

## Response to RT 44891 12/17/13

### FCC Question:

*The final paragraph of the waiver dated 11/30/2011 states that this device's bandwidth is 13 kHz with an operational frequency of 3.156 MHz. However, block 8(a) does not reflect this frequency range. Please confirm that the external transmitter operates within the bounds of 3,149,500 Hz and 3,162,500 Hz. Also, please verify the data missing from Form 731 Block 8(b) and Block 8(e) (rated RF power output and microprocessor, respectively)*

### Summary:

The measured occupied bandwidth (OBW) subject of this inquiry was determined utilizing different measurement settings at different times. While the original measurement reported 13kHz, this measurement was performed using a significantly large resolution bandwidth (RBW) setting than the most recent measurement. Good engineering practice for this measurement includes measurement of the OBW using a RBW between 1-5% of the measured OBW. In the case of near CW signals, the measured OBW is directly proportional to the RBW settings. The OBW has been measured again by the applicant and the results are summarized below. The applicant states that the design of the equipment has not changed since the original request for waiver.

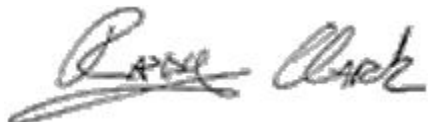
Measurement	RBW	Type	OBW
Original (c. 2010)	9.1 kHz	6 dB	13.0 kHz
12/18/13	10 kHz	6 dB	14.5 kHz
12/18/13	1 kHz	20 dB	3.57 kHz
12/18/13	100 Hz	20 dB	240 Hz
12/18/13	10 Hz	20 dB	25 Hz

Additional measurements performed by Rongching Dai, Second Sight using an HP 8560E S/N3517A01545, calibration date 04/24/2013.

The additional measurements support that the measured OBW is consistent between the waiver request and the provided test report; the difference is accounted for by the changes in measurement settings.

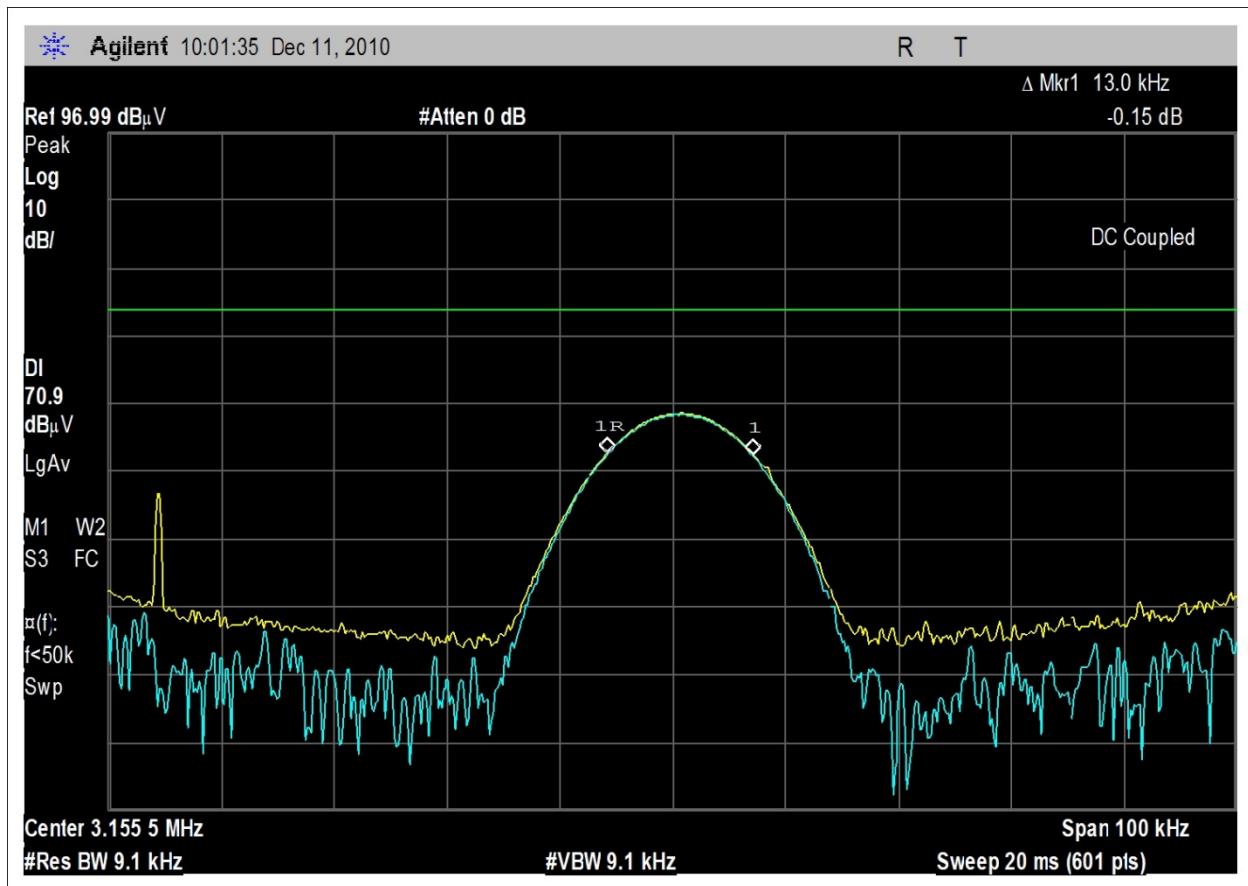
Please note that in accordance with KDB 634817 D01 under Part 15 Unlicensed Transmitters section 3, the application form was submitted utilizing the center frequency of the channel, since the product only operates on a single frequency. Additionally, the remaining equipment specifications were omitted based on FCC guidance and presentation materials. The microprocessor section is an optional field and was omitted at the discretion of the applicant.

Respectfully submitted,

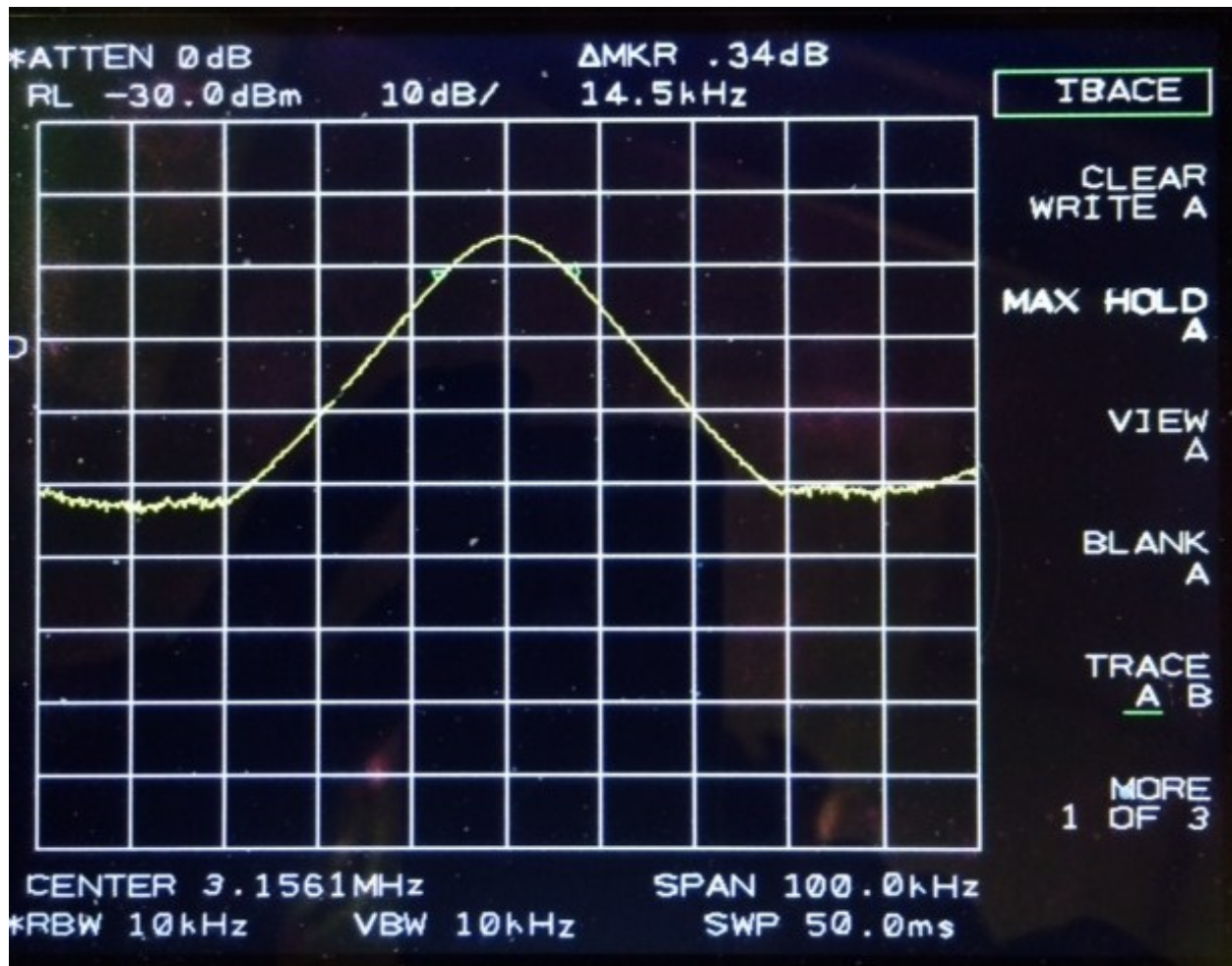


Randy Clark (on behalf of Jim Little)  
CKC Certification Services, LLC.

Below is the original plot showing the measured 13kHz OBW. Note that the measurement utilizes a 9.1kHz RBW and the reported 13kHz represents the 6dB points.

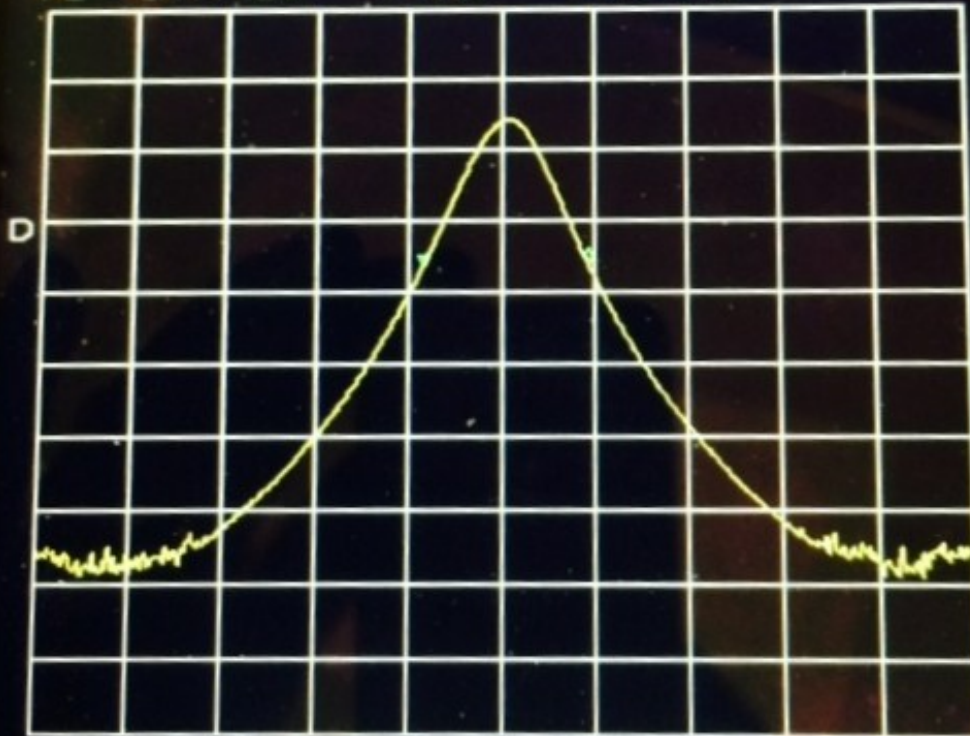


Additional Measurements by Second Sight 12/18/2013:



\*ATTEN 0dB      ΔMKR .33dB  
RL -30.0dBm    10dB/    3.57kHz

TBACE



VID AVG  
ON OFF

DETECTOR  
MODES

A EXCH B

NORMLIZE  
ON OFF

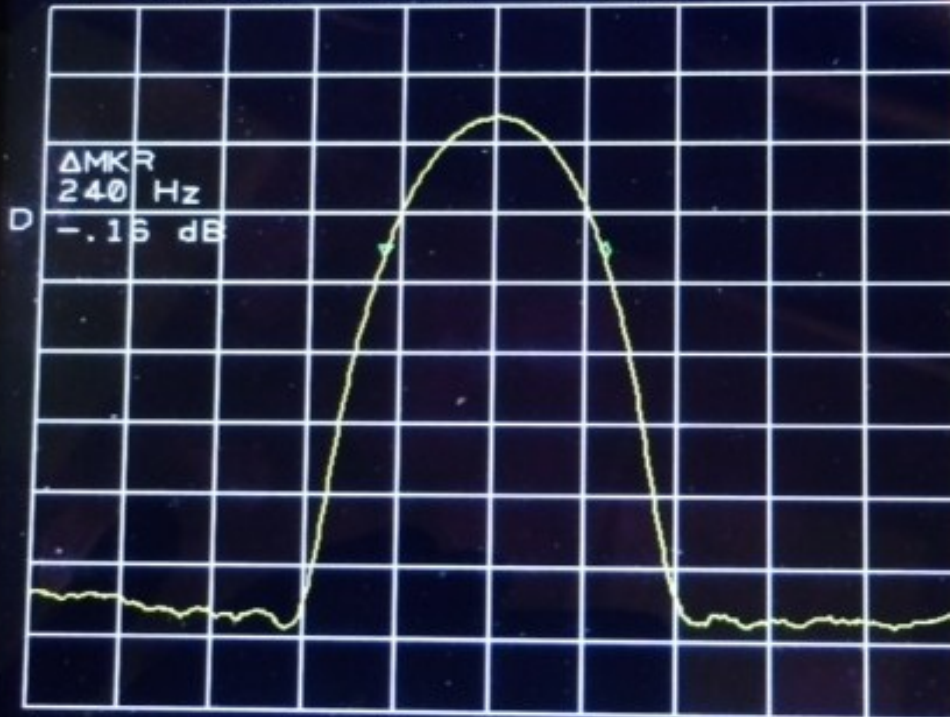
NORM REF  
POSN

MORE  
2 OF 3

CENTER 3.15610MHz      SPAN 20.00kHz  
\*RBW 1.0kHz    VBW 1.0kHz    SWP 200ms

\*ATTEN 0dB VAVG 94 ΔMKR -.16 dB  
RL -30.0dBm 10dB/ 240Hz

MAKER



MARKER  
NORMAL

MARKER  
DELTA

MARKER  
1/DELTA

MKRNOISE  
ON OFF

SIG TRK  
ON OFF

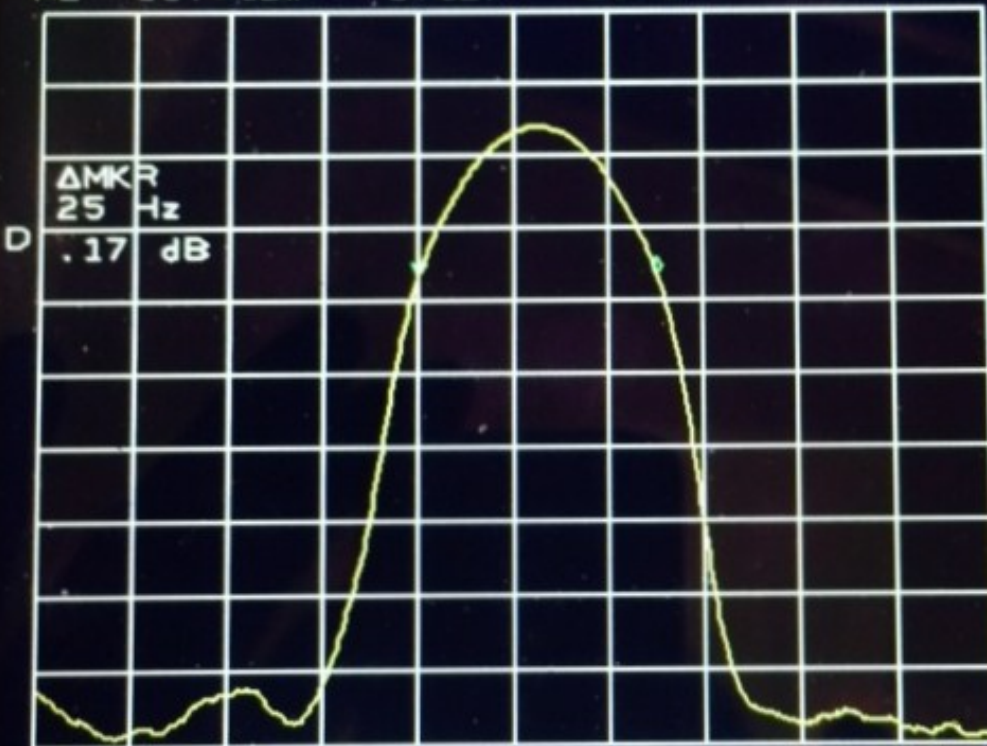
MARKERS  
OFF

CENTER 3.156100MHz SPAN 1.000kHz  
\*RBW 100Hz VBW 100Hz SWP 101ms



\*ATTEN 0dB VAVG 94  $\Delta$ MKR .17dB  
RL -30.0dBm 10dB/ 25Hz

MARKER



MARKER  
NORMAL

MARKER  
DELTA

MARKER  
1/DELTA

MKRNOISE  
ON OFF

SIG TRK  
ON OFF

MARKERS  
OFF

CENTER 3.156100MHz  
\*RBW 10Hz VBW 10Hz

SPAN 100.0Hz  
SWP 296ms