

Narrative Response for Question No. 7

a. Describe the complete program, experimentation, equipment and theory.

The following components make up the Dielectric antenna system:

- antenna panel,
- power dividers,
- power amplifier,
- filter, and
- flexible transmission line.

Once the system is complete, the Dielectric antenna system shall be tested per the design of experiment (DOE):

- Impedance check all components
- Impedance check the system
- VSWR sweep the system
- Measure isolation between right and left sides of antenna system
- S parameter sweep the filter
- S parameter sweep the power amplifier
- Confirm signal between the radio head and controller
- CW/RSSI drive test the down link for both polarizations using a TEMS scanner
- Map interference in RX band with a spectrum analyzer
- Check the power of the BTS (base station) and verify the ERP
- Using a PCTEL scanner and TEMS phone perform a drive test out to 40 km to test signal strength for the Dielectric antenna as well as an industry standard antenna.

b. Objectives to be accomplished

Demonstrate performance superiority of Dielectric's antenna system relative to current technology in the wireless communications industry.

c. Expected contribution to the radio art or related to something not already investigated.

Test the coverage and capacity of a new wireless system. Currently, internationally, there are no known solutions for wireless in rural areas.