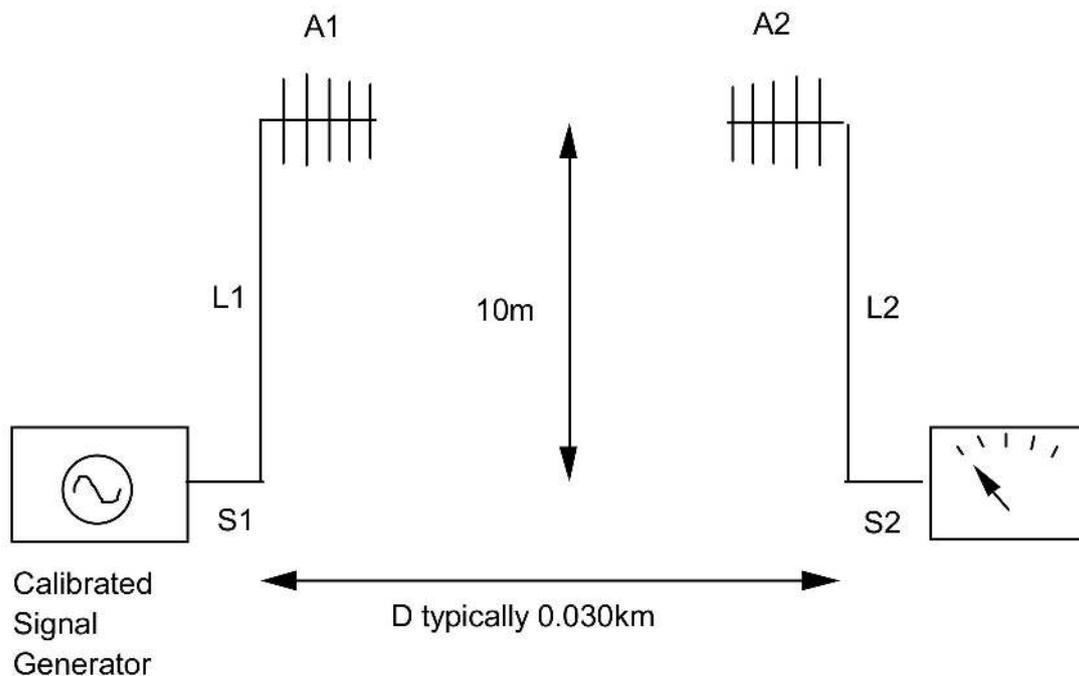


## Calibration of Field Strength Measuring Equipment



$$S2 = S1 - L1 + A1 + A2 - L2 - \text{Pathloss} \quad \text{dB}\propto\text{V}$$

$$\text{Path Loss} = 28.25 + 20 \times \log_{10} ( f \text{ MHz} \times D \text{ km} ) \quad \text{dB}$$

$$A1 \ \& \ A2 = \text{Antenna Gain} \quad \text{dB} \qquad L1 \ \& \ L2 = \text{Cable loss} \quad \text{dB}$$

$$S1 = \text{Generator output} \quad \text{dB}\propto\text{V} \qquad S2 = \text{Received Signal} \quad \text{dB}\propto\text{V}$$

- 1 Known antennas (simple 1/2 dipole acceptable) to be in good condition, and gain to be checked against original calibration chart . Use Calibration chart to obtain conversion factor from Voltage (dBμV ) to Field strength (dBμV/m).
- 2 Cable loss to be measured.
- 3 Back to back check of instruments to be made to confirm meter readings, and verify cable losses.
4. Ensure frequency used is free from other broadcasts before starting procedure.
5. The Measuring setup above to be checked against theoretical calculation until results are consistent within ±1.0dB. The tests to be carried out on a clear site free of any obstructions, to minimise reflections. The Rx system to be moved along and recording made to see if standing wave exists, average of readings taken.
6. The above procedure repeated at beginning and end of each day, by returning to exactly the same location.

## Calibration of Field Strength Measuring Equipment

