4

Specifications and Supplemental Information

This chapter provides specifications and supplemental information for the Agilent E5091A.

Definitions

All specifications apply over a 18°C to 28°C range (unless otherwise stated) and 90 minutes after the instrument has been turned on.

Specification (spec.):	Warranted performance. Specifications include guardbands to		
	account for the expected statistical performance distribution,		
	measurement uncertainties, and changes in performance due		
	to environmental conditions.		

Supplemental information is intended to provide information that is helpful for using the instrument but that is not guaranteed by the product warranty. This information is denoted as either typical or nominal.

Typical (typ.):	Expected performance of an average unit that does not include guardbands. It is not guaranteed by the product warranty.
Nominal (nom.):	A general, descriptive term that does not imply a level of performance. It is not guaranteed by the product warranty.

Test Set Input/Output Performance

This section provides test set input/output performance without calibration by the ENA Series RF Network Analyzers.

Option 009

Description	Specification		
Frequency Range	50 MHz to 8.5 GHz		
Damage Level	20 dBm, ±25 V DC (Typical)		

Description		Frequency				
		50 MHz to 300 MHz	300 MHz to 1.3 GHz	1.3 GHz to 3 GHz	3 GHz to 6 GHz	6 GHz to 8.5 GHz
Load Match						
Test Port Selected	A, T2, R1+, R1-	19 dB	20 dB	18 dB	12 dB	10 dB
(Specification)	T1, R2+, R2-, R3+, R3-	15 dB	17 dB	15 dB	11 dB	8 dB
Test Port Unselected (Specification)	A, T2, R1+, R1-, R3+, R3-	23 dB	25 dB	19 dB	12 dB	11 dB
	T1, R2+, R2-	18 dB	20 dB	16 dB	12 dB	9 dB
Interconnect Port P1, P2, P3, P4 (Typical)		19 dB		17 dB	13 dB	9 dB
Insertion Loss						
Test Port (Specification)	A, T2, R1+, R1-	3	dB	4 dB	5 dB	6 dB
T1, R2+, R2-, R3+, R3-		5 dB		7 dB	8 dB	9.5 dB
Stability (Typical)		0.005 dB/°C 0.01 dB/°C			0.01 dB/°C	0.015 dB/°C
Isolation						
Over Arbitrarily Test Ports (Specification)		-100 dB			-90 dB	

Specifications and Supplemental Information **Test Set Input/Output Performance**

Option 016

Description	Specification
Frequency Range	50 MHz to 8.5 GHz
Damage Level	20 dBm, ±25 V DC (Typical)

Description		Frequency				
		50 MHz to 300 MHz	300 MHz to 1.3 GHz	1.3 GHz to 3 GHz	3 GHz to 6 GHz	6 GHz to 8.5 GHz
Load Match						
Test Port Selected (Specification)	A, T4, R1+, R2+, R3+, R4+, R1-, R2-, R3-, R4-	15 dB	17 dB	15 dB	9 dB	8 dB
	T1,T2, T3	12 dB	14 dB	14 dB	8 dB	6 dB
Test Port Unselected (Specification)	A, T4, R1+, R2+, R3+, R4+, R1-, R2-, R3-, R4-	18 dB	20 dB	16 dB	10 dB	9 dB
	T1, T2, T3	13 dB	15 dB	14 dB	8 dB	6 dB
Interconnect Port P1, P2, P3, P4 (Typical)		12 dB			9 dB	7 dB
Insertion Loss						
Test Port (Specification)	A, T4, R1+, R2+, R3+, R4+, R1-, R2-, R3-, R4-	6 dB 7		7 dB	8 dB	9.5 dB
	T1, T2, T3	9	dB	10.5 dB	12 dB	14.5 dB
Stability (Typical)		0.005 dB/°C		0.01 dB/°C	0.015 dB/°C	
Isolation						
Over Arbitrarily Test Ports (Specification)		-100 dB			-80 dB	

General Information

Table 4-1

Connector

Description		Supplemental Information	
Front Panel			
RF Connector	Туре	Option 009: Type-N, female, 50 Ω (nominal)	
		Option 016: SMA, female, 50 Ω (nominal)	
	Number of Ports	Option 009: 13 (Interconnect Port 4, Test Port 9)	
		Option 016: 29 (Interconnect Port 4, Test Port 25)	
Control Line		15 pin D-sub, female	
Rear Panel			
Connector Type		USB Port, Type B-Receptacles, provides connection to the ENA Series RF Network Analyzers	

Table 4-2Power Requirement*1

Description	Supplemental Information
Frequency	47 Hz to 63 Hz
Voltage	90 to 132 VAC, or 198 to 264 VAC
VA Max	150 VA max.

*1.A third-wire ground is required.

Specifications and Supplemental Information **General Information**

Description	Supplemental Information		
ЕМС			
CE ISM 1-A	European Council Directive 89/336/EEC EN / IEC 61326-1:1997+A1:1998 CISPR 11:1997+A1:1999 / EN 55011:1998+A1:1999 Group 1, Class A IEC 61000-4-2:1995 / EN 61000-4-2:1995 +A1:1998 4 kV CD / 4 kV AD IEC 61000-4-3:1995 / EN 61000-4-3:1996 +A1:1998 3 V/m, 80-1000 MHz, 80% AM IEC 61000-4-4:1995 / EN 61000-4-4:1995 1 kV power / 0.5 kV Signal IEC 61000-4-5:1995 / EN 61000-4-5:1995 0.5 kV Normal / 1 kV Common IEC 61000-4-6:1996 / EN 61000-4-6:1996 3 V, 0.15-80 MHz, 80% AM IEC 61000-4-11:1994 / EN 61000-4-11:1994 100% 1cycle Canada ICES001:1998 Note: The performance of EUT will be within the specification over the RF immunity tests according to EN 61000-4-3 or EN 61000-4-6 except under the coincidence of measurement frequency and interference frequency.		
ICES/NMB-001	This ISM device complies with Canadian ICES-001. Cet appareil ISM est conforme à la norme NMB-001 du Canada.		
C N10149	AS/NZS 2064.1/2 Group 1, Class A		
Safety			
CE ISM 1-A	European Council Directive 73/23/EEC IEC 61010-1:1990+A1+A2 / EN 61010-1:1993+A2 INSTALLATION CATEGORY II, POLLUTION DEGREE 2 INDOOR USE IEC60825-1:1994 CLASS 1 LED PRODUCT		
() LR95111C	CAN/CSA C22.2 No. 1010.1-92		
Environment			
	This product complies with the WEEE Directive (2002/96/EC) marking requirements. The affixed label indicates that you must not discard this electrical/ electronic product in domestic household waste. Product Category : With reference to the equipment types in the WEEE Directive Annex I, this product is classed as a "Monitoring and Control instrumentation" product. Do not dispose in domestic household waste. To return unwanted products, contact your local Agilent office, or see www.agilent.com/environment/product/ for more information.		

Table 4-3EMC,Safety and Environment

Description	Supplemental Information		
Operating Environment			
Temperature	+5 °C to +40 °C		
Error-Corrected Temperature Range	23 °C \pm 5 °C with < 1°C deviation from calibration temperature		
Humidity	0 % RH to 90% @<40 °C (non-condensing)		
Altitude	0 to 2,000 m (0 to 6,561 feet)		
Vibration	0.2 G maximum, 5 Hz to 500 Hz		
Non-Operating Storage Environment			
Temperature	-25 °C to +65 °C		
Humidity	0 % RH to 95% @<+65 °C (non-condensing)		
Altitude	0 to 4,572 m (0 to 15,000 feet)		
Vibration	0.5 G maximum, 5 Hz to 500 Hz		
Weight, Dimension			
Dimension	See Figure 4-1 through Figure 4-6.		
Net	6 kg (Option 009, Nominal)		
	7 kg (Option 016, Nominal)		

Table 4-4Test set Environment and Dimensions



Dimensions (front view, with Option 009, in millimeters, nominal)



4. Specifications and Supplemental Information

Specifications and Supplemental Information **General Information**

Figure 4-2 Dimensions (rear view, with Option 009, in millimeters, nominal)



Figure 4-3 Dimensions (side view, with Option 009, in millimeters, nominal)



Figure 4-4

Dimensions (front view, with Option 016, in millimeters, nominal)



Figure 4-5 Dimensions (rear view, with Option 016, in millimeters, nominal)



Figure 4-6 Dimensions (side view, with Option 016, in millimeters, nominal)

