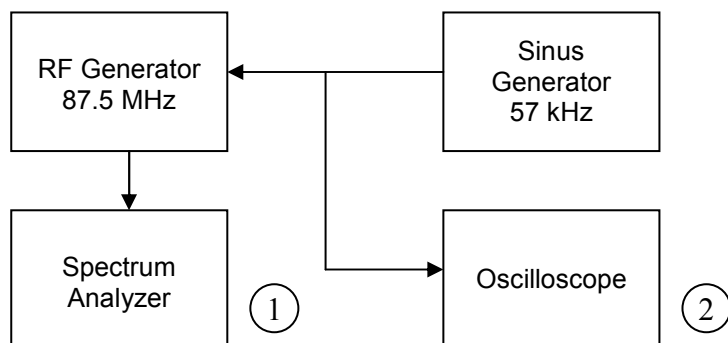
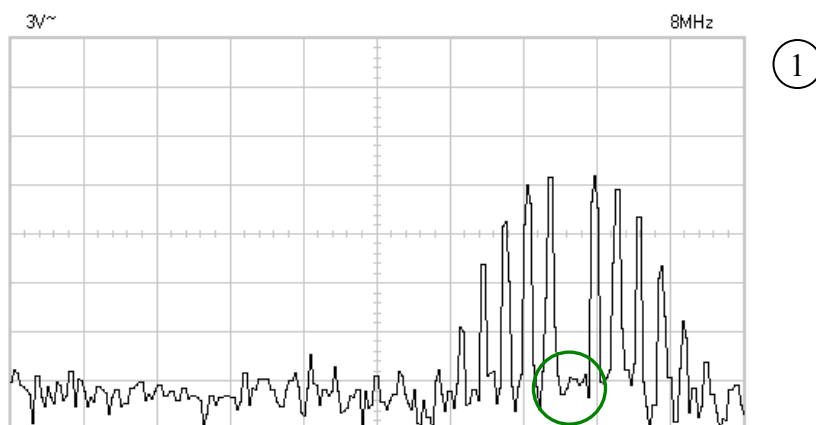


Several procedures exist for verification of the RDS deviation measurement. Following method uses a RF generator whose modulation input is calibrated by carrier-null method at 57 kHz modulation frequency. This provides a peak-to-peak modulation signal voltage reference for setting the RDS encoder's output level to the RDS deviation we want to verify (5 kHz in this case).

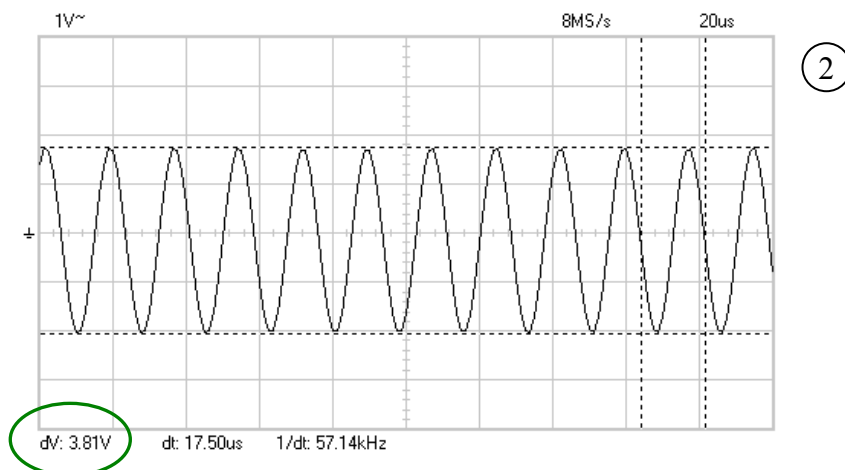
Step 1 – RF generator calibration



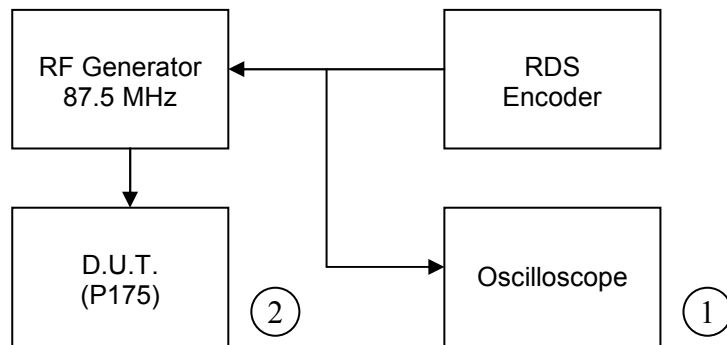
First carrier null occurs when the overall peak FM deviation is $57 \text{ kHz} * 2.40 = 136.8 \text{ kHz}$:



Appropriate peak-to-peak modulation signal voltage set on the sinus generator is **3.81 Vpp**:

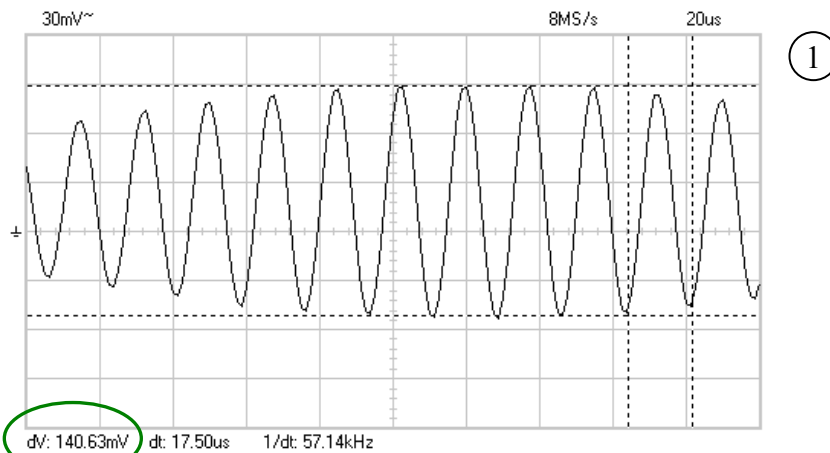


Step 2 – RDS deviation measurement verification



For **5 kHz** RDS peak deviation we can calculate appropriate peak-to-peak RDS signal level (L_{rds}) as follows:

$$L_{rds} = 3.81 * (5 / 136.8) = 0.14 \text{ Vpp}$$



After setting that output level on the RDS encoder we can finally verify the RDS deviation value showed on the D.U.T.:



Value expected: 5.0 kHz

Value read: 4.8 kHz

Conclusion

The difference obtained is within the tolerance specified for the D.U.T.

Note: The P175 firmware version is 1.4.