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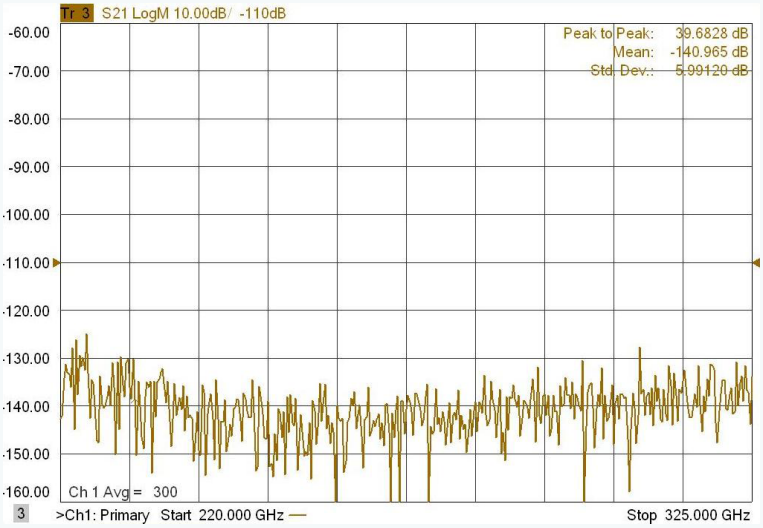
WR-03 Antenna Test & Measurement Frequency Extension System 220-325 GHz: **AET/AER-03-0001/2**

Farran's AET-03-0001 and AER-03-0002 frequency extenders are a dedicated Test & Measurement solution for antenna performance verification in WR-03 (220 – 325 GHz).

The system comprises of the tranmitter (AET) and receiver (AER) units that enable antenna radiation pattern, gain and phase polarisation measurements in the near- and far-field.

Key Facts:

- Dynamic range > 120 dB.
- Exceptional amplitude and phase stability: ±0.4 dB / ±6 deg.
- Frequency coverage 220 - 325 GHz.
- Precision waveguide test port WR-03 IEEE 1785.2a (UG-387/UM compatible).
- Lightweight: 1.8 kg (AET) and 1.2 kg (AER).



> We required simple and easy-to-use frequency extension systems that enable coherent phase and amplitude measurements. We also required a very high dynamic range and full waveguide bandwidth coverage. All these features, together with high stability and small form factor, make Farran's AET/AER modules a perfect solution for our antenna range measurements.
>
> **Senior Antenna Test Engineer, Space Research and Technology Centre**

RADIATION PATTERN MEASUREMENTS

- Lightweight and compact - ideal for omni-directional spherical systems and scanners.
- High measurement speed.

GAIN, PHASE AND POLARISATION MEASUREMENTS

- Coherent phase and amplitude measurements.
- High phase and amplitude stability.
- Very high dynamic range.

NEAR- AND FAR-FIELD MEASUREMENTS

- Spherical near- and far-field measurements.
- Far-field measurements of low gain antennas.

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Product Specification

System Specification	Unit	Min	Typ	Max
Operating Frequency	GHz	220	-	325
Dynamic Range (AER-03-0002)	dB	120	135	-
Test Port Output Power (n. trc. meas.)	dBm	-	-12	-
Magnitude Trace Stability (typ.)	dB	-	±0.4	-
Phase Trace Stability (typ.)	deg	-	±6	-
RF/LO Port Damage Level (nom.)	dBm	+15	-	-
RF Input Frequency	GHz	12.22	-	18.06
RF Multiplier Number (nom.)	-	-	18	-
RF/LO Power Input	dBm	5	-	10
LO Input Frequency	GHz	9.16	-	13.54
LO Harmonic Number (nom.)	-	-	24	-
RF Test Port (nom.)	-	WR-03, IEEE 1785.2a (UG-387/UM compatible)		
RF Test Port VSWR (typ.)	-	-	<1.6:1	-
RF Input VSWR (typ.)	-	-	<1.4:1	-
IF Bandwidth (nom.)	MHz	5	-	1000
RF/LO/IF Ports	-	SMA(F)		
DC Power Requirements (typ.)	-	+12V @ 1.5A		
Dimensions (approx.) AET	mm	230 x 105 x 60		
Dimensions (approx.) AER	mm	170 x 105 x 60		
Weight (approx.) AET	kg	1.8		
Weight (approx.) AER	kg	1.2		
Operating Temperatures (nom.)	˚C	0	-	30

SERVICES AVAILABLE

- Technical Support
- Installation and Setup
- Maintenance
- Application Support
- Hardware Support

For more information on any of our products or services please visit our website: www.farran.com

TECHNICAL SUPPORT

- Technical support provided directly by our knowledgeable and friendly engineers.
- Support for pre- and post-purchase: system configuration, installation and troubleshooting.

PRODUCT INSIGHTS

- For more product insights register at www.farran.com/customer
- Additional information: test data, CAD drawings and 3D models available.

WARRANTY

- Standard 3 year warranty.
- Up to 5 year warranty optional.

Specification Definitions

Nominal value (nom.) – ensured by design, not tested. **Measured value (min, max)** – expected and warranted product performance obtained from the actual measurements of product sample. **Non-traceable measured value (n. trc. meas.)** – expected product performance obtained from the actual measurements of a product sample by means of using Farran's own equipment and methods. Traceable only to Farran laboratory equipment. **Typical data (typ.)** – value that represents the product specification met over 90% of bandwidth or a mean value.
Specifications without limits – represent the warranted product performance; with values of no or a negligible deviation from the given value and as such have a secondary impact on the product performance.