

May 15th, 2013

This document will show the effects of changing the data rate on the Orion SE Gen II Gateway from 25 kbps to 3.125 kbps. The 3.125 kbps mode will be used in conjunction with the existing 25 kbps mode. All testing was done on one ORION SE Gen II Gateway (FCC ID: GIF2012GWSE, original grant date 04/22/2013; IC ID: 1046A-2012GWSE, original grant date 05/07/2013) with two different sets of firmware. In the original firmware, the fixed mode data rate is 25 kbps. The proposed new firmware will operate in two modes: the existing 25 kbps data rate and 3.125 kbps data rate. The ORION SE Gen II Gateway will automatically select between these two modes based on operating conditions. Modulation scheme, channel spacing, channel location, channel hopping algorithm, and transmit power remain the same with the new data rate.



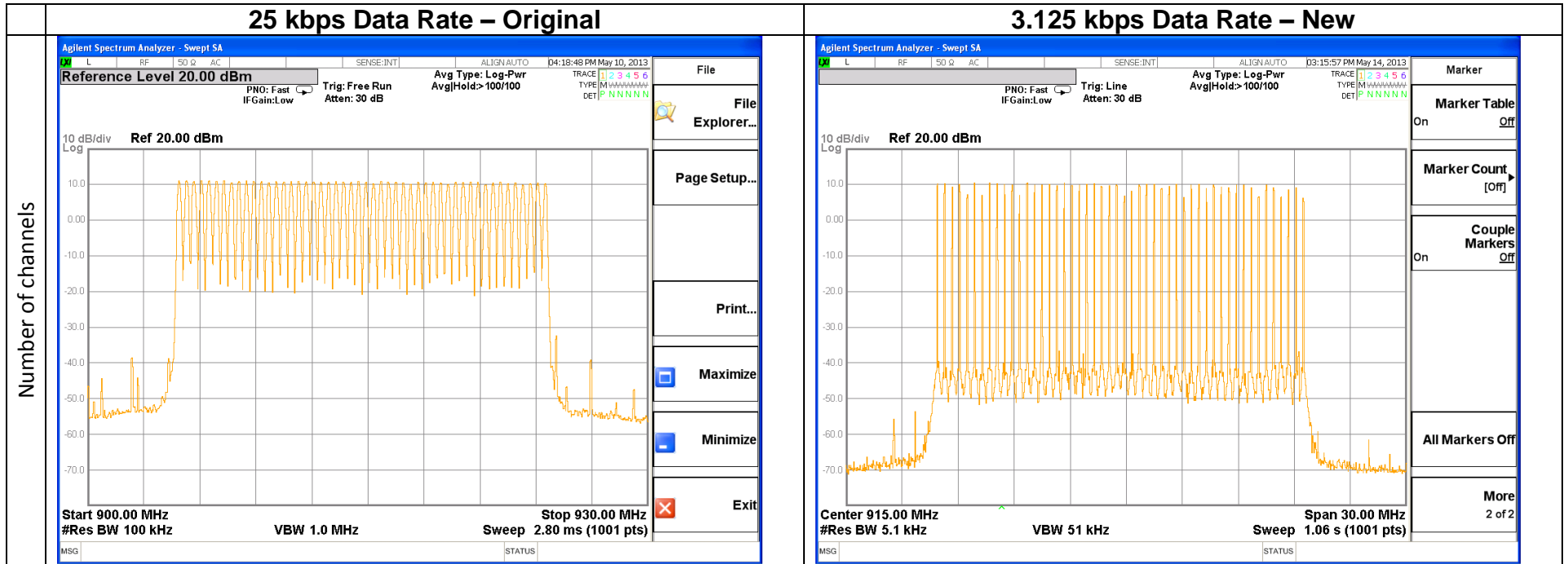
Badger Meter

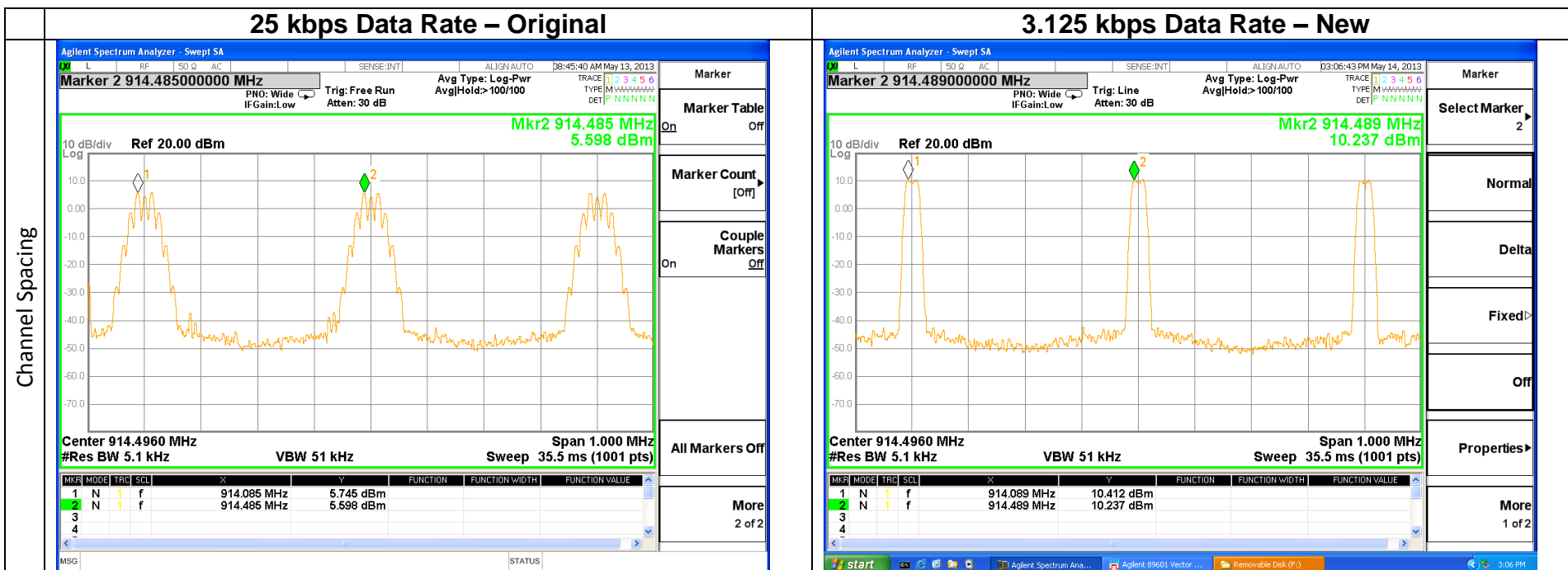
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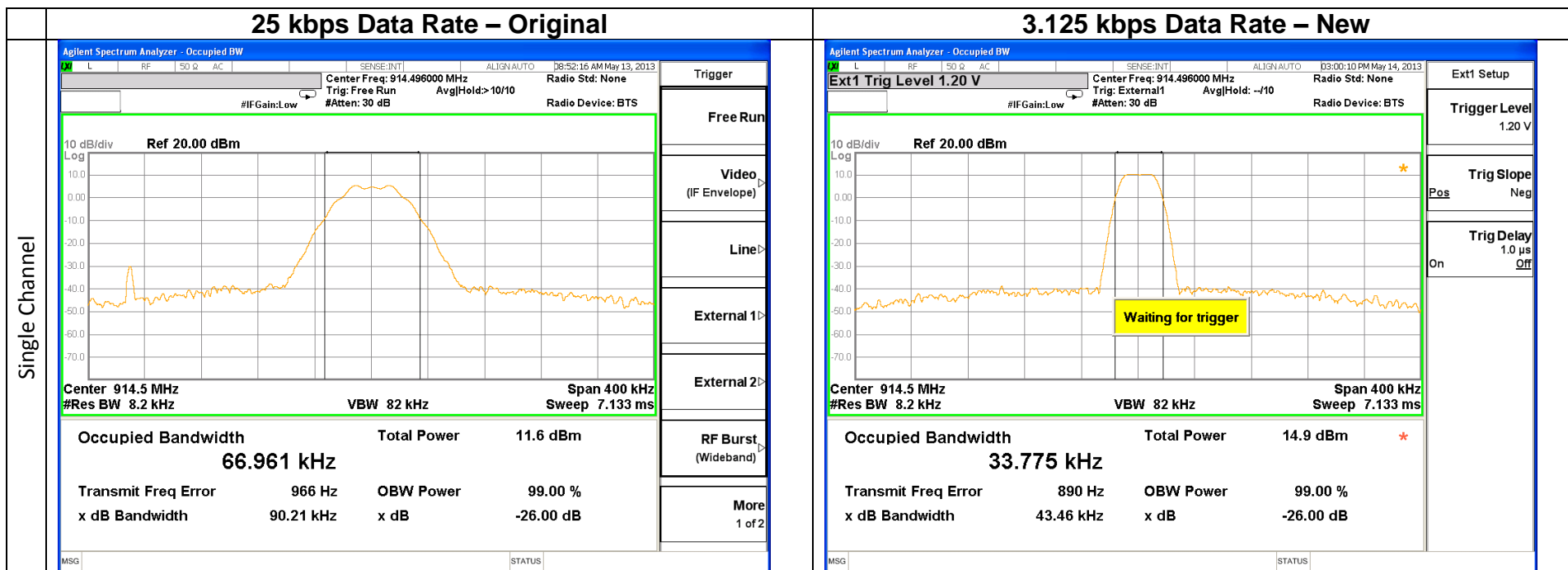
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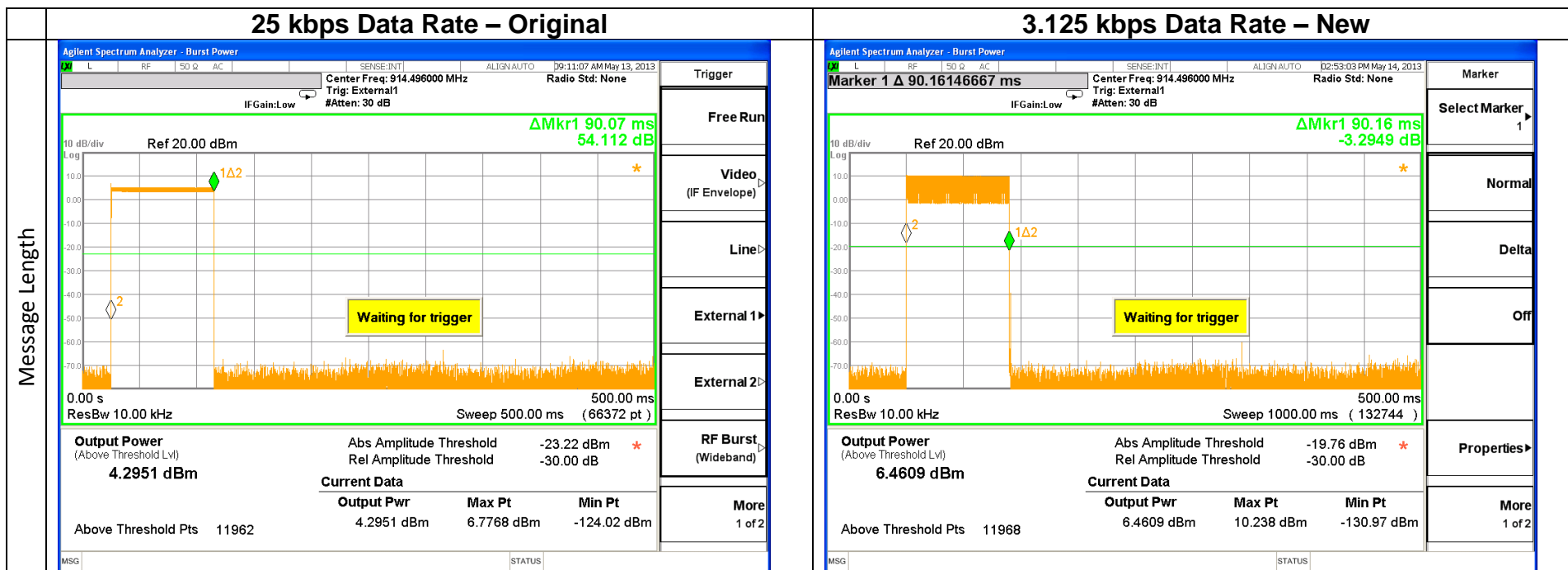
Milwaukee, Wisconsin 53224-9536

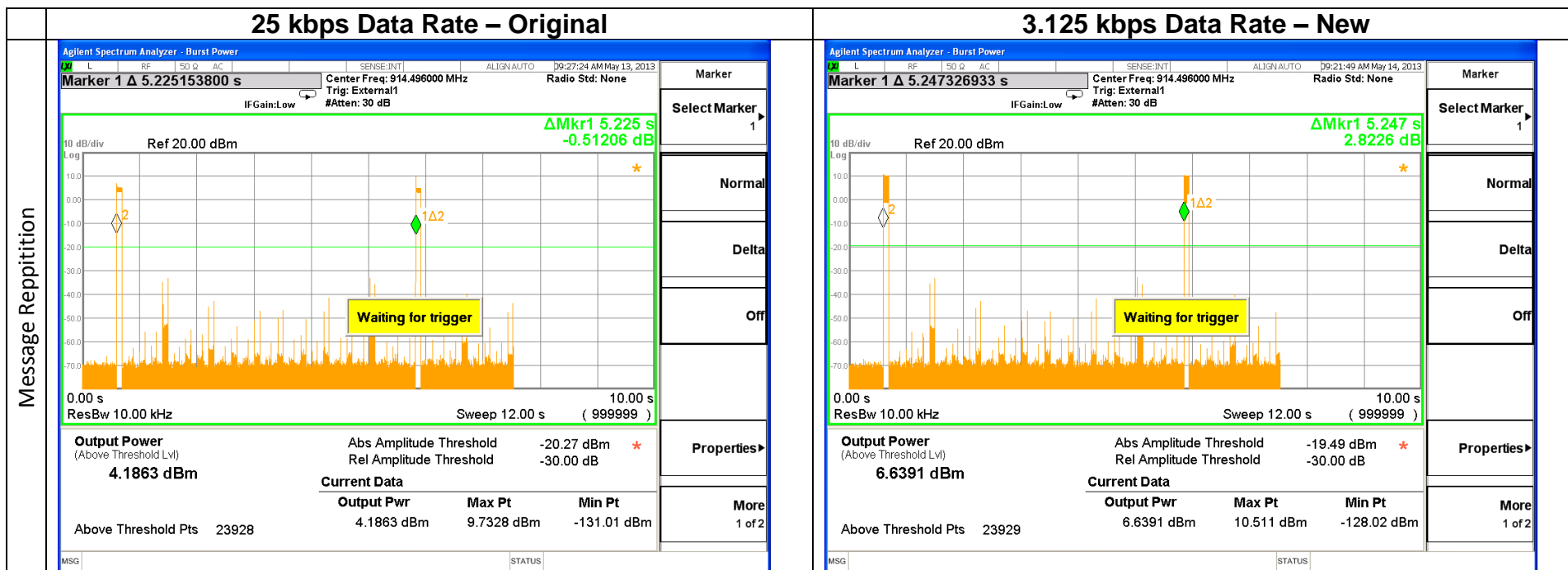
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Notes:

1. In the 25 kbps Time of Occupancy measurement, the runt pulses are transmissions on adjacent channels.
2. In both the 25 kbps and 3.125 kbps Time of Occupancy measurements, multiple transmissions are shown; this was to make collecting transmission widths easier.
3. For both data rates, channel repetition is based on a pseudo random channel hopping algorithm. A screen shot of a couple of transmissions is shown below:

