York EMC Services Ltd

ARA01 – Active Receive Antenna

THE UNIVERSITY of York

ARA01 – Active Receive Antenna

The Active Receive Antenna has been designed as a pre-compliance emissions antenna, with a performance comparable to a conventional wideband passive antenna such as the “Bilog™”. The small size makes it particularly suitable for use in anechoic chambers, however it can also be used on an Open Area Test Site (OATS).

The unit is powered from a single PP3 battery. A green LED indicates that the antenna is active, a red LED indicates that the battery is low and should be recharged or replaced. There are two sets of Dipole Antenna Elements (DAE) which can be used. The unit is supplied with one set as standard (DAE01). For higher sensitivity at low frequencies DAE02 should be used.

- Stable performance
  - ✔ Repeatable measurements
- “Bilog™” equivalent performance
  - ✔ Accurate results
- 30MHz to 1GHz range
  - ✔ Most commonly used measurement range
- Compact and Portable
  - ✔ Measurements in confined spaces
  - ✔ Measurements where equipment must be hand carried
  - ✔ Field testing
- Battery powered
  - ✔ Mains power not required for measurements
- Low cost
  - ✔ Affordable measurement systems

Applications

- Radiated emissions measurements in a confined area
- Low cost alternative to passive wideband antenna.
- Portable measurement systems

Specifications

Frequency Range	30MHz (200MHz optimum) to 1GHz using DAE01 100mm long antenna elements 30MHz to 300MHz (optimum) using DAE02 290mm long antenna elements
Output connector	50Ω BNC socket
Output VSWR	1.5:1
Dynamic range	90dB
1dB compression	15.4dBm ≡ 35.5mw ≡ 1.33V (in a 50Ω system)
Antenna factor	See graph below
Temperature stability	5°C to 45°C <1dB
Time stability	Typically <1dB over a 12 month period
Dimensions	34mm x 34mm x 150mm (168mm including connector) not including dipole elements
Weight	0.39kg (including battery)
Power supply:	1 x 9V battery (PP3 or equivalent). Alkaline or rechargeable.
Operating time	6.5 hours typical with alkaline cells
Indicators	Power on – green LED Battery low – red LED

Standard Order Kits

Part Number	Description	Parts Included
ARA01KIT01	Standard ARA01 active receive antenna kit with pair of 200MHz – 1GHz antenna elements	• ARA01 active receive antenna • Pair of DAE01 antenna elements • Alkaline battery • Standard test CAL08

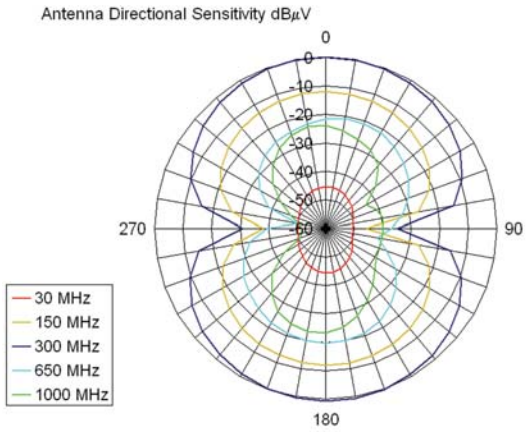
Accessories

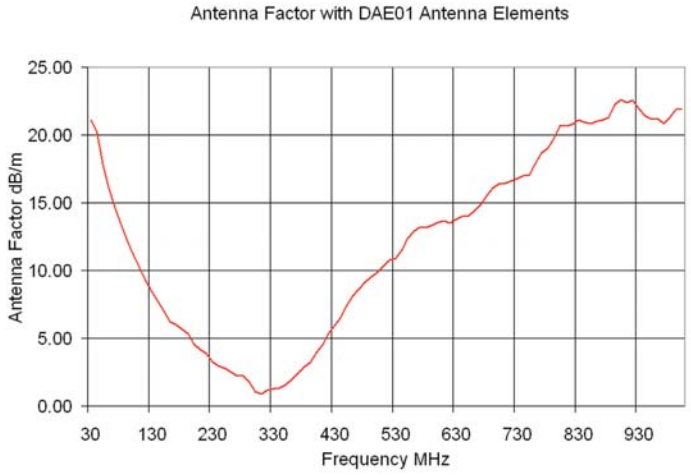
Antennas	DAE01 DAE02	200MHz to 1GHz (optimum) 100mm long antenna elements 30MHz to 300MHz (optimum) 290mm long antenna elements
Tripod adaptor	TRA01	Tripod adaptor with ARA01 mounting brackets

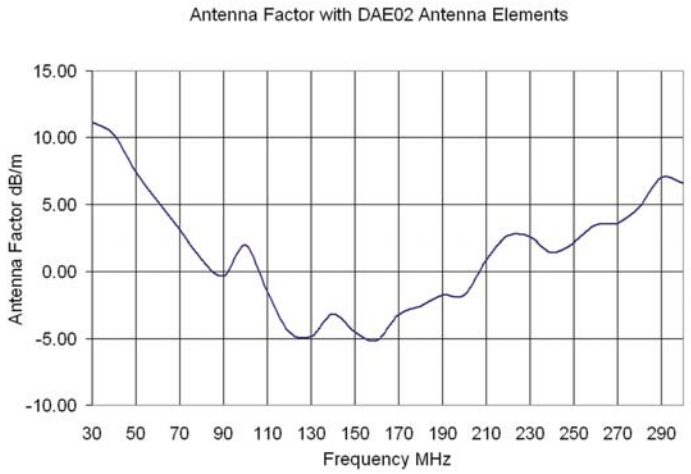
Output Measurement Results

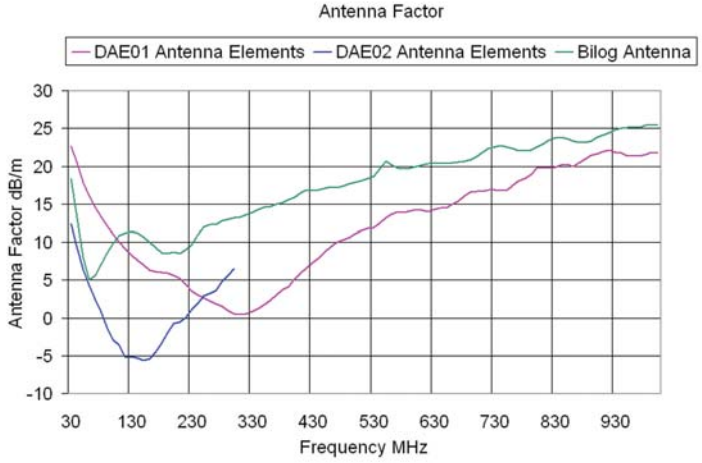
Antenna factor	CAL08	30MHz – 1GHz antenna factor derived from GTEM measurements against a known standard

Typical Output Measurement Results









York EMC Services Ltd

York EMC Services Ltd,
The University of York,
Heslington, YORK, YO10 5DD, UK.
Tel +44 (0)1904 434440
Fax +44 (0)1904 434434
Email enquiry@yorkemc.co.uk
www.yorkemc.co.uk/instrumentation

Design and print by Peter Turpin Associates

Y301FLY01