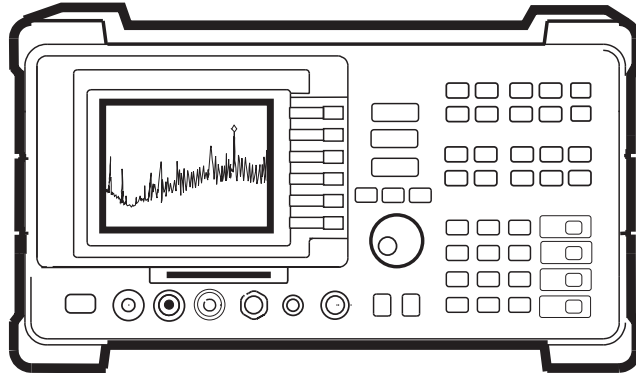


HP

8590EM

EMC Analyzers

## HP 8590EM Series EMC Analyzers and Precompliance Systems



HP 8591EM, HP 8593EM,  
HP 8594EM, HP 8595EM,  
HP 8596EM, HP 84100EM,  
and HP 84110EM

### Frequency specifications

#### Frequency range

HP 8591EM	9 kHz to 1.8 GHz
HP 8593EM	9 kHz to 22 GHz
Option 026	9 kHz to 26.5 GHz (APC 3.5)
Option 027	9 kHz to 26.5 GHz (Type N)
HP 8594EM	9 kHz to 2.9 GHz
HP 8595EM	9 kHz to 6.5 GHz
HP 8596EM	9 kHz to 12.8 GHz

#### Frequency reference

	Standard	Option 004
Aging rate	$\pm 2 \times 10^{-6}/\text{year}$	$\pm 1 \times 10^{-7}/\text{year}$
Temperature stability	$\pm 5 \times 10^{-6}$	$\pm 1 \times 10^{-8}$
Initial achievable accuracy	$\pm 5 \times 10^{-6}$	$\pm 2.2 \times 10^{-8}$

#### Frequency readout accuracy

(start, stop, center, marker)	$\pm(\text{Frequency readout} \times \text{frequency reference error} + \text{span accuracy} + 1\% \text{ of span} + 20\% \text{ RBW} + 100 \text{ Hz} \times N^*)$
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#### Marker counter accuracy

Frequency span $\leq 10 \text{ MHz} \times N^*$	$\pm(\text{Marker frequency} \times \text{frequency reference error} + \text{counter resolution} + 100 \text{ Hz} \times N^*)$
Frequency span $> 10 \times N^*$	$\pm(\text{Marker frequency} \times \text{frequency reference error} + \text{counter resolution} + 1 \text{ kHz} \times N^*)$

#### Frequency sweep time

Span 0 Hz, $>1 \text{ kHz}$	20 $\mu\text{s}$ to 100 s
Span 0 Hz (Option 101)	20 $\mu\text{s}$ to 100 s

#### Resolution bandwidths

	30 Hz to 3 MHz (1, 3, 10 sequence)
	200 Hz, 9 kHz, 120 kHz and 1 MHz (6dB) EMI bandwidths
Accuracy	$\pm 10 \%$

#### Video bandwidth range

1 Hz to 1 MHz in 1, 3, 10 sequence

#### Comb generator

HP 8593EM, 8596EM	100 MHz fundamental frequency
Accuracy	$\pm .007 \%$

#### Span accuracy

Span $\leq 10 \text{ MHz}$	$\pm 2 \%$ of span
Span $> 10 \text{ MHz}$	$\pm 3 \%$ of span

\* N = the LO harmonic number

## Amplitude Specifications

### Amplitude range

Displayed average noise level to + 137 dB $\mu$ V

### Maximum safe input level

(input attenuator set at  $\geq 10$  dB)

Average continuous power +30 dBm

Peak pulse power

HP 8591EM	+30 dBm
HP 8593EM, 8594EM, 8595EM and 8596EM	+50 dBm <10 $\mu$ s 1 % duty cycle $\geq 30$ dB input attenuation

### DC

HP 8591EM	25 Vdc
HP 8593EM	0 Vdc
HP 8594EM, 8595EM 8596EM	0 Vdc (dc coupled) 50 Vdc (ac coupled)

### Displayed average noise level

400 kHz to 1 GHz	30 Hz RBW	1 kHz RBW
HP 8591EM	-23 dB $\mu$ V	-8 dB $\mu$ V
HP 8593EM	-20 dB $\mu$ V	-5 dB $\mu$ V
HP 8594EM		
400 kHz to 5 MHz	-15 dB $\mu$ V	0 dB $\mu$ V
5 MHz to 1 GHz	-20 dB $\mu$ V	-5 dB $\mu$ V
HP 8595EM	-18 dB $\mu$ V	-3 dB $\mu$ V
HP 8596EM	-18 dB $\mu$ V	-3 dB $\mu$ V

### Frequency response

9 kHz to 1 GHz

HP 8591EM, 8593EM, 8594EM, 8595EM and 8596EM	$\pm 1.5$ dB
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### Calibrator output

300 MHz	-20 dBm $\pm 4$ dB
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## Option specifications

### Option 010 tracking generator

#### Frequency range

HP 8591EM	100 kHz to 1.8 GHz
HP 8593EM, 8594EM, 8595EM and 8596EM	9 kHz to 2.9 GHz

#### Output level

HP 8591EM	0 to -70 dBm
HP 8593EM, 8594EM, 8595EM and 8596EM	-1 to -66 dBm

#### Output flatness

HP 8591EM	$\pm 1.75$ dB
HP 8593EM, 8594EM, 8595EM and 8596EM	$\pm 2.0$ dB

#### Weight

HP 8591EM	14.5 kg (32 lbs)
HP 8593EM, 8594EM, 8595EM and 8596EM	16.4 kg (36 lbs)

## Input/Output

### Front panel connectors

Input	50 $\Omega$ type N
Option 026	APC 3.5 mm male
Option 027	50 $\Omega$ type N female
Cal output	50 $\Omega$ BNC -20 dBm 300 MHz
Comb out	100 MHz $\pm 0.007$ %, SMA
Probe power	+15 Vdc, -12.6 Vdc and Gnd (150 mA max each)

### Rear panel connectors

Earphone	1/8 inch monaural jack
Interface	HP-IB and parallel
Keyboard	5 pin DIN, HP C1405 Option ABA and Option 003 IBM AT keyboard compatible

High sweep in/out	BNC, high TTL = sweep
Aux video out	50 $\Omega$ BNC, 0-1 V
Aux IF output	50 $\Omega$ BNC, -10 to 60 DBM, 21.4 MHz
Ext. trigger input	BNC TTL levels, positive edge trigger
Ext. ref. in	50 $\Omega$ BNC, 10 MHz, -2 to + 10 dBm
10 MHz ref. output	50 $\Omega$ BNC, 10 MHz, 0 dBm
Aux interface	9 pin "D" subminiature
Monitor out	50 $\Omega$ BNC, NTSC, 15.75 kHz, 60 Hz or PAL, 15625 kHz, 50 Hz



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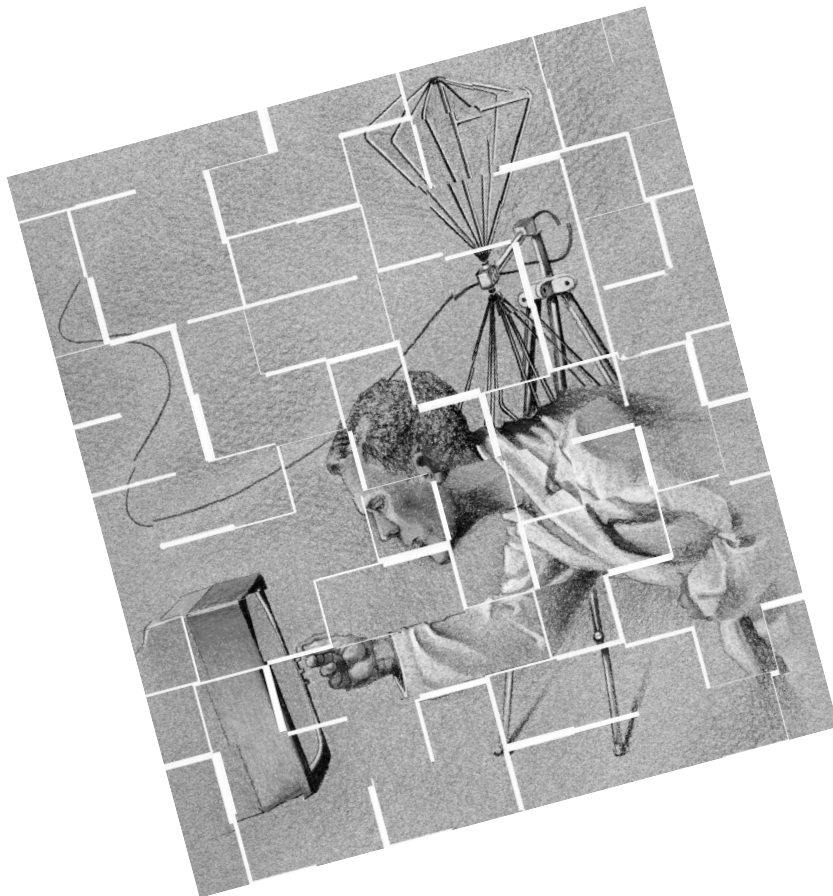
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