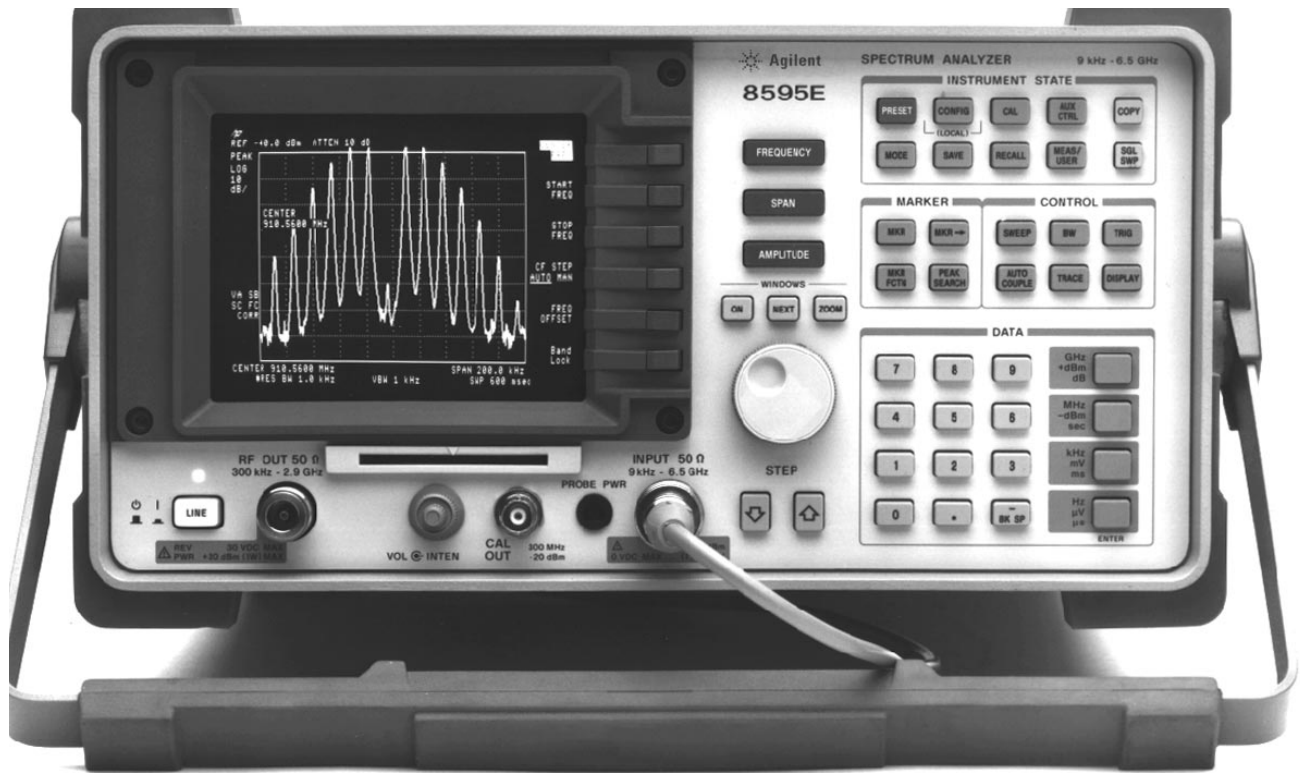




Agilent 8590C/E Series Spectrum Analyzers and Accessories

Configuration Guide



8591C Cable TV Analyzer (1 MHz to 1.8 GHz)
8591E RF Spectrum Analyzer (9 kHz to 1.8 GHz)
8593E Microwave Spectrum Analyzer (9 kHz to 22 GHz)

8594E RF Spectrum Analyzer (9 kHz to 2.9 GHz)
8595E RF Spectrum Analyzer (9 kHz to 6.5 GHz)
8596E Microwave Spectrum Analyzer (9 kHz to 12.8 GHz)

Agilent 8590C/E series options

Option	Description	Opt card slots required (4 max)	✓ = compatible					
			8591C	8591E	8593E	8594E	8595E	8596E
<input type="checkbox"/> 001	75 Ω input impedance	0	Std	✓				
<input type="checkbox"/> 003	Memory card reader	0	Std	Std	Std	Std	Std	Std
<input type="checkbox"/> 004	Precision frequency reference	0	Std	✓	✓	✓	✓	✓
<input type="checkbox"/> 009	Local oscillator and sweep + tune outputs (rear panel)	1 ¹⁸			✓	✓	✓	✓
<input type="checkbox"/> 010	Built-in tracking generator, 50 Ω (100 kHz–1.8 GHz)	0		✓				
<input type="checkbox"/> 010	Built-in tracking generator, 50 Ω (9 kHz–2.9 GHz)	1 ¹⁸			✓	✓	✓	✓
<input type="checkbox"/> 011	Built-in tracking generator, 75 Ω (100 kHz–1.8 GHz)	0	✓	✓				
<input type="checkbox"/> 012	DECT source	2			✓	✓	✓	✓
<input type="checkbox"/> 015	Protective soft tan carrying/operating case	0	✓	✓	✓	✓	✓	✓
<input type="checkbox"/> 016	Protective soft yellow operating/carrying case	0	Std	✓	✓	✓	✓	✓
<input type="checkbox"/> 026	Frequency extension to 26.5 GHz (APC 3.5 mm connector)	0			✓			
<input type="checkbox"/> 027	Frequency extension to 26.5 GHz (type-N connector)	0			✓			
<input type="checkbox"/> 030	Adds 85921B Cable TV Data Management S/W for FCC ²¹	0	✓					
<input type="checkbox"/> 040	Front panel protective cover w/CRT viewing hood	0		✓	✓	✓	✓	✓
<input type="checkbox"/> 041	GPIB interface and parallel printer interface ^{1,14}	0	✓	✓	✓	✓	✓	✓
<input type="checkbox"/> 042	Protective soft carrying case/backpack ¹³	0		✓	✓	✓	✓	✓
<input type="checkbox"/> 043	RS-232 interface and parallel printer interface ^{1,14}	0	Std	✓	✓	✓	✓	✓
<input type="checkbox"/> 050	Improved amplitude accuracy for NADC-TDMA/PCS bands	0		✓	✓	✓	✓	✓
<input type="checkbox"/> 051	Improved amplitude accuracy for PDC bands	0		✓	✓	✓	✓	✓
<input type="checkbox"/> 052	Improved amplitude accuracy for PHS band	0			✓	✓	✓	✓
<input type="checkbox"/> 053	Improved amplitude accuracy for CDMA/PCS bands	0		✓	✓	✓	✓	✓
<input type="checkbox"/> 078	Adds 85878A report generation software							
<input type="checkbox"/> 080	Delete manual set	0	✓	✓	✓	✓	✓	✓
<input type="checkbox"/> 101	Fast time-domain sweeps and Analog + display	1	Std	✓	✓	✓	✓	✓
<input type="checkbox"/> 102	AM/FM demod. with speaker and TV sync. trigger ^{2,16}	1	Std	✓	✓	✓	✓	✓
<input type="checkbox"/> 103	Quasi-peak detector and AM/FM demod with speaker ¹⁶	1		✓	✓	✓	✓	✓
<input type="checkbox"/> 105	Time-gated spectrum analysis	0		✓	✓	✓	✓	✓
<input type="checkbox"/> 107	TV receiver video tester ²²	1	✓	✓	✓	✓	✓	✓
<input type="checkbox"/> 110	CT2 demodulator ^{3,16}	1		✓	✓	✓	✓	✓
<input type="checkbox"/> 111	Group delay w/compatible tracking generator ²⁴	2			✓	✓	✓	✓
<input type="checkbox"/> 112	DECT demodulator ¹⁶	1			✓	✓	✓	✓
<input type="checkbox"/> 119	Noise figure ⁴	1	✓	✓	✓	✓	✓	✓
<input type="checkbox"/> 130	Narrow resolution bandwidths (30 Hz,100 Hz,300 Hz and 200 Hz EMI)	1	✓	✓	✓	✓	✓	✓
<input type="checkbox"/> 140	Narrow resolution bandwidths/precision frequency reference (Opt 004 and 130)	1		✓	✓	✓	✓	✓
<input type="checkbox"/> 151	DSP, fast ADC, and digital demodulator ¹⁹	2		✓ ¹⁷	✓	✓	✓	✓
<input type="checkbox"/> 160	PDC, PHS, NADC, and CDMA firmware for Option 151 ²⁵	0		✓ ¹⁷	✓	✓	✓	✓

Agilent 8590C/E series options (continued)

Option	Description	Opt card slots required (4 max)	✓ = compatible					
			8591C	8591E	8593E	8594E	8595E	8596E
<input type="checkbox"/> 163	GSM900/DCS1800 firmware for Option 151 ²⁵	0			✓	✓	✓	✓
<input type="checkbox"/> 180	TV picture on screen (NTSC, PAL, and SECAM) ²²	1	✓	✓	✓	✓	✓	✓
<input type="checkbox"/> 190	DVB-C RF and modulation quality measurements	3						
<input type="checkbox"/> 195	R-S and true BER and PID statistics data measurements	1						
<input type="checkbox"/> 301	TV sync. trigger capability, fast time domain sweeps, AM/FM demodulator, and Analog + display (Option 101 and 102) ¹⁶	2	Std	✓	✓	✓	✓	✓
<input type="checkbox"/> 701	Delete TV sync. trigger capability, fast time domain sweeps, AM/FM demodulator and Analog + display (Options 101 and 102)	-2	✓					
<input type="checkbox"/> 703	Delete quasi-peak detector and AM/FM demodulator	-1						
<input type="checkbox"/> 704	Delete precision frequency reference	0	✓					
<input type="checkbox"/> 711	50/75 Ohm matching pad with 100V DC block	0		✓	✓	✓	✓	✓
<input type="checkbox"/> 908	Rack mount kit without handles		✓	✓	✓	✓	✓	✓
<input type="checkbox"/> 909	Rack mount kit with handles		✓	✓	✓	✓	✓	✓
<input type="checkbox"/> 910	Additional user's guide, calibration guide, and quick reference guide		✓	✓	✓	✓	✓	✓
<input type="checkbox"/> 915	Component level information and service guide		✓	✓	✓	✓	✓	✓
<input type="checkbox"/> AB_	Quick reference guide in local languages ⁵		✓ ¹⁰	✓	✓	✓	✓	✓

Warranty and service

<input type="checkbox"/> R-51B	Return-to-Agilent warranty and service plan ^{6,26}		✓	✓	✓	✓	✓	✓
<input type="checkbox"/> R-50C-001	Standard calibration ^{6,27}		✓	✓	✓	✓	✓	✓
<input type="checkbox"/> R-50C-002	Standards-compliant calibration ²⁷			✓	✓	✓	✓	✓
<input type="checkbox"/> B70	BenchLink spectrum analyzer	0	✓	✓	✓	✓	✓	✓

Memory cards

<input type="checkbox"/> 85700A	32 Kbyte blank memory card (RAM) ⁷		✓	✓	✓	✓	✓	✓
<input type="checkbox"/> 85702A	128 Kbyte blank memory card (RAM) ⁷		✓	✓	✓	✓	✓	✓
<input type="checkbox"/> 85704A	256 Kbyte blank memory card (RAM) ⁷		✓	✓	✓	✓	✓	✓
<input type="checkbox"/> 85705A	512 Kbyte blank memory card (RAM) ⁷		✓	✓	✓	✓	✓	✓

PC software

<input type="checkbox"/> 85921B	Cable TV data management software for FCC ²¹		✓	✓ ²³	✓ ²³	✓ ²³	✓ ²³	✓ ²³
<input type="checkbox"/> E4444A	BenchLink spectrum analyzer		✓	✓	✓	✓	✓	✓

Agilent 8590C/E series options

Ordering information

8590E series spectrum analyzers

- 8591E** 9 kHz to 1.8 GHz
- 8593E** 9 kHz to 22 GHz
- 8594E** 9 kHz to 2.9 GHz
- 8595E** 9 kHz to 6.5 GHz
- 8596E** 9 kHz to 12.8 GHz

8591C cable TV analyzer

- 8591C** 9 kHz to 1.8 GHz

Options

To add options to a product, use the following ordering scheme:

- Model: 859xx
(xx = 1E, 3E, 4E, 5E, 6E or 1C)
- Model options: 859xx-Option 1
859xx-Option 2

Retrofit kits

(For option installation after analyzer purchase)

To order retrofit kits, use part number listed below:

- Model: 8590E (0 = 1, 3, 4, 5 or 6)

8590E hardware retrofit kits

- 5062-6458** Retrofit kit for fast time domain sweeps
- 5062-6457** Retrofit kit for TV trigger and AM/FM demod
- 5062-6456** Retrofit kit for memory card reader
- 5062-6459** Retrofit kit for precision frequency reference
- 5063-0244** Retrofit kit for CT2 demodulator card
- 5063-0651** Retrofit kit for TV receiver/video tester for 8590E models, prefix greater than 3303A
- 5063-0652** Retrofit kit for TV receiver/video tester for 8590E models, prefix less than 3303A
- 5063-0653** Retrofit kit for TV receiver/video tester for 8591C model only
- 5063-0649** R07/R17 Rebuild kit for TV receiver/video tester for 8591C model only
- 5062-6463** Retrofit kit for 50 Ω tracking generator, 8590B/D/L models only
- 5062-6460** Retrofit kit for 50 Ω tracking generator, 8591A/8591E models only
- 5062-6479** Retrofit kit for 75 Ω tracking generator, 8590B/D/L models only
- 5062-6480** Retrofit kit for 75 Ω tracking generator, 8591A/C/E models only
- 5063-0654** Retrofit kit for counterlock board for 8590D/L models only
- 5062-8218** Retrofit kit for time-gated spectrum analysis for 8590A/E models
- 5063-0247** Retrofit kit for noise figure card for 8590E models
- 5062-6454** Retrofit kit for GPIB interface, all models < serial prefix 3523A
- 5062-6455** Retrofit kit for RS-232 interface, all models < serial prefix 3523A
- 08590-60349** Retrofit kit for Parallel interface, 8590E models < serial prefix 3523A
- 08590-60380** Retrofit kit for GPIB/Parallel interface, 8590L/C/E models, ser. prefix \geq 3523A

- 08590-60381** Retrofit kit for RS232/Parallel interface, 8590L/C/E models, ser. prefix \geq 3523A
- 5063-0246** Retrofit kit for narrow resolution BW's, 8590E models
- 08590-60336** Retrofit kit for improved NADC amplitude accuracy, 8590E models
- 5063-0679** Retrofit kit for improved PDC amplitude accuracy, 8590E models
- 5063-0680** Retrofit kit for improved PHS amplitude accuracy, 8590E models
- 5063-0681** Retrofit kit for improved CDMA amplitude accuracy, 8590E models
- 08591-60099** Retrofit kit for DSP firmware ONLY (PDC/PHS/NADC/CDMA), 8590E models
- 5062-0575** Retrofit kit for DSP firmware ONLY (GSM/DCS1800), 8590E models
- 08591-60100** Retrofit kit for 151/160 digital demod, (PDC/PHS/NADC/CDMA), 8590E models
- 5062-0576** Retrofit kit for 151/163 digital demod, (GSM/DCS1800), 8590E models
- 08590-60389** Retrofit kit for TV picture (no sound), 8590E models
- 11946-60001** Retrofit kit for quasi-peak detector, all 8590E models
- 11946-60002** Retrofit kit for quasi-peak detector, 8591A model only
- 11946-60003** Retrofit kit for quasi-peak detector, 8593A - 95A models only

8590E DLP retrofit kits

- 11770-80023**²⁰ Link measurement personality
- 85630-00008** 50-ohm scalar transmission/reflection test set
- 85713-10004**⁷ Digital radio measurement personality
- 85714-10006**⁷ Scalar measurement personality
- 85718-10010**¹¹ NADC/PCS TDMA measurement personality
- 85719-10006** Noise figure measurement personality
- 85720-10011**¹¹ PDC measurement personality
- 85721-10042**^{7,8,10} CATV measurement personality - NTSC
- 85721-10043**^{7,8,10} CATV measurement personality - PAL
- 85721-10044**^{7,8,10} CATV measurement personality - NTSC - Japan channel plan
- 85721-10045**^{7,8,10} CATV measurement personality - SECAM-L
- 85721-10046**^{7,8,10} CATV measurement personality - NTSC - Taiwanese localization
- 85723-90010** DECT measurement personality
- 85724-90009** Broadcast measurement personality
- 85725-10007** CDMA measurement personality
- 85725-10008** CDMA measurement personality - Japanese localization
- 85726-10006** PHS measurement personality
- 85727-90004** GSM multi-band transmitter measurement personality

8591C retrofit kits

- 8591CU-R01** Retrofit kit for fast time domain sweeps
- 8591CU-R02** Retrofit kit for TV trigger and AM/FM demod
- 8591CU-R04** Retrofit kit for precision frequency reference
- 8591CU-R07** Retrofit kit for TV receiver/video tester
- 8591CU-R11** Retrofit kit for 1.8 GHz, 75 Ω tracking generator
- 8591CU-R19** Retrofit kit for noise figure card
- 8591CU-R21** Retrofit kit for GPIB interface
- 8591CU-R23** Retrofit kit for RS-232 interface
- 8591CU-R24** Retrofit kit for parallel printer interface
- 8591CU-R30** Retrofit kit for narrow resolution bandwidths
- 8591CU-R41** Retrofit kit for GPIB and parallel interfaces
- 8591CU-R80** Retrofit kit for TV picture on screen

Agilent 8590C/E series accessories

For scalar measurements

- 85630-00008** Scalar 50 Ω transmission/reflection test set
- 86205A** 50 Ω RF bridge (type-N(f), 300 kHz to 6 GHz, 1.5 dB +0.1 dB/GHz insertion loss)
- 86207A** 75 Ω RF bridge (type-N(f), 300 kHz to 3 GHz, 1.5 dB +0.1 dB/GHz insertion loss)

For EMC measurements

- 11945A** Close field probe set (9 kHz to 1 GHz) (with Option E51)¹⁶
- 11947A** Transient limiter (BNC(f) to type-N(m), 9 kHz to 200 MHz, 10 dB insertion loss)

Printers and accessories

Most Hewlett-Packard DeskJet and LaserJet (PCL 3 compatible) printers are compatible with 8590 series spectrum analyzers. Printer compatibility chart is on the internet web site at www.agilent.com/find/pcg/

- 10833A** GPIB cable (1 meter)
- 24542U** RS-232 cable 3 meter (9 pin F to 9 pin F) Option 043 only (for RS-232 9 pin PC connection to analyzer)
- 24542G** RS-232 cable 3 meter (25 pin M to 9 pin F) Option 043 only (for RS-232 25 pin PC or printer connection to analyzer)
- 24542M** RS-232 cable 3 meter (25 pin M to 9 pin F) Option 043 only (for RS-232 25 pin modem connection to analyzer)
- C2932A** RS-232 cable 3 meter (9 pin M to 9 pin F) Option 043 only (for serial 9 pin LaserJet 4P/4Plus connection to analyzer)
- 13242G** RS-232 cable (5 meter) (for Option 023 only)
- C2950A** Parallel printer cable (2 meter)
- ITEL-45CHVUB** GPIB/Parallel converter (North America, Japan, Korea, and Taiwan)
- ITEL-45CHVEB** GPIB/Parallel converter (Continental Europe, U.K., Australia, and South Africa) (requires F1011A AC adapter)

Amplifiers and preamplifiers

- 8447D** Preamplifier (100 kHz to 1.3 GHz, > 25 dB gain)
- 8449B** Preamplifier (1 GHz to 26.5 GHz, 30 dB gain)
- 10855A** Broadband preamplifier (2 MHz to 1300 MHz, 22 dB gain)
- 85905A** 75 Ω preamplifier (45 MHz to 1GHz, 20 dB gain)
- 87405A** Amplifier (10 MHz to 3 GHz, 22 dB gain)
- 87415A** Amplifier (2 GHz to 8 GHz, 25 dB gain)

Other accessories

- D4950A** Keyboard
- 346B** Noise source (BNC(f) to APC 3.5(m), 10 MHz to 18 GHz)
- 11693A** Limiter (type-N(f) to type-N(m), 0.1 GHz to 12.4 GHz, < 2.0 dB insertion loss)
- 11694A** 75/50 Ω matching transformer (BNC(f) to BNC(m), 3 MHz-500 MHz, < .75 dB insertion loss)
- 0955-1020** 50 to 75 Ω adapter. Same as Option 711
- 11742A** High frequency blocking capacitor (3.5mm(f to m)), 10 MHz to 26.5 GHz, .35 dB IL < 12.4 GHz, .7 dB IL < 26.5 GHz)
- 11852B** Order with Option C04, 75/50 Ω min. loss pad (type-N(f) to type-N(m), DC to 2 GHz, 5.7 dB insertion loss)

- 11867A** RF limiter (type-N(f) to type-N(m), DC to 1.8 GHz, < .75 dB insertion loss)
- 11930B** Power limiter (5 MHz to 6 GHz)
- 41800A** Active probe (5 Hz to 500 MHz)
- 85024A** High frequency probe (300 kHz to 3 GHz)
- 85901A** Portable AC power source
- 85902A** Burst carrier trigger
- 1420-0383** Memory card battery (CR 2016)
- 1494-0060** Rack slide for rack mount
- 08590-60369** RS-232/parallel connector assembly to convert Option 041 (GPIB) to Option 043 (RS-232)
- 08590-60368** GPIB/parallel connector assembly to convert Option 043 (RS-232) to Option 041 (GPIB)
- 9211-5604** Transit case
- 5062-4841** Rack mount without handles¹² (centers instrument in rack)
- 5062-4840** Rack mount with handles¹² (centers instrument in rack)
- 5062-8240** Rack mount with handles¹² (mounts instrument left of center)
- 5062-8241** Rack mount without handles¹² (mounts instrument left of center)
- 5180-9055** CRT viewing hood (sun shield)
- 5063-0654** Frequency accuracy retrofit kit for 8590B and 8590D

Agilent 8590 C/E/L/Q-series manuals

- 08590-90234** 8590 E/L series user's guide
- 08590-90243** 8590 E/L series quick reference guide
- 08590-90235** 8590 series programmer's guide
- 5960-6588** 8590 E/L series quick reference guide in French
- 5960-6590** 8590 E/L series quick reference guide in German
- 5960-6592** 8590 E/L series quick reference guide in Italian
- 5960-6594** 8590 E/L series quick reference guide in Spanish
- 5960-6596** 8590 E/L series quick reference guide in Japanese
- 08590-90260** 8590 E/L series user's guide for Taiwan in Chinese
- 08590-90261** 8590 E/L series user's guide for China in Chinese
- 5962-5001** 8590 E/L series user's guide in French
- 5962-5002** 8590 E/L series user's guide in German
- 08590-90286** 8590 E/L series user's guide in Italian
- 5962-5004** 8590 E/L series user's guide in Spanish
- 08590-90269** 8590L calibration guide
- 08594-90183** 859x C/E series calibration guide
- 08592-90082** 8592L calibration guide
- 5963-2950** 8590 C/E/L/Q Series assembly level repair guide
- 5963-2951** 8590 C/E/L/Q Series component level repair guide
- 08591-90129** 8591C Cable TV analyzer user's guide, spectrum analyzer reference
- 08591-90176** 8591C Cable TV analyzer user's guide, cable TV measurements
- 08591-90130** 8591C getting started and quick reference guide

Agilent 8590 C/E series notes

1. Programming manual included
2. Options 101 and 102 required for TV sync trigger capability. See Option 301.
3. 85717A measurement personality required
4. 85719A measurement personality required
5. ABF Quick reference and user's guides in French
ABD Quick reference and user's guides in German
ABZ Quick reference and user's guides in Italian
ABE Quick reference and user's guides in Spanish
ABJ Quick reference guide in Japanese
AB0 Quick reference guide for Taiwan in Chinese
AB2 Quick reference guide for China in Chinese
6. An incremental cost will be added to the base price of Options R-51B and R-50C for an 859xC/E containing Options 010, 011, or 130.
7. Option 003 (card reader) on the 8590L, 8592L and 8594L is required.
8. Video tests not supported on 8590L, 8592L or 8594L.
9. Option E51 comes with preamplifier, carrying case, cables and connectors.
10. Cable TV measurements are formatted for local country's cable TV standards.
11. Modulation accuracy measurements not supported on 8591E.
12. Rack height is 8.75 inches.
13. Not for analyzer operation while in carrying case
14. Options 021, 023 and 024 or 041 and 043 cannot be combined.
15. Not compatible with Option 107
16. Not compatible with other demodulator options (102, 103, 110, 112, or 301).
17. Compatibility with 8591E limited to CDMA applications only
18. If Options 009 and 010 are combined on the 8593E/94E/95E/96E or 8590 EM series; only one option card slot is required.
19. Not compatible with Options 101 and 301
20. Requires Option 111. Not compatible with 8591E.
21. NTSC Cable TV analyzers only
22. Option 107 is not compatible with Option 180.
23. 85721 Cable TV measurement personality required
24. 11770A Link measurements personality required. Do not order Option 010 with Option 111.
25. Option 160 and 163 are not compatible.
26. For warranty and service of 5 years, please order 60 months of R-51B (quantity = 60). Standard warranty is 12 months.
27. For 3 years, order 36 months of the appropriate calibration plan. For 5 years, specify 60 months.

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