

**ARA TECH** offers three different types of Dipole Antennas for precise EMI measurement.

The **ADA series** active dipoles are an easy to use alternate for tuned Dipole antennas. These are extremely broadband antennas, ideal for emission testing, eliminating the need for manual adjustment of the dipole at each frequency of measurement. For applications where antenna sensitivity is critical over a broad frequency range and no suitable ground plane is available, an **ADA** is the best choice. The rotatable (vertical to horizontal) dipole elements allow measurements of E-field components of a complex field.

A broadband balun and a low-noise preamplifier are integral parts of an **ADA** antenna. The active circuit design provides a near perfect balance, eliminating the need for a ground plane in the measurement. A calibration port is provided for verifying the proper performance of the antenna.

**FFD series** dipoles are pre-tuned for a fixed frequency (or narrow band) use. A **FFD** dipole may be used as an emission source for immunity testing of medical instruments and devices such as hearing aids and pacemakers. In a typical test set up, a **FFD** dipole may be substituted for a PCS, wireless or a cellular device such as a phone operating at the same frequency. This procedure improves the reliability and repeatability of the test measurements as per requirements established by US FDA and American Association of Medical instrumentations (AAMI).

Standard **FFD** dipoles are available for 900 MHz, 1.7 GHz, 1.85 GHz, 2.45 GHz, and 3 GHz bands. The user may specify the exact frequency to match that of the wireless device being tested. Each dipole is supplied with a SMA connector.



**ADA-120/A**



**FFD-185**

	<b>FFD90</b>	<b>FFD175</b>	<b>FFD185</b>	<b>FFD245</b>	<b>FFD300</b>
<b>FREQUENCY (MHz)</b>	900*	1750	1850	2450	3000

\* Specify the required center frequency in the band of interest.

### SPECIFICATIONS

INDIVIDUALLY CALIBRATED

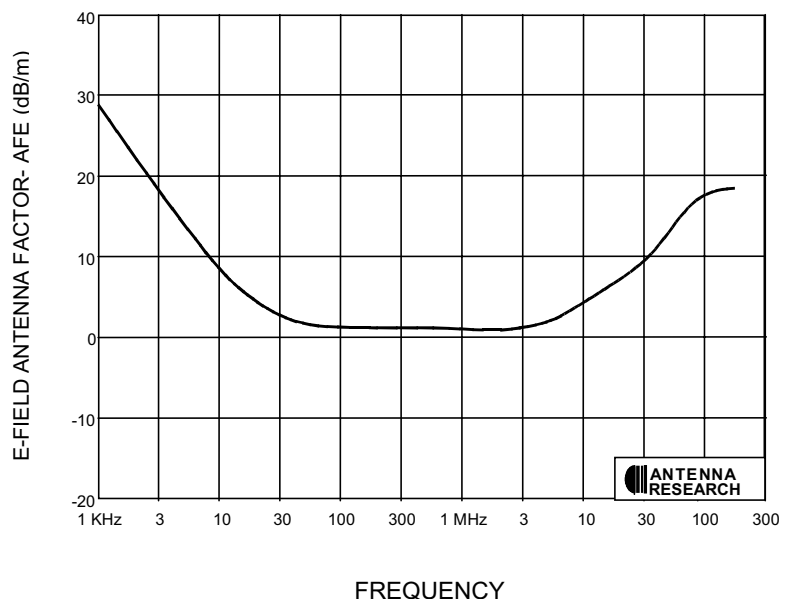
	ADA - 3010/A	ADA - 120/A
<b>FREQUENCY</b>	30 MHz - 1 GHz	1 kHz to 200 MHz
<b>POLARIZATION</b>	Linear, Continually Adjustable	Linear, Continually Adjustable
<b>IMPEDANCE (OHMS)</b>	50	50
<b>POWER SUPPLY</b>	Internal, Rechargeable	Internal, Rechargeable
<b>1 DB COMPRESSION</b>	3 v/m	3 v/m
<b>CONNECTORS</b>	Type BNC Female	Type BNC Female
<b>SIZE</b>	37" high x 19-1/2" dipole	37" high x 19-1/2" dipole
<b>WEIGHT (LBS/KG)</b>	10 / 4.5	10 / 4.5
	Active Receive Only	Active Receive Only

Options: 1) Tripod      2) Carrying Case

ADA-120/A TYPICAL SENSITIVITY (MINIMUM DETECTABLE E-FIELD, MDF) (REFERENCED TO A 1 KHZ BANDWIDTH)	
FREQUENCY	MDF (dB $\mu$ V/M)
1 kHz	41.4
10 kHz	23.0
50 kHz	10.9
100 kHz	6.6
200 kHz	2.1
500 kHz	-1.6
1 MHz	-2.1
5 MHz	-2.6
20 MHz	-3.9
40 MHz	-6.2
70 MHz	-6.3
100 MHz	-6.1
150 MHz	-5.4
200 MHz	-6.5

ADA-3010/A TYPICAL ANTENNA FACTOR AND TYPICAL SENSITIVITY		
FREQUENCY MHZ	AFF (dB M <sup>-1</sup> )	MDF (dB $\mu$ V/M)
30	17.8	-5.8
40	16.6	-7.2
50	15.4	-8.8
80	13.1	-11.5
100	10.1	-15.1
200	4.8	-20.0
300	9.3	-15.8
400	15.8	-10.6
500	20.8	-6.2
600	25.5	1.8
700	30.5	3.1
800	32.1	4.6
900	33.0	5.0
1000	32.7	5.0

ADA - 120/A - TYPICAL ELECTRIC FIELD ANTENNA FACTOR



The **TDS series** tunable frequency dipoles are used as accurate standard antennas for FCC and EN compliance testing, site attenuation measurements and antenna calibration per ANSI C63.5. Since the radiation response of these dipoles can be precisely calculated, **TDS series** dipoles are the preferred antennas for reference measurements. Four baluns cover the frequency range from 30 MHz to 1 GHz. Each dipole antenna duplicates the compensated balun design used by W.K. Roberts. All baluns covering the frequency range up to 1 GHz are optimized for low insertion loss of 0.5 dB or better.



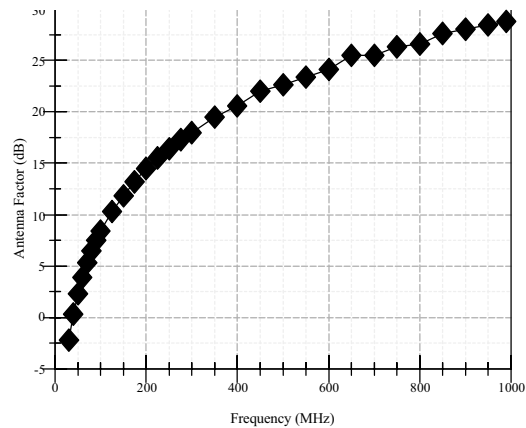
**TDS-3010/A**

### SPECIFICATIONS

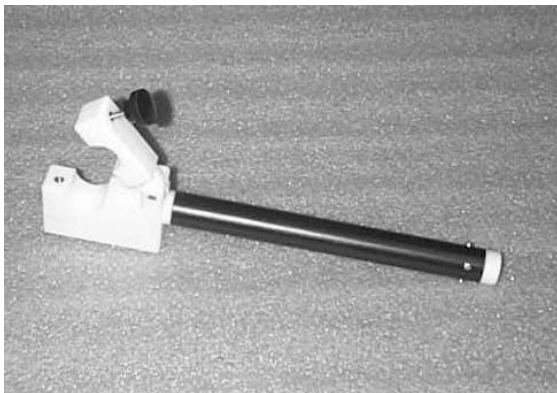
**VSWR:** <math><1.5 : 1</math>  
**Loss:** <math><0.5\text{ dB}</math>  
**Input Impedance:** 50 ohm  
**Connectors:** Type N – F

**TDS - 3010/A - Typical Electric Field Antenna Factor**

	FREQUENCY (MHz)	POWER INPUT
<b>TDS-3010/A*</b>	30 - 1000	50 - 300
<b>TDS-36/A</b>	30 - 60	300
<b>TDS-614/A</b>	60 - 400	200
<b>TDS-1440/A</b>	140 - 400	100
<b>TDS-410/A</b>	400 - 1000	50



\* For a set of 2 **TDS-3010/A** in a single carrying case, order the **TDS-3010/A2**



**TDS DIPOLE EXTENDER**



**TDS-4010**