



**Antennas • Filters**

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July 18, 2012

Mr. Doug Vernier, Consultant  
Winona State University  
PO Box 5838  
Winona MN 55987  
Email: dverneir@v-soft.com

**Ref: BPED-20100427**  
**KQAL Winona, Minnesota**

Dear Mr. Vernier,

Thank you for your brief describing the proposed installation of a new FM antenna on the same structure with existing directional translator antenna for station W297AW.

I believe that the vertical separation proposed is adequate to prevent any significant effect to the directional characteristics of the W297AW translator antenna. Also, I believe that the new feed line placement will not cause any effect to the translator antenna radiation pattern.

This opinion carries no performance guarantee and is based solely on the data provided by Winona State University and the practical experience of our sales engineers. It is by no means a comprehensive analysis and Kathrein-Scala recommends Winona State University to engage the services of a qualified communications consulting firm for a definitive evaluation. The furnished data has not been verified by Kathrein-Scala for completeness or accuracy.

If we may be of further assistance, please do not hesitate to contact us.

Best regards,

Michael Wm. Bach, Sales Engineer  
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