

# Open-Ended Coaxial Dielectric Probe — Quick Reference Checklist

## Field Technician Calibration & Service Execution Form

|                         |                       |                        |                |
|-------------------------|-----------------------|------------------------|----------------|
| Technician Name:        | _____                 | Date:                  | 2026-____-____ |
| Station / Location:     | _____                 | Instrument S/N:        | _____          |
| Weather / Ambient Temp: | _____ °C / _____ % RH | Battery / Power Level: | _____ V DC     |

| Step # | Procedure / Audit Task     | Target Range / Criteria                      | Status                                                         |
|--------|----------------------------|----------------------------------------------|----------------------------------------------------------------|
| 1      | VNA Warm-up & Sweep Setup  | 30-min warm-up; 0.5–20 GHz, IFBW 1 kHz       | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 2      | Coaxial Cable Torque Check | SMA connection torqued to 5.0 in-lbs         | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 3      | Probe Tip Surface Audit    | Zero scratches; cleaned with ISOPAL          | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 4      | Air Calibration (Open)     | Reflection coefficient  S11  = 1.00 +/- 0.01 | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 5      | Short Calibration Block    | Phase S11 = 180° +/- 1.0°                    | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 6      | DI Water Reference Load    | e' = 78.4 +/- 0.5 at 2.0 GHz (25.0 °C)       | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 7      | Air-Bubble Free Contact    | Zero air gaps at fluid-probe interface       | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 8      | Cole-Cole Model Extraction | Calculated e' and e'' curves smooth          | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 9      | Temperature Compensation   | Recorded liquid temp within +/- 0.2 °C       | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 10     | Post-Test Methanol Rinse   | Probe tip rinsed and stored dry              | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |

FIELD REMARKS & CONDITIONAL OBSERVED ANOMALIES:

|                                                                                                                                                                                                          |                                                                                                                                                                                                                                                          |
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| <b>PREPARED BY (DOCUMENT CONTROL):</b><br><br><b>Lead Field Specialist:</b> Kadeem Manning<br><b>Role:</b> Author & QA/QC Reviewer<br><b>Signature:</b> <i>Kadeem Manning</i><br><b>Date:</b> 2026-09-16 | <b>FIELD TECHNICIAN EXECUTION SIGN-OFF:</b><br><br><b>Technician Signature:</b> _____<br><b>Printed Name:</b> _____<br><b>Execution Date:</b> 2026-____-____<br><b>Status:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Follow-Up Req. |
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