# Validation dipole

The validation dipoles are used to check that the entire measurement chain functions correctly, according to the corresponding standards:

**FOR SAR MEASUREMENTS:**

- One frequency band corresponds to each dipole.
- Each dipole is totally symmetrical (made with l0/4 balun).
- A complete range of dipoles covers the frequency bands used for 5G applications.
- Signals are sent through dipoles in order to take measurements with phantom filled with human equivalent liquid.

**FOR HAC MEASUREMENTS:**

- For HAC, three broadband dipoles are available.

## MAIN FEATURES

### Product category

- Dipole, Validation antenna

### Function

- Validates the setup of the system, system check

### User profile

- SAR and HAC bench users

### Related standard:

- IEC/IEEE 62209-1528; FCC related KDBs; IEC 62209-1/ IEC 62209-2; EN 50361:2001; ANSI C63.19

### Related equipment:

- COMOSAR bench, HAC bench, handset positioning system

## SAR dipoles

### Technical & mechanical characteristics

| | |
|---|---|
| **Frequencies** | 150, 300, 450, 750, 835, 900, 1450, 1500, 1640, 1750, 1800, 1900, 1950, 2000, 2100, 2300, 2450, 2600, 3000, 3300, 3500, 3700, 3900, 4200, 4600, 4900, 5200-5800, 6500-7000 MHz |
| **Adaptation** | S11 < -20 dB in specified validation Position |
| **Connectors** | SMA-f |
| **Dimensions** | Length depends on dipole frequency |

## HAC dipoles

### Technical & mechanical characteristics

| | |
|---|---|
| **Broadband dipoles** | 800-950 MHz, 1700-2000 MHz and 2000-2650 MHz |
| **Adaptation** | S11 < -10 dB in specified validation Position |
| **Connectors** | SMA |
| **Dimensions** | Length depends on dipole frequency |


HAC validation dipole

The dipoles can be easily fixed to the MVG device positioning system.