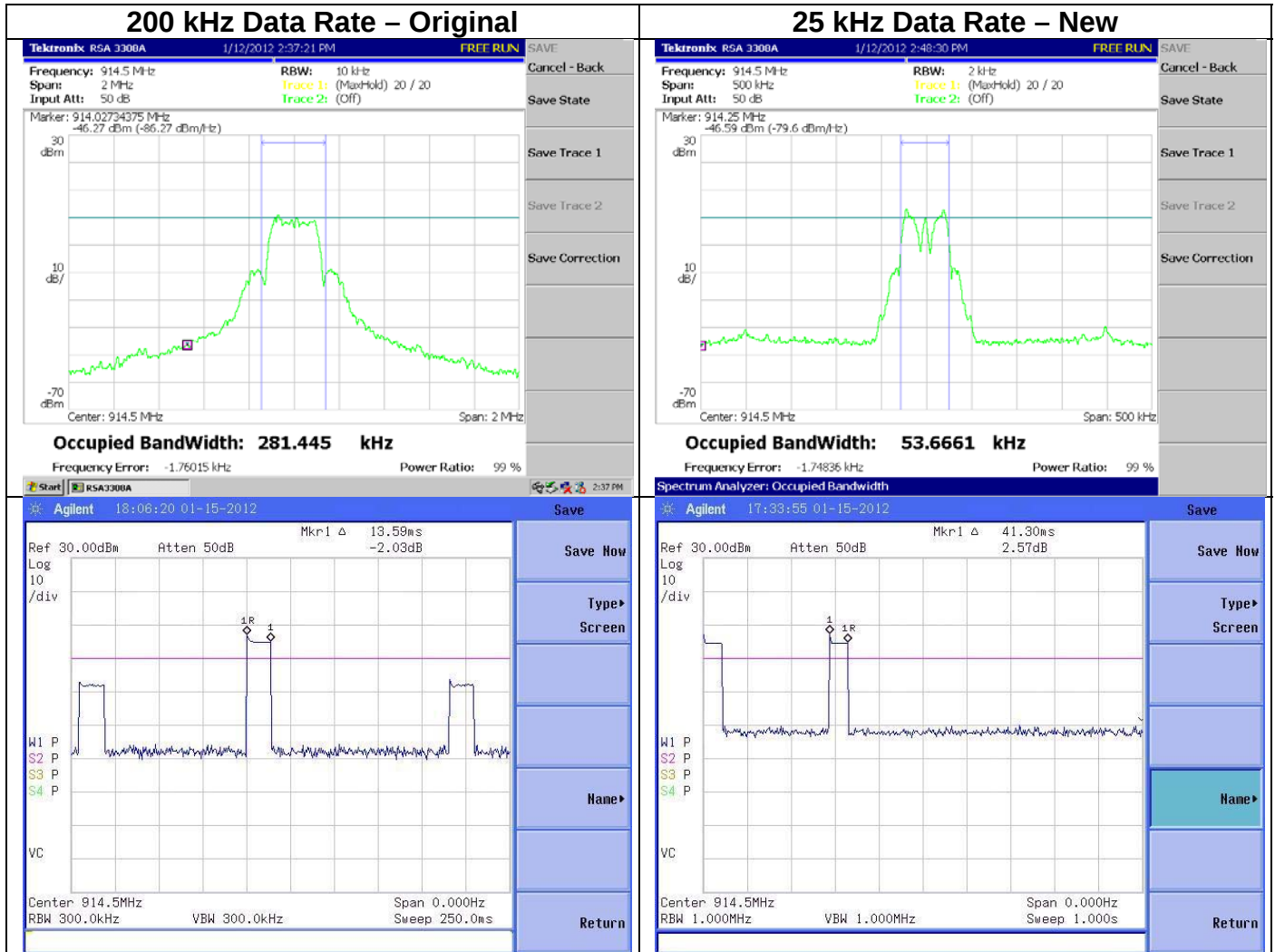


January 31, 2012

This document will show the bandwidth affects of changing the data rate on the Orion SE Fixed system from 200 kHz to 25 kHz. All testing was done on one SE Water endpoint (FCC ID: GIF2011W, original grant date 05/12/2011; IC ID: 1046A-2010G, original grant date 02/11/2011) with two different sets of firmware. In the original firmware the fixed mode data rate is 200 kHz. The proposed new firmware decreases the fixed mode data rate to 25 kHz. The mobile mode data rate for these endpoints will remain at 200 kHz. Modulation scheme, channel spacing, channel location, channel hopping algorithm, and transmit power remain the same with the new data rate.





Notes:

1. In the 200 kHz Time of Occupancy measurement, the runt pulses are transmissions on adjacent channels.
2. In both the 200 kHz and 25 kHz 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:

