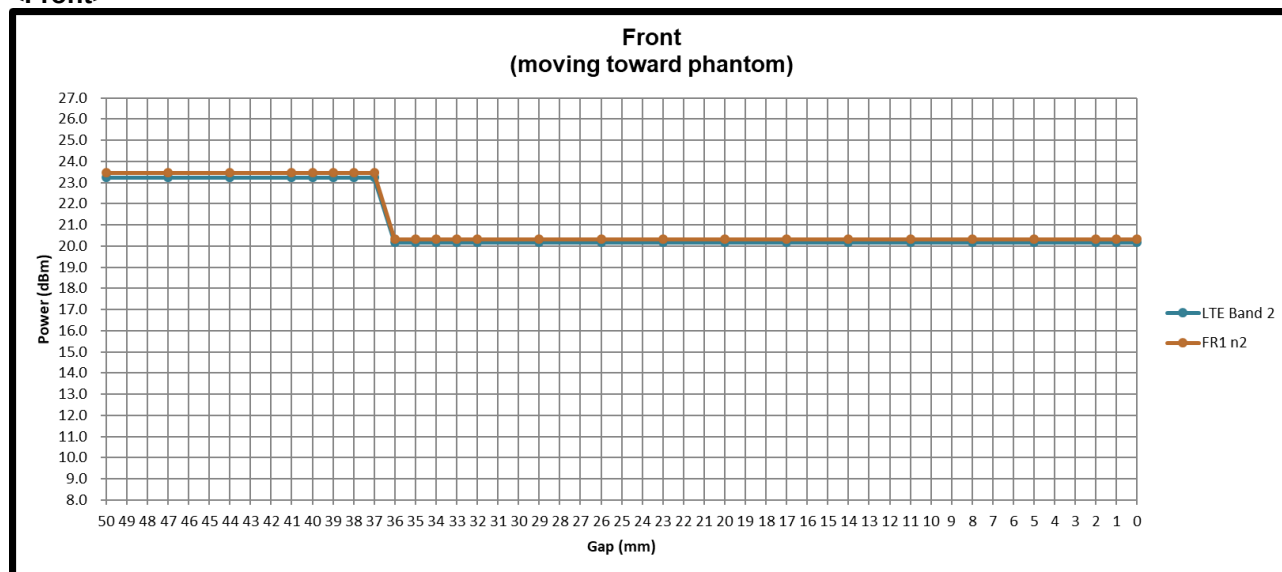


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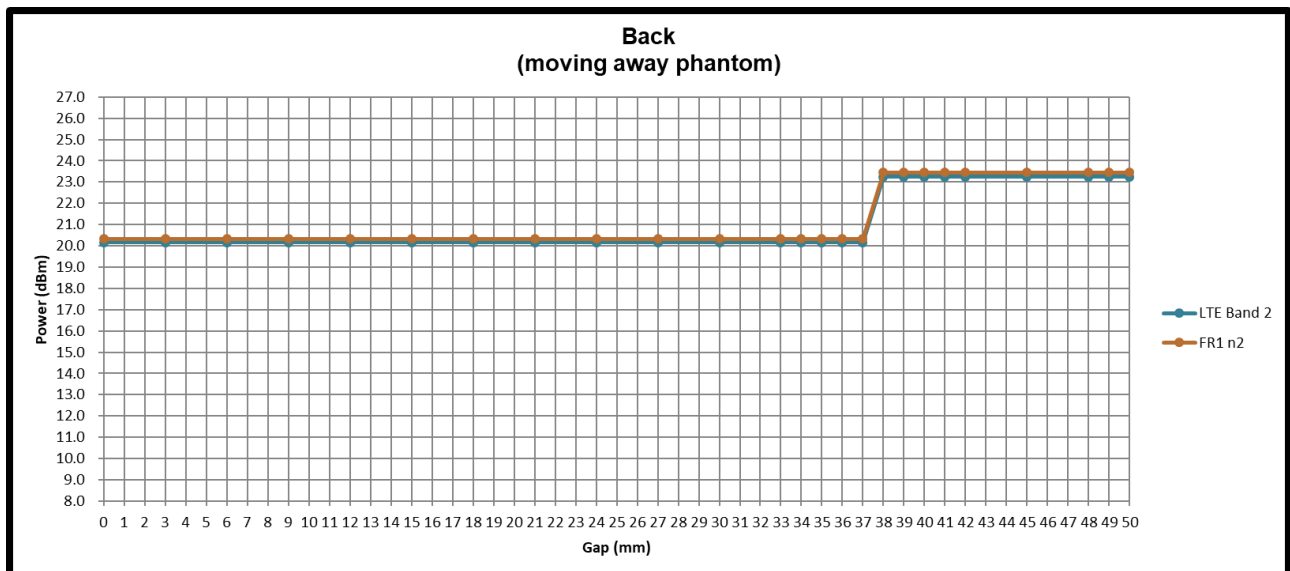
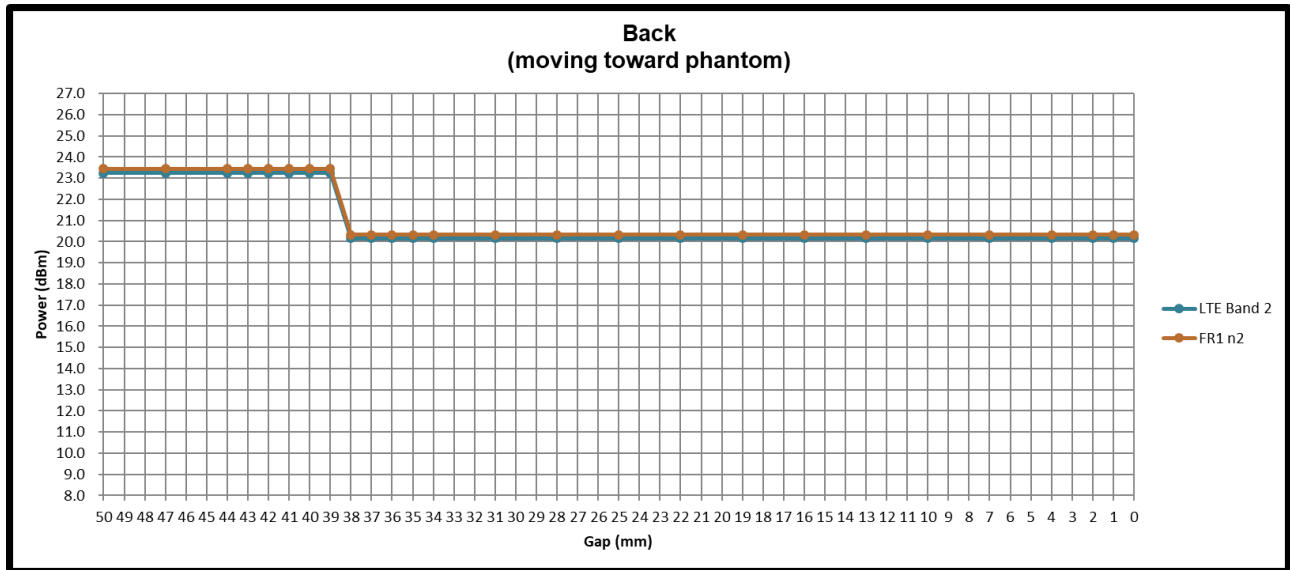


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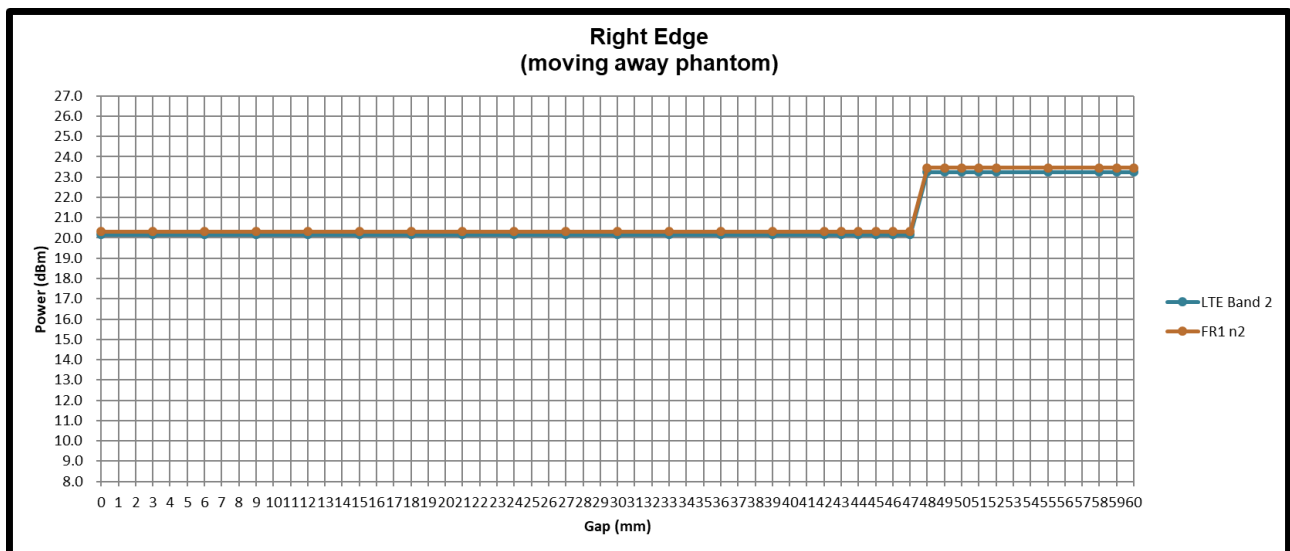
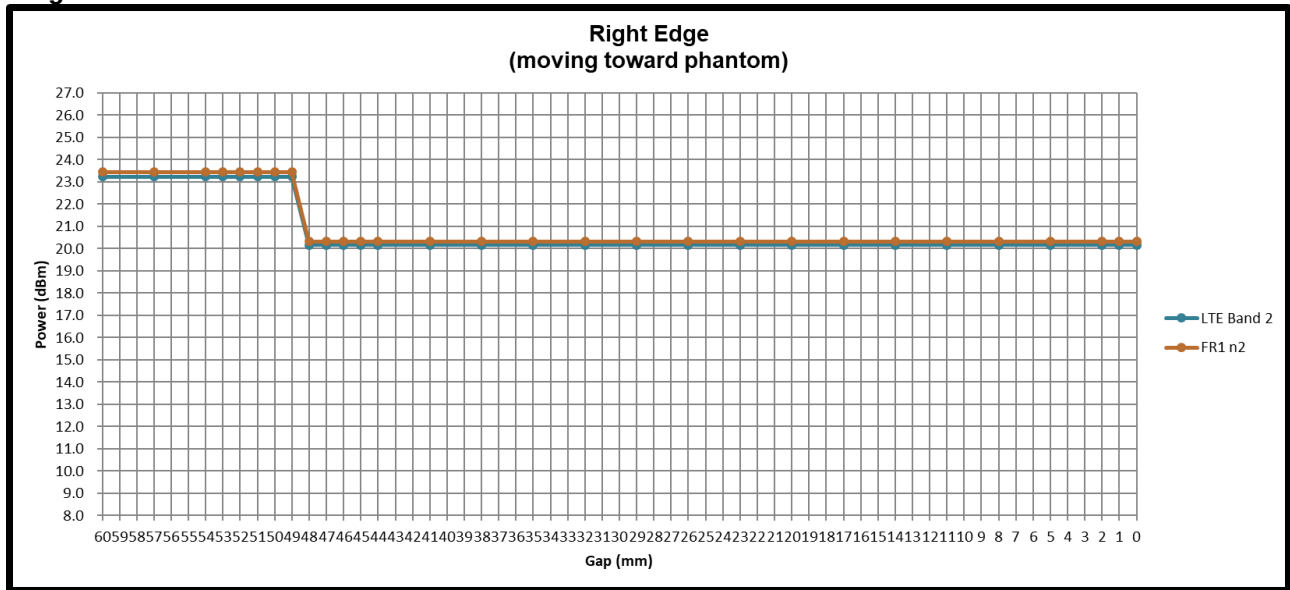
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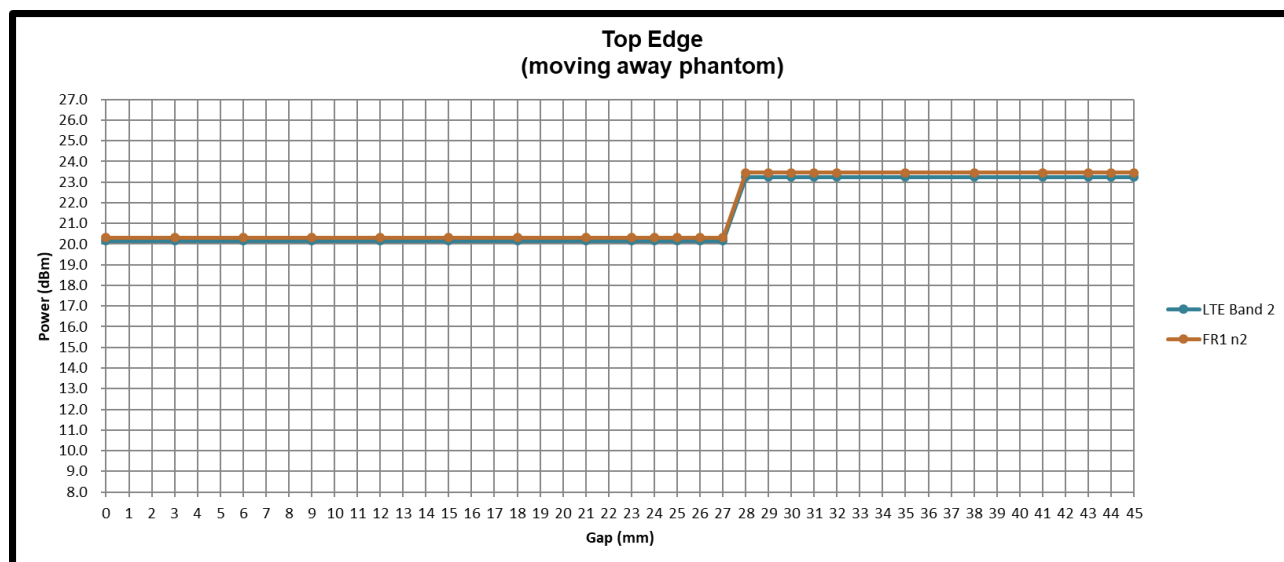
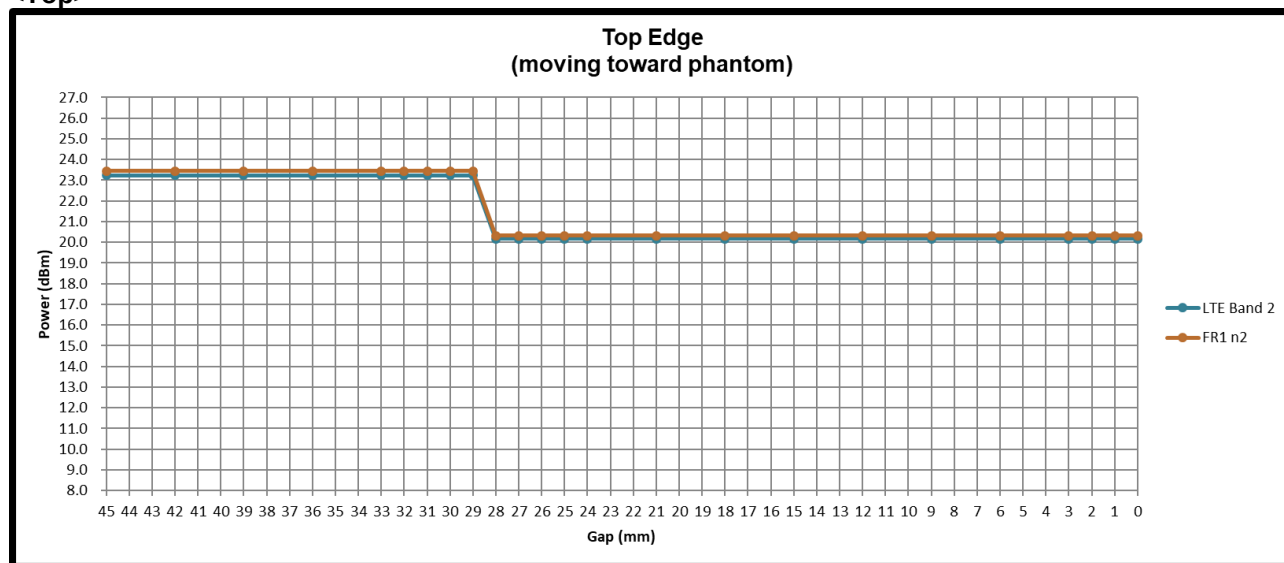
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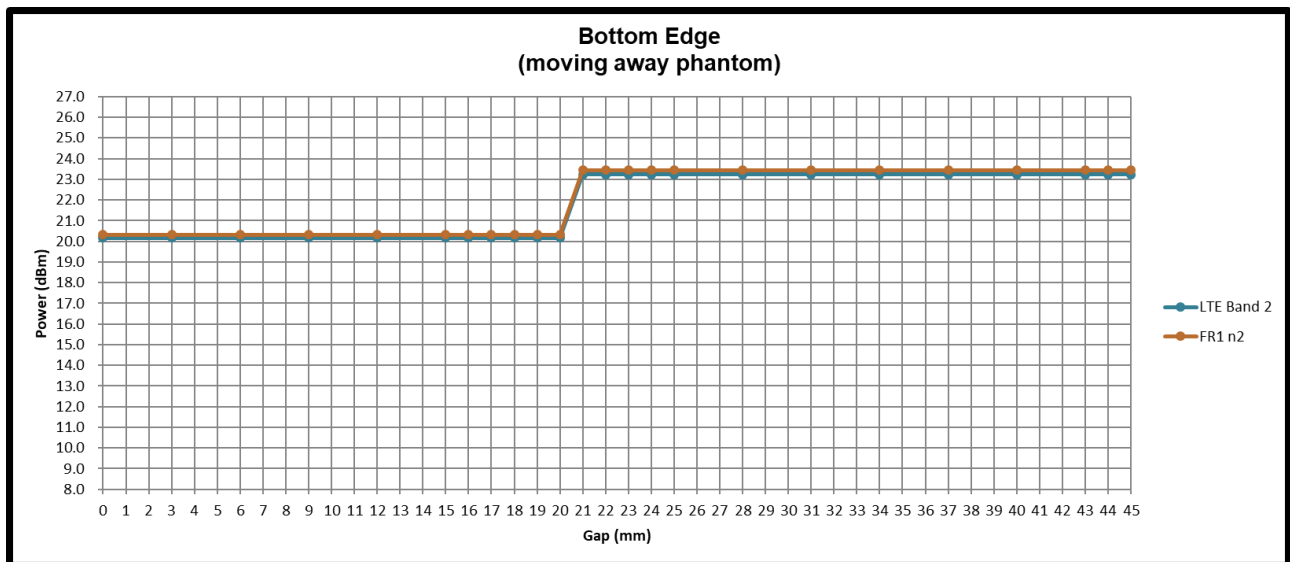
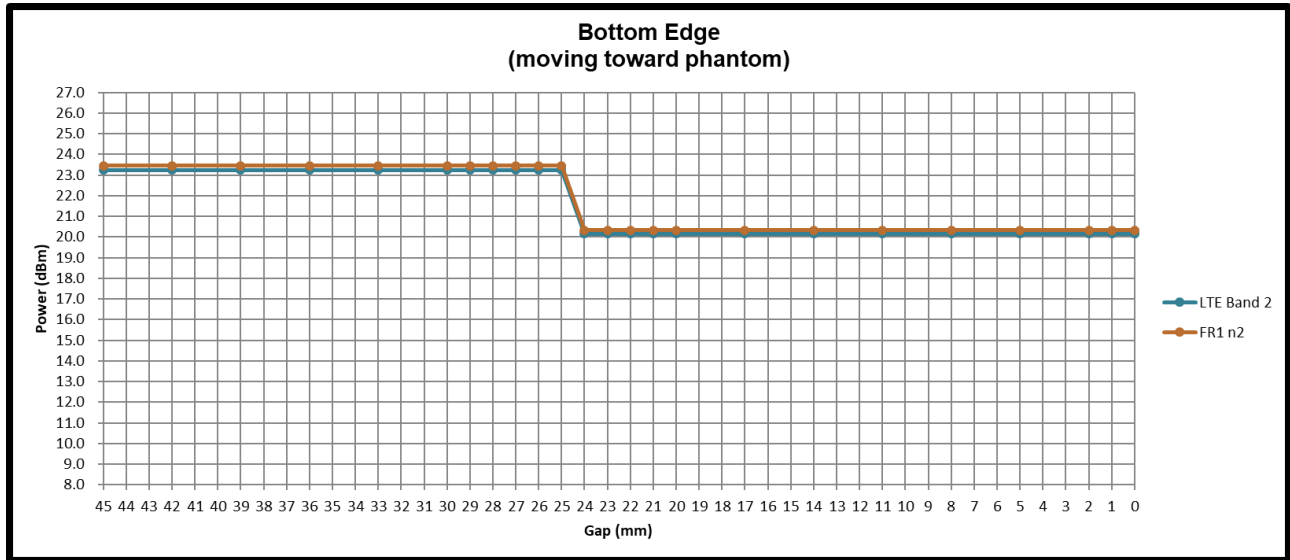
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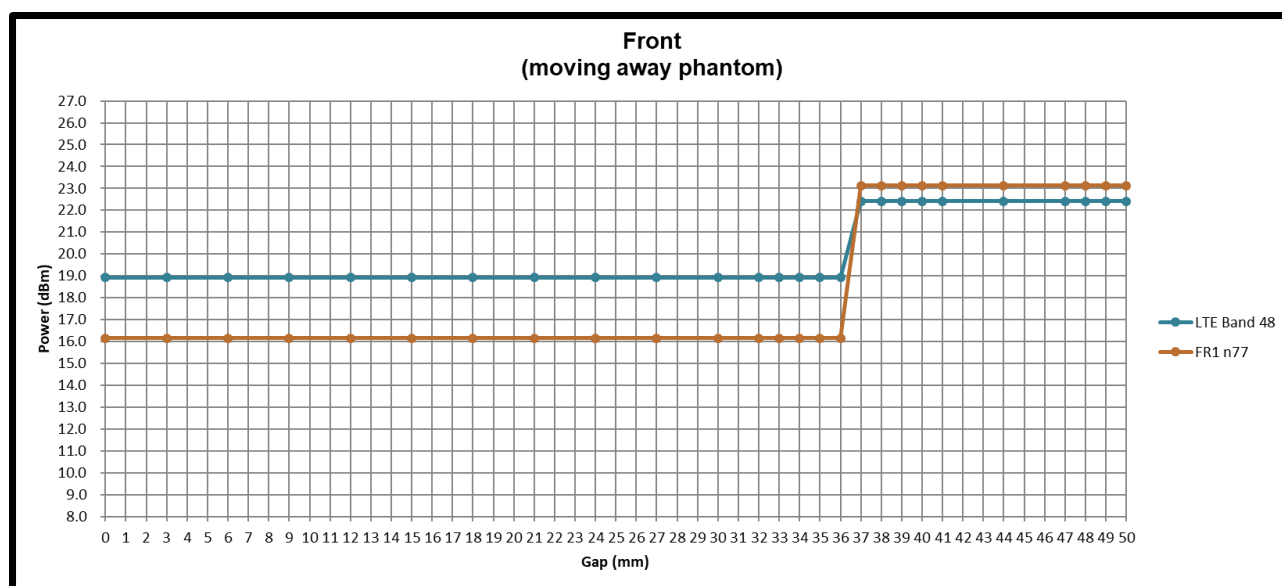
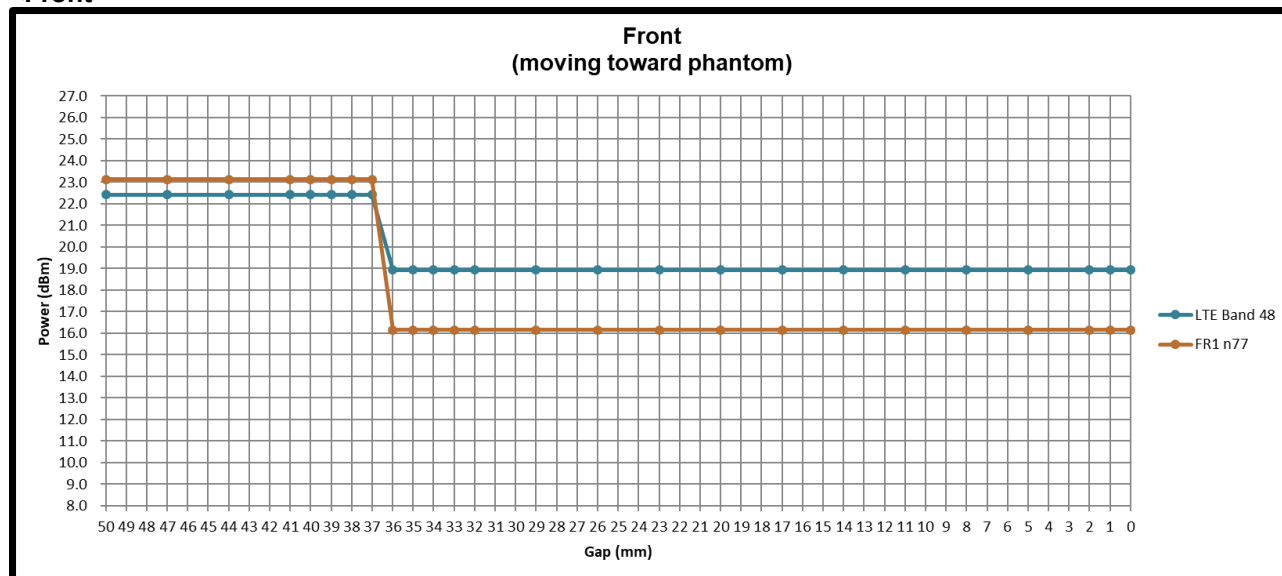


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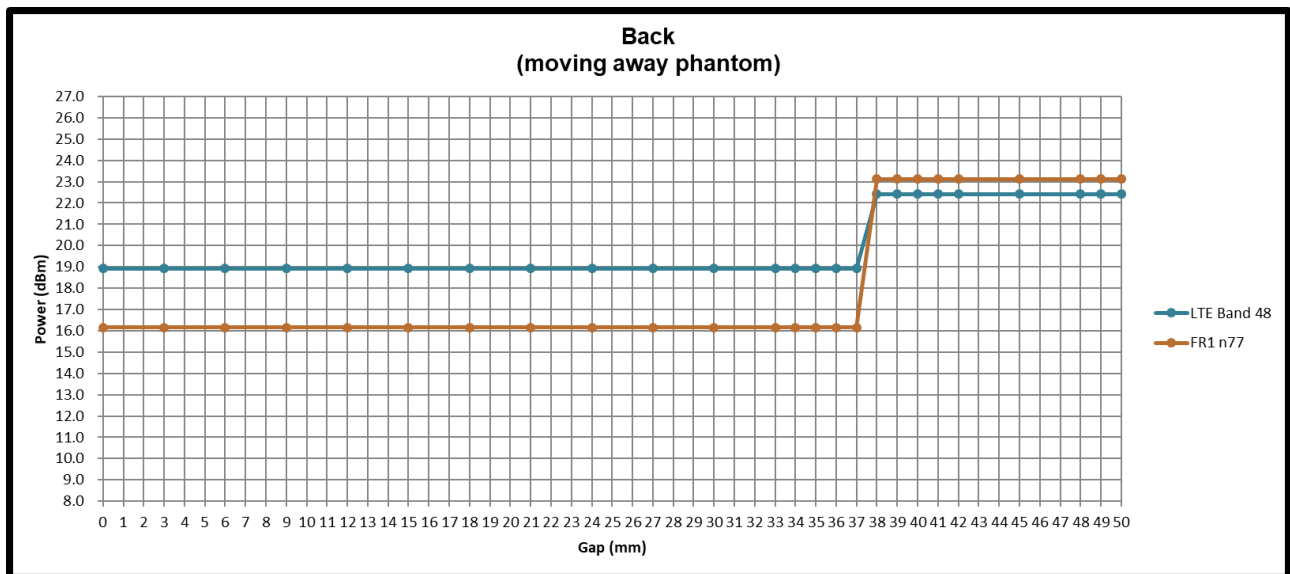
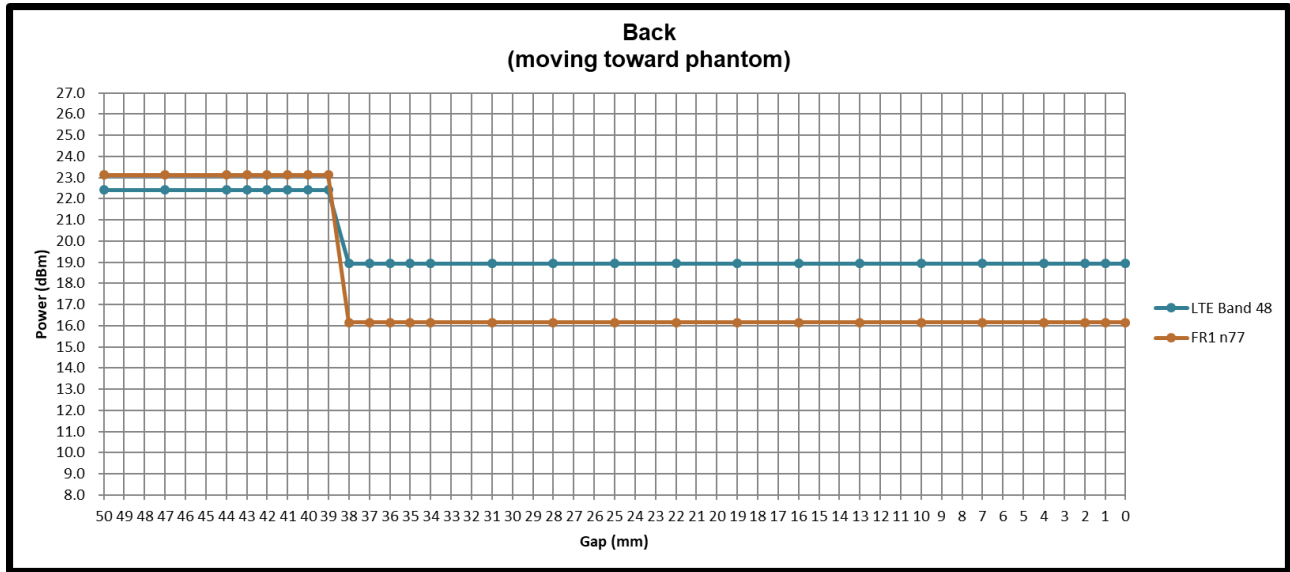


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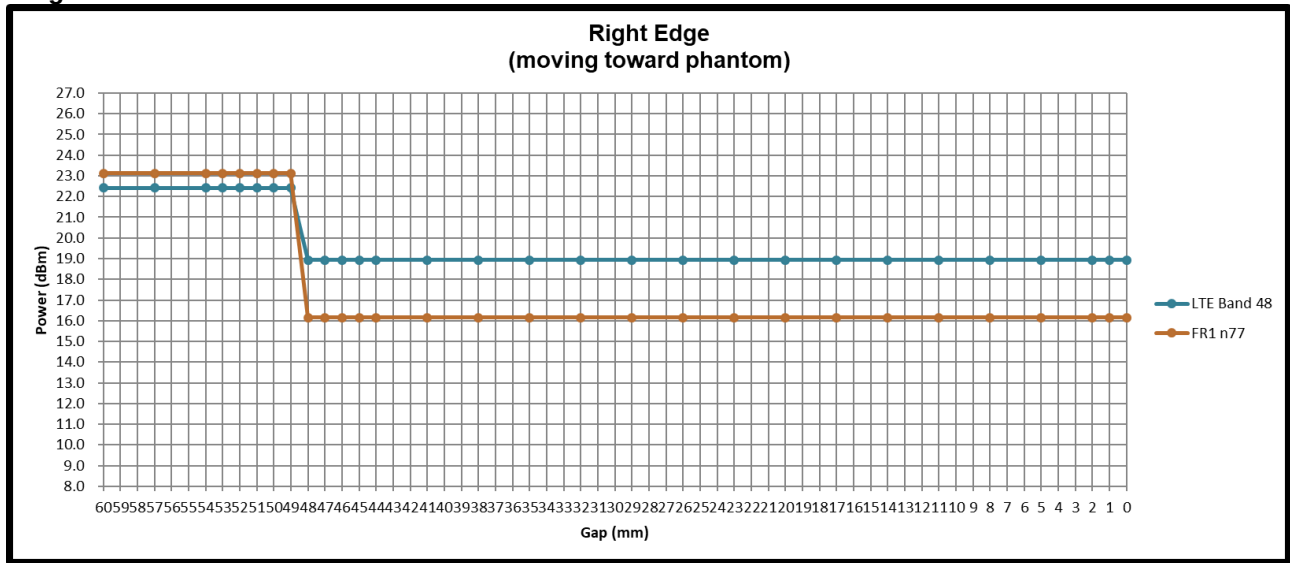
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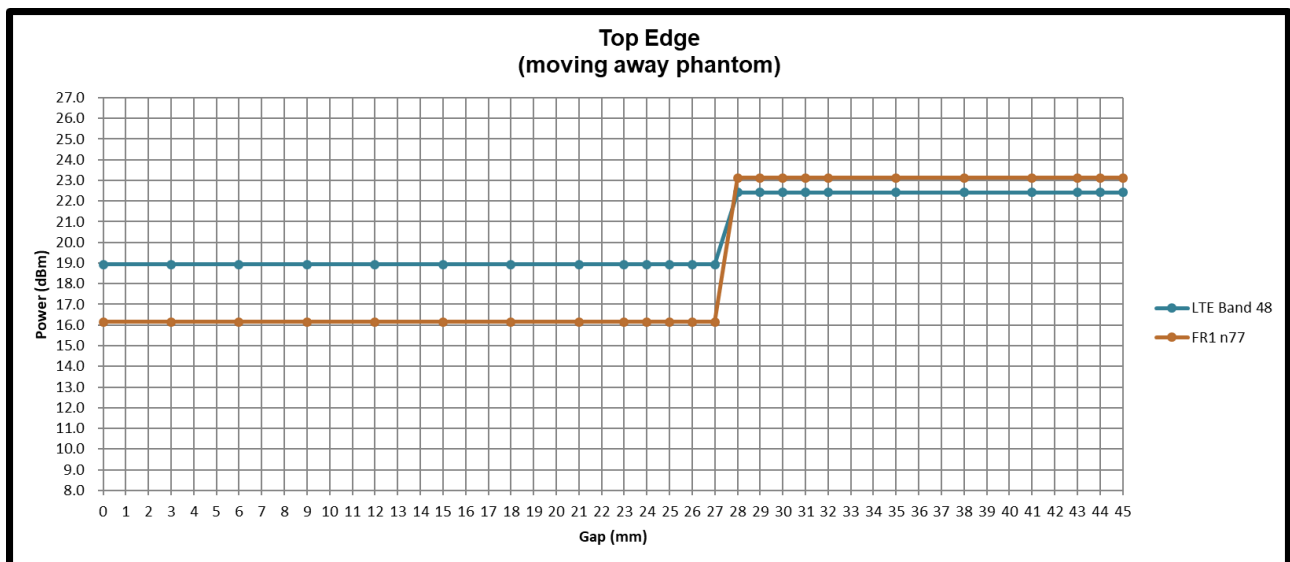
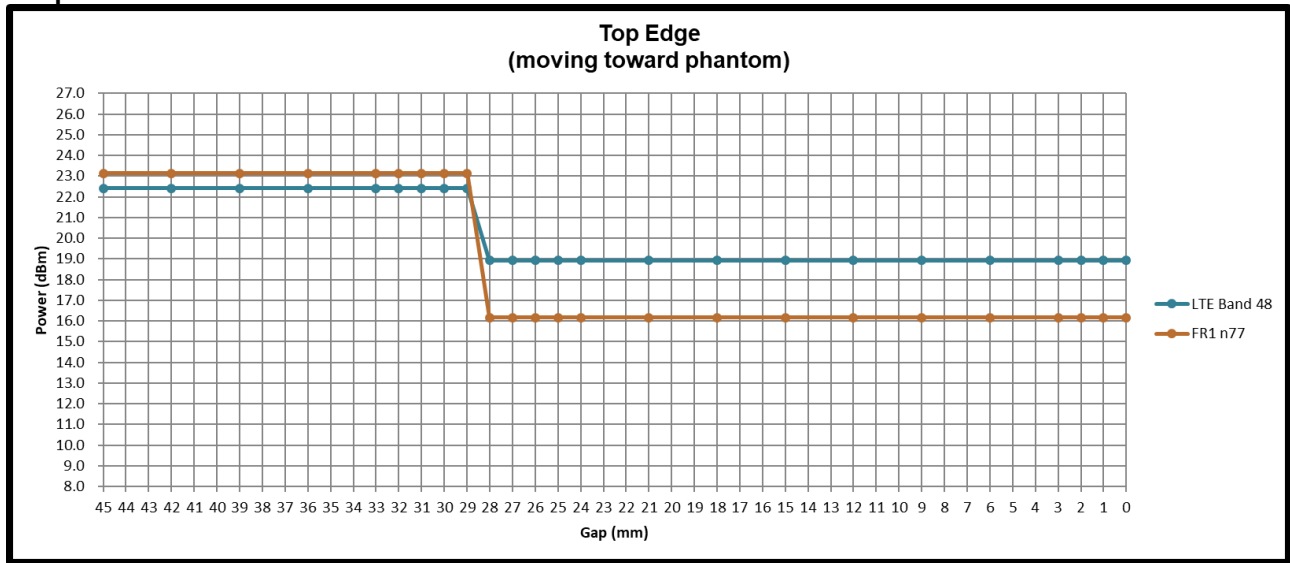
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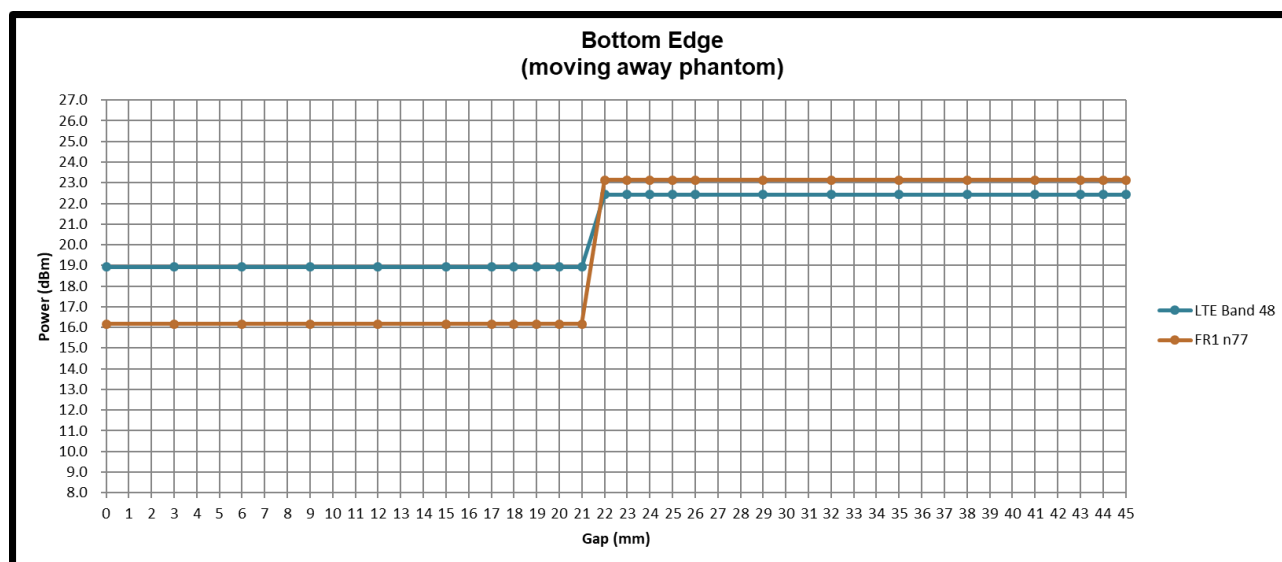
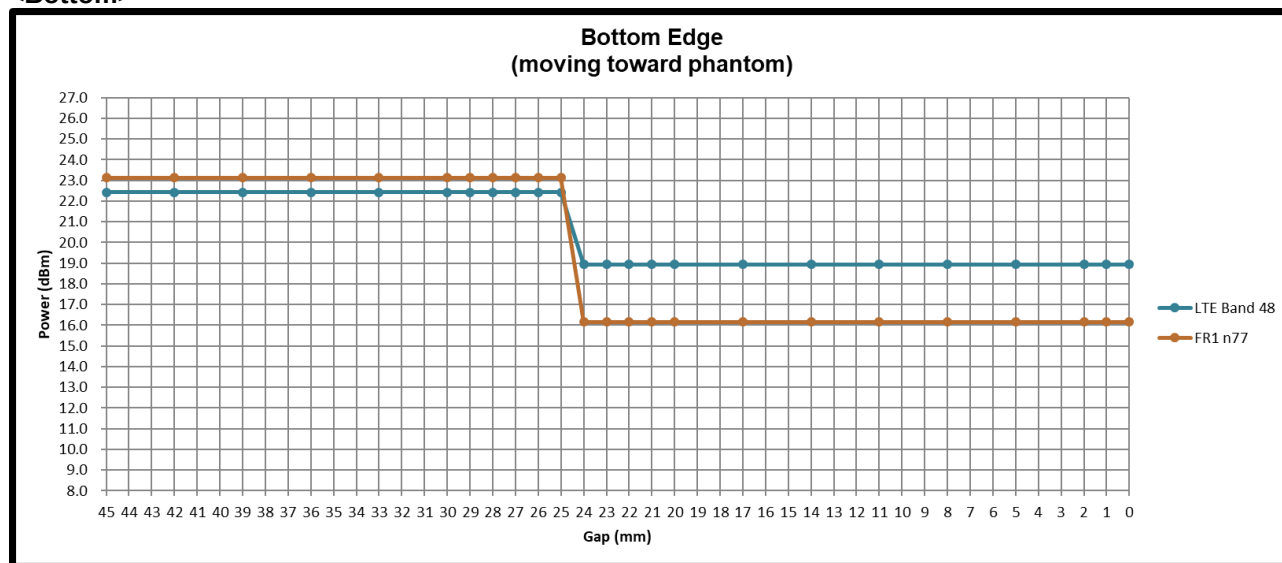
<Right>



<Top>



<Bottom>



<FR2>

