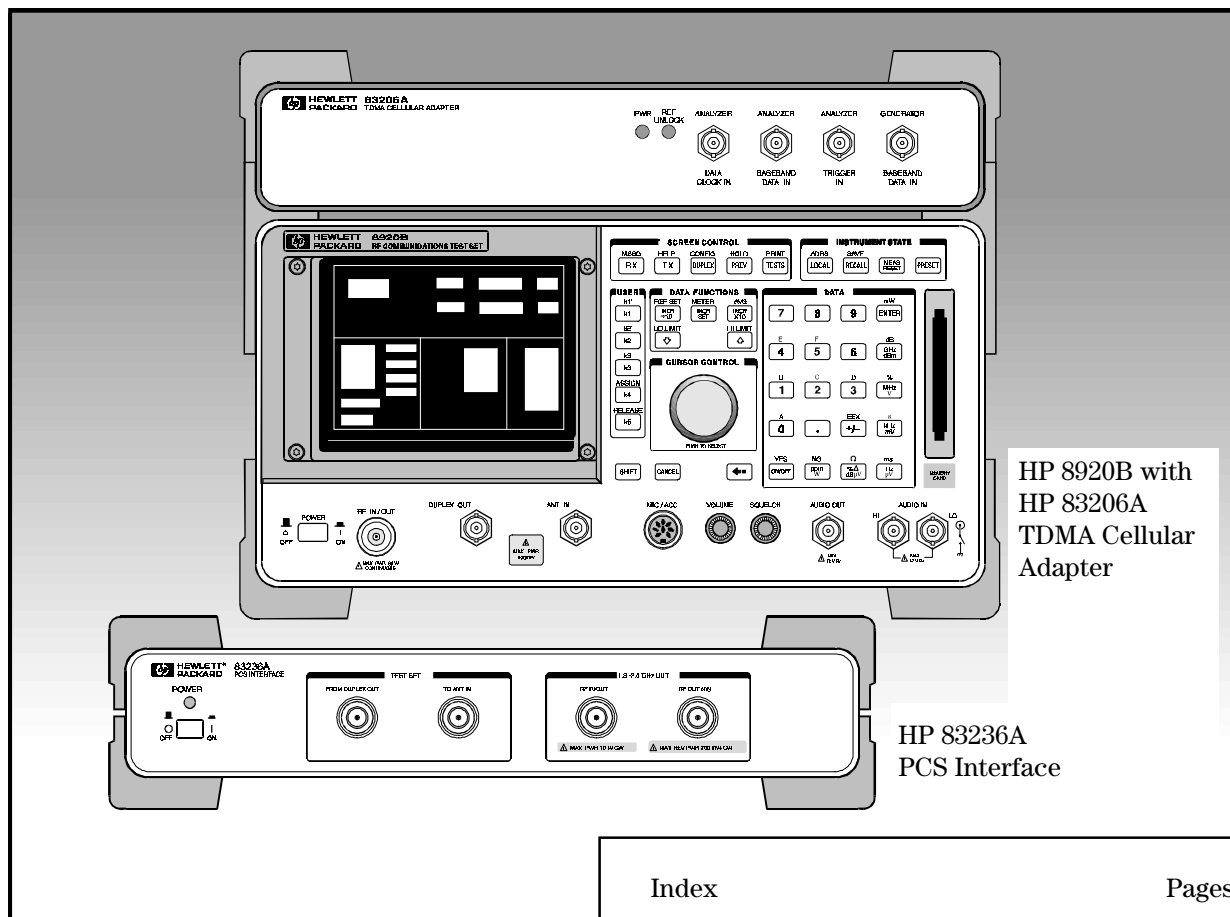


HP 8920B RF Communications Test Set HP 8920B Option 800 for TDMA Test

Configuration Guide

*Improve throughput
and quality*



HP 8920B with
HP 83206A
TDMA Cellular
Adapter

HP 83236A
PCS Interface

For additional HP 8920B information, refer to the following literature:

- **Brochure:**
literature number 5965-1571E
- **Technical Specifications:**
literature number 5965-1573E
- **Price List:**
literature number 5965-1574EUS

Index	Pages
List of options	2
Configuration examples	2
Analog cellular phone test	3 - 6
Digital cellular phone test	7 - 9
AM, FM, Φ M, cordless phone test	10 - 13
FM and trunked mobile radio test	14 - 15
VSWR, cable fault test	16
Additional options and accessories	17 - 18
Upgrades and retrofits	19
PCS upgrade	19

The HP 8920B can be configured for land mobile, trunked, cordless, and cellular phone test applications. For flexibility in specifying a solution to meet your exact needs, follow the recommendations in this configuration guide to determine the appropriate hardware, software, accessories, and support options for radio and phone testing with the HP 8920B.

AMPS test configuration example

Sample order for AMPS cellular phone testing with software and three-year return repair service.

HP 8920B RF communications test set..... qty. 1
 Option 004 (required) qty. 1
 Option W30 return repair service qty. 1

HP 11807E software qty. 1
 Option 004 AMPS/EAMPS/NAMPS qty. 1

AMPS/NAMPS/DAMPS/DCCH test configuration example

Sample order for AMPS, NAMPS, DAMPS (IS-54), and DCCH (IS-136) cellular phone testing with optional spectrum analyzer, 10 W to 50 μ W power measurement range, C-message weighting filter, 6 kHz bandpass filter and three-year return repair service.

HP 8920B RF communications test set..... qty. 1
 Option 001 (required) H.S. timebase qty. 1
 Option 004 (required) signaling qty. 1
 Option 006 (required) 10W to 50 μ W power range qty. 1
 Option 051 (required) dual-mode conn. ... qty. 1
 Option 800 (required) TDMA adapter qty. 1
 Option 102 spectrum analyzer qty. 1
 Option 013 C message weighting filter qty. 1
 Option 014 6 kHz bandpass filter qty. 1
 Option W30 return repair service qty. 1

HP 83206A (for return repair service) qty. 0
 Option W30 (for return repair service) qty. 1

HP 11807E software qty. 1
 Option 014 AMPS/NAMPS/DAMPS/DCCH . qty. 1

RF communications test set options

HP 8920B RF communications test set

Options

- 001** High stability timebase
- 004** Tone/digital signaling
- 006¹** 10 W to 50 μ W power measurement range
- 007¹** Low-level RF power measurements
- 010²** 400 Hz high pass filter
- 011²** CCITT weighting filter
- 012²** 4 kHz bandpass filter
- 013²** C-Message weighting filter
- 014²** 6 kHz bandpass filter
- 020** Radio interface card
- 031** Delete handle and cover
- 051** Dual-mode rear panel connectors
- 102** Spectrum analyzer with tracking generator and ACP (adjacent channel power)
- 500³** HP 83201B Opt. 003 TDMA cellular adapter (IS-54)
- 800³** HP 83206A TDMA cellular adapter (IS-54, IS-136)
- H08¹** High-level RF power measurements to 100 watts continuous

Radio test software options

HP 11807E radio test software for HP 8920B

Options

- 001** North American FM tests
- 002** European Φ M tests
- 003** AM tests
- 004** AMPS/EAMPS/NAMPS cellular phone tests
- 005** TACS/ETACS cellular phone tests
- 007** JTACS/NTACS cellular phone tests
- 008** TDMA dual-mode (DAMPS, IS-54) cellular phone tests
- 009** AMPS/EAMPS/NAMPS/TDMA dual-mode (DAMPS, IS-54) cellular phone tests
- 010** LTR trunked radio tests
- 011** EDACS trunked radio tests
- 014** AMPS/NAMPS/DAMPS/DCCH mobile test software
- 100** System support tests

HP 11807A radio test software for HP 8920B

Option

- H29** NMT cellular phone test

AMPS/EAMPS/NAMPS cellular phone test

HP 8920B RF communications test set	HP 8920B	<input type="checkbox"/>
• Required		
Tone/digital signaling	Option 004	<input type="checkbox"/>
• Recommended		
High stability timebase	Option 001	<input type="checkbox"/>
10 W to 50 μ W power measurement range ¹	Option 006	<input type="checkbox"/>
C-Message weighting filter ²	Option 013	<input type="checkbox"/>
6 kHz bandpass filter ²	Option 014	<input type="checkbox"/>
• Additional performance options		
Spectrum analyzer with tracking generator and adjacent channel power.....	Option 102	<input type="checkbox"/>
Radio interface card	Option 020	<input type="checkbox"/>

SOFTWARE

HP 11807E radio test software	HP 11807E	<input type="checkbox"/>
AMPS/EAMPS/NAMPS cellular phone test option	Option 004	<input type="checkbox"/>

Radios supported:

- AMPS, EAMPS, and NAMPS cellular phones

Standard derived from:

- Advanced mobile phone service (AMPS)
- Electronic Industries Association (EIA) [EIA/TIA-553 and EIA-IS-19B] cellular radio specifications with modifications for narrowband systems (NAMPS)[EIA IS-89]

AMPS/EAMPS/NAMPS cellular phone performance tests:

CP call processing registration	TX frequency error	RX expander response
CP call processing page	TX RF power output	RX audio frequency response
CP call processing release	TX modulation deviation limiting	RX audio distortion
CP call processing origination	TX audio frequency response	RX hum and noise
CP call processing hook flash	TX audio distortion	RX SINAD
CP flow chart (manual phone test)	TX signaling tone/DST	RX FVC order message error rate
	TX FM hum and noise	RX MRI
	TX SAT/DSAT	RX quick general test
	TX RVC data deviation	
	TX compressor response	
	TX current drain	
	TX DTMF frequency error	
	TX switch channels	
	TX quick general test	
	TX/RX quick functional test (no audio)	

¹ HP 8920Bs cannot be configured with more than one input range option. Do not order options 006, 007, H08 (or any combination of these options) concurrently.

² A maximum of two filter options (010 through 014) can be added to each HP 8920B.

³ HP 8920Bs cannot be configured with more than one TDMA cellular adapter. Do not order options 500 and 800 concurrently.

TACS/ETACS cellular phone test

- HP 8920B RF communications test set** HP 8920B
- Required
 - Tone/digital signaling Option 004
 - Recommended
 - High stability timebase Option 001
 - 10 W to 50 μ W power measurement range¹ Option 006
 - CCITT weighting filter² Option 011
 - 6 kHz bandpass filter² Option 014
 - Additional performance options
 - Spectrum analyzer with tracking generator and adjacent channel power Option 102
 - Radio interface card Option 020

SOFTWARE

- HP 11807E radio test software** HP 11807E
- TACS/ETACS cellular phone test option Option 005

Radios supported:

- TACS and ETACS cellular phones

Standard derived from:

- Total Access Communication System (TACS)

TACS/ETACS cellular phone performance tests:

CP call processing registration	TX frequency error	RX expander response
CP call processing page	TX carrier power	RX audio frequency response
CP call processing release	TX peak frequency deviation	RX audio distortion
CP call processing origination	TX audio frequency response	RX hum and noise
CP call processing hook flash	TX audio distortion	RX SINAD
CP TACS-2 page and release	TX signaling tone	RX FVC order message error rate
CP flow chart (manual phone test)	TX FM hum and noise	RX quick general test
	TX SAT frequency error and deviation	
	TX wideband data deviation	
	TX compressor response	
	TX current drain	
	TX DTMF frequency error	
	TX switch channels	
	TX quick general test	
	TX/RX quick functional test (no audio)	

¹ HP 8920Bs cannot be configured with more than one input range option. Do not order options 006, 007, H08 (or any combination of these options) concurrently.

² A maximum of two filter options (010 through 014) can be added to each HP 8920B.

JTACS/NTACS cellular phone test

- HP 8920B RF communications test set**..... HP 8920B
- Required
 - Tone/digital signaling Option 004
 - Recommended
 - High stability timebase Option 001
 - 10 W to 50 μ W power measurement range¹ Option 006
 - CCITT weighting filter ² Option 011
 - Additional performance options
 - Spectrum analyzer with tracking generator and adjacent channel power Option 102
 - Radio interface card Option 020

SOFTWARE

- HP 11807E radio test software** HP 11807E
- JTACS/NTACS cellular phone test option Option 007

Radios supported:

- JTACS and NTACS cellular phones

Standard derived from:

- Total Access Communications System for Japan (JTACS) mobile station compatibility specification, version five with modifications for narrowband systems (NTACS).

JTACS/NTACS cellular phone performance tests:

- | | | |
|-----------------------------------|--|---------------------------------|
| CP call processing registration | TX frequency error | RX expander response |
| CP call processing page | TX carrier power | RX audio frequency response |
| CP call processing release | TX peak frequency deviation | RX audio distortion |
| CP call processing origination | TX audio frequency response | RX hum and noise |
| CP call processing hook flash | TX audio distortion | RX SINAD |
| CP flow chart (manual phone test) | TX DTMF frequency error | RX FVC order message error rate |
| | TX signaling tone/DST | RX quick general test |
| | TX FM hum and noise | |
| | TX SAT/DSAT | |
| | TX RVC data deviation | |
| | TX compressor response | |
| | TX current drain | |
| | TX switch channels | |
| | TX quick general test | |
| | TX/RX quick functional test (no audio) | |

NMT cellular phone test

- HP 8920B RF communications test set**..... HP 8920B
- Required
 - Tone/digital signaling Option 004
 - Recommended
 - High stability timebase Option 001
 - CCITT weighting filter ² Option 011
 - 4 kHz bandpass filter ² Option 012
 - Additional performance options
 - Spectrum analyzer with tracking generator and adjacent channel power..... Option 102
 - Radio interface card Option 020

SOFTWARE

- HP 11807A radio test software** HP 11807A
- NMT cellular phone test option Option H29

Radios supported:

- 450 and 900 MHz NMT cellular phones

Standard derived from:

- Nordic mobile telephone (NMT) [DOC.1.1980, DOC.3.1979, and DOC-900-3.1985]

NMT cellular phone performance tests:

CP roaming updating	TX frequency error	RX RF sensitivity
CP call MTX to MS	TX carrier power	RX amplitude characteristic of limiter
CP clearing from MTX	TX frequency deviation	RX harmonic distortion
CP call MS to MTX	TX limit characteristic of modulator	RX AM suppression
CP clearing from MS	TX audio frequency response	RX audio frequency response
CP switch channel	TX harmonic distortion	RX noise and hum
CP flow chart	TX residual modulation	RX quick
CP all call processing	TX audio muting	
	TX mic. sensitivity	RT current drain
	TX supervisory signal deviation	RT quick functional audio
	TX quick	

¹ HP 8920Bs cannot be configured with more than one input range option. Do not order options 006, 007, H08 (or any combination of these options) concurrently.

² A maximum of two filter options (010 through 014) can be added to each HP 8920B.

³ HP 8920Bs cannot be configured with more than one TDMA cellular adapter. Do not order options 500 and 800 concurrently.

⁴ Not compatible with HP 8920B Option 500.

⁵ Not compatible with HP 8920B Option 800.

AMPS/EAMPS/NAMPS/DAMPS/DCCH cellular phone test (800 MHz)

HP 8920B RF communications test set	HP 8920B	<input type="checkbox"/>
• Required		
High stability timebase	Option 001	<input type="checkbox"/>
Tone/digital signaling	Option 004	<input type="checkbox"/>
10 W to 50 μ W power measurement range ¹	Option 006	<input type="checkbox"/>
Dual-mode rear panel connectors	Option 051	<input type="checkbox"/>
HP 83206A TDMA cellular adapter ³	Option 800	<input type="checkbox"/>
• Recommended		
C-Message weighting filter ²	Option 013	<input type="checkbox"/>
6 kHz bandpass filter ²	Option 014	<input type="checkbox"/>
• Additional performance options		
Spectrum analyzer with tracking generator and adjacent channel power	Option 102	<input type="checkbox"/>
Radio interface card	Option 020	<input type="checkbox"/>

SOFTWARE

HP 11807E radio test software	HP 11807E	<input type="checkbox"/>
AMPS/NAMPS/DAMPS/DCCH mobile test option ⁴	Option 014	<input type="checkbox"/>

Radios supported:

- AMPS, NAMPS, EAMPS, DAMPS (IS-54), and DCCH (IS-136) cellular phones

Standard derived from:

- Electronic Industries Association (EIA) [EIA/TIA-553 and EIA-IS-19B] cellular radio specifications with modifications for narrowband systems (NAMPS) [EIA IS-89]
- TIA/EIA/IS-137 800 MHz TDMA Cellular Radio Interface, Minimum Performance Standards for Mobile Stations
- TIA/EIA/IS-55-A Recommended Minimum Performance Standards of 800 MHz Dual-mode Mobile Stations

AMPS/NAMPS/DAMPS/DCCH cellular phone test (preliminary)

CP registration on analog control channel	RXA audio distortion	TXA RF power output
CP registration on digital control channel	RXA audio frequency response	TXA RF power output vs. channel (plotted)
CP page	RXA expander	TXA signaling tone frequency and deviation
• Analog control channel to analog voice channel	RXA FVC order message error rate	TXA SAT frequency and deviation
• Analog control channel to digital traffic channel	RXA hum and noise	TXA wideband data deviation
• Digital control channel to analog voice channel	RXA mobile reported interference (MRI)	
• Digital control channel to digital traffic channel	RXA RF sensitivity (SINAD)	
CP origination	RXA RF sensitivity vs. channel (plotted)	
• Analog control channel to analog voice channel		TXD adjacent channel power
• Analog control channel to digital traffic channel	RXD receiver sen. (channel quality BER, RSSI)	TXD calibrate RF power (non-Opt. 006 only)
• Digital control channel to analog voice channel	RXD receiver sensitivity (loopback), includes:	TXD modulation accuracy including:
• Digital control channel to digital traffic channel	• BER	• Error vector magnitude (EVM)
CP release to analog control channel	• FACCH WER	• Peak error vector magnitude (EVM)
CP release to digital control channel	• SACCH WER	• Phase error
CP call processing handoffs including:	• Speech WER	• Magnitude error
• Digital to digital (D-D)		• Burst amplitude droop
• Digital to analog (D-A)	TXA audio distortion	• I/Q origin offset
• Analog to digital (A-D)	TXA audio frequency response	• Carrier frequency error
• Analog to analog (A-A)	TXA compressor response	TXD modulation accuracy (10 burst), including:
• Analog to narrow analog (A-NA)	TXA current drain	• Error vector magnitude (EVM)
• Narrow analog to analog (NA-A)	TXA digital signaling tone (DST) deviation and code	• Peak error vector magnitude (EVM)
CP hook flash	TXA DTMF key pad and DTMF frequency error	• Phase error
	TXA DSAT deviation, closure, and phase jitter	• Magnitude error
	TXA FM hum and noise	• Burst amplitude droop
MISC battery life test, transmit	TXA frequency error	• I/Q origin offset
MISC battery life test, standby	TXA modulation deviation limiting	• Carrier frequency error
MISC digital talk back		TXD RF power output
MISC no audio functional		TXD RF power output vs. channel (plotted)
MISC quick test		TXD time alignment

AMPS/EAMPS/NAMPS/DAMPS cellular phone test (800 MHz)

- HP 8920B RF communications test set**..... HP 8920B
- Required
 - High stability timebase Option 001
 - Tone/digital signaling Option 004
 - Dual-mode rear panel connectors Option 051
 - HP 83201B Option 003 TDMA cellular adapter ³ Option 500
 - Recommended
 - 10 W to 50 μ W power measurement range ¹ Option 006
 - C-Message weighting filter ² Option 013
 - 6 kHz bandpass filter ² Option 014
 - Additional performance options
 - Spectrum analyzer with tracking generator and adjacent channel power..... Option 102
 - Radio interface card Option 020

SOFTWARE

- HP 11807E radio test software** HP 11807E
- AMPS/EAMPS/NAMPS/TDMA dual-mode (DAMPS, IS-54) cellular phone test option ⁵ Option 009

Radios supported:

- AMPS/EAMPS/NAMPS/North American TDMA dual-mode (DAMPS, IS-54) cellular phones

Standard derived from:

- Electronic Industries Association (EIA) [EIA/TIA-553 and EIA-IS-19B] cellular radio specifications with modifications for narrowband systems (NAMPS)[EIA IS-89]
- TIA/EIA/IS-55-A Recommended Minimum Performance Standards of 800 MHz Dual-mode Mobile Stations

DAMPS dual-mode cellular phone performance tests:

- | | | |
|--|--|--|
| CP call processing handoffs including: | TXA frequency error | TXD RF output power |
| • Digital to digital (D-D) | TXA RF power output | TXD calibrate RF power |
| • Digital to analog (D-A) | TXA modulation deviation limiting | TXD adjacent channel power |
| • Analog to digital (A-D) | TXA audio frequency response | |
| • Analog to analog (A-A) | TXA audio distortion | RXA expander response |
| • Analog to narrow analog (A-NA) | TXA signaling tone/DST | RXA audio frequency response |
| • Narrow analog to analog (NA-A) | TXA FM hum and noise | RXA audio distortion |
| CP call processing registration | TXA SAT/DSAT | RXA hum and noise |
| CP flow chart (manual phone test) | TXA RVC data deviation | RXA SINAD |
| | TXA compressor response | RXA FVC order message error rate |
| CPA call processing page | TXA current drain | RXA MRI |
| CPA call processing release | TXA DTMF frequency error | RXA quick general test |
| CPA call processing origination | TXA switch channels | |
| CPA call processing hook flash | TXA quick general test | RXD receiver sensitivity (loop back) |
| | | • BER |
| CPD call processing talkback | TXA/RXA quick functional test (no audio) | • WER (FACCH, SACCH, speech data) |
| CPD quick digital test | | RXD receiver sensitivity (channel quality, RSSI) |
| CPD call processing page | TXD modulation accuracy including: | |
| CPD switch channel | • Error vector magnitude | |
| CPD origination | • 10 burst error vector magnitude | |
| CPD release | • Magnitude error | |
| | • Phase error | |
| | • Burst amplitude droop | |
| | • I/Q origin offset | |
| | • Carrier frequency error | |

AMPS/DAMPS cellular phone test. Using TIA adapter (800 MHz)

- HP 8920B RF communications test set**.....HP 8920B
- Required
 - High stability timebaseOption 001
 - Tone/digital signalingOption 004
 - Dual-mode rear panel connectorsOption 051
 - HP 83201B Option 003 TDMA cellular adapter ³Option 500
 - Recommended
 - 10 W to 50 μW power measurement range ¹Option 006
 - C-Message weighting filter ²Option 013
 - 6 kHz bandpass filter ²Option 014
 - Additional performance options
 - Spectrum analyzer with tracking generator and adjacent channel power.....Option 102
 - Radio interface cardOption 020

SOFTWARE

- HP 11807E radio test software**HP 11807E
- TDMA dual-mode cellular phone tests option. Using TIA adapter ⁵Option 008

Radios supported:

- North American TDMA dual-mode (DAMPS, IS-54) cellular phones

Standard derived from:

- Electronic Industries Association (EIA) [EIA/TIA-553 and EIA-IS-19B] cellular radio specifications.
- TIA/EIA/IS-55-A Recommended Minimum Performance Standards of 800 MHz Dual-mode Mobile Stations

TDMA dual-mode cellular phone performance tests:

NAM numeric assignment module	CPD quick digital test	TXA DTMF frequency error
CP call processing registration	CPD call processing page	TXA quick general test
CP call processing handoffs including:	CPD call processing talkback	TXA/RXA functional (no audio)
• Digital to digital (D-D)	CPD switch channel	TXD RF output power
• Digital to analog (D-A)	CPD origination	TXD modulation accuracy including:
• Analog to digital (A-D)	CPD release	• Error vector magnitude
• Analog to analog (A-A)	TXA frequency error	• 10 burst error vector magnitude
CP manual flow chart (manual phone test)	TXA RF output power	• Magnitude error
CPA call processing page	TXA modulation deviation limiting	• Phase error
CPA call processing origination	TXA audio frequency response	• Burst amplitude droop
CPA call processing release	TXA audio distortion FM hum, noise, and muting	• I/Q origin offset
CPA switch channels	TXA signaling tone	• Carrier frequency error
	TXA SAT frequency error and deviation	TXD calibrate RF power
	TXA wideband data deviation	TXD adjacent channel power
	TXA compressor response	RXA expander response
	TXA current drain	RXA audio frequency response
		RXA audio distortion FM hum, noise and muting
		RXA SINAD
		RXA quick general test
		RXD usable sensitivity including:
		• BER
		• WER on speech data
		• FACCH, and SACCH

¹ HP 8920Bs cannot be configured with more than one input range option. Do not order options 006, 007, H08 (or any combination of these options) concurrently.

² A maximum of two filter options (010 through 014) can be added to each HP 8920B.

³ HP 8920Bs cannot be configured with more than one TDMA cellular adapter. Do not order options 500 and 800 concurrently.

⁵ Not compatible with HP 8920B Option 800.

AM radio test

- HP 8920B RF communications test set** HP 8920B
- Recommended
 - High stability timebase Option 001
 - Additional performance options
 - Spectrum analyzer with tracking generator and adjacent channel power Option 102
 - Radio interface card Option 020
 - High level RF power measurements to 100 watts continuous¹. Option H08

SOFTWARE

- HP 11807E radio test software** HP 11807E
- AM radio tests option Option 003

Radios supported:

- Single and multiple channel AM radios

Standard derived from:

- Electronic Industry Association (EIA) AM radio test specifications [RS-382-A]

AM transceiver performance tests:

TX and RX standby current drain	RX hum and noise
TX frequency error	RX audio distortion
TX output power	RX audio frequency response
TX audio frequency response	RX sensitivity (signal to noise)
TX audio distortion	RX sensitivity (SINAD)
TX microphone sensitivity	RX audio squelch sensitivity
TX AM hum and noise	RX automatic gain control
TX quick general test	RX quick general test

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² A maximum of two filter options (010 through 014) can be added to each HP 8920B.

North American FM radio test

HP 8920B RF communications test set..... HP 8920B

• Recommended

High stability timebase Option 001
 Tone/digital signaling Option 004
 400 Hz high pass filter ². Option 010
 C-message weighting filter ². Option 013

• Additional performance options

Spectrum analyzer with tracking generator and adjacent channel power Option 102
 Radio interface card Option 020
 High-level RF power measurements to 100 watts continuous ¹. Option H08

SOFTWARE

HP 11807E radio test software. HP 11807E
 North American FM tests option Option 001

Radios supported:

- Single and multiple channel FM radios, duplex FM radios, CTCSS squelched radios, CDCSS squelched radios

Standard derived from:

- Electronic Industry Association (EIA)
 FM test specifications EIA/TIA 603 Land Mobile FM or PM Communications Equipment Measurement and Performance Standard

North American FM transceiver performance tests:

TX and RX standby current drain	RX hum and noise
TX frequency error	RX audio distortion
TX output power	RX frequency response
TX modulation limiting	RX usable sensitivity
TX audio frequency response	RX audio squelch sensitivity
TX audio distortion	RX squelch blocking
TX microphone sensitivity	RX CTCSS/CDCSS opening
TX FM hum and noise	RX audio sensitivity
TX residual AM hum and noise	RX variation of sensitivity with frequency
TX CTCSS/CDCSS deviation, freq./code	RX quick general test
TX quick general test	

European Φ M radio test

HP 8920B RF communications test set HP 8920B

- Recommended

High stability timebase	Option 001	<input type="checkbox"/>
Tone/digital signaling	Option 004	<input type="checkbox"/>
400 Hz high pass filter ²	Option 010	<input type="checkbox"/>
CCITT weighting filter ²	Option 011	<input type="checkbox"/>

- Additional performance options

Spectrum analyzer with tracking generator and adjacent channel power	Option 102	<input type="checkbox"/>
Radio interface card	Option 020	<input type="checkbox"/>

SOFTWARE

HP 11807E radio test software HP 11807E

European Φ M tests option Option 002

Radios supported:

- Single and multiple channel FM radios
- Duplex FM radios
- CTCSS squelched radios
- CDCSS squelched radios

Standard derived from:

- Conference of European Postal Telecommunications (CEPT)
 Φ M tests T/RA-24-01
- European Telecommunications Standards Institute (ETSI)
 Project team 8 final report (June 1990)

European Φ M transceiver performance tests:

TX and RX standby current drain	RX noise and hum
TX frequency error	RX audio distortion
TX output power error	RX frequency response
TX modulation limiting	RX usable sensitivity
TX frequency deviation	RX amplitude characteristics
TX audio frequency response	RX audio squelch sensitivity
TX audio distortion	RX CTCSS/CDCSS opening
TX microphone sensitivity	RX quick general test
TX residual modulation	
TX CTCSS/CDCSS deviation, freq./code	
TX quick general test	

Cordless phone test

- HP 8920B RF communications test set**..... HP 8920B
- Required
 - Low-level RF power measurements ¹ Option 007
 - Recommended
 - High stability timebase Option 001
 - Tone/digital signaling Option 004
 - CCITT weighting filter ² Option 011
 - Additional performance options
 - Spectrum analyzer with tracking generator and adjacent channel power Option 102
 - Radio interface card Option 020

¹ HP 8920Bs cannot be configured with more than one input range option. Do not order options 006, 007, H08 (or any combination of these options) concurrently.

² A maximum of two filter options (010 through 014) can be added to each HP 8920B.

LTR trunked mobile radio test

- HP 8920B RF communications test set**..... HP 8920B
- Required
 - Tone/digital signaling Option 004
 - 400 Hz high pass filter ² Option 010
 - Recommended
 - High stability timebase Option 001
 - CCITT weighting filter ² Option 011
 - Additional performance options
 - Spectrum analyzer with tracking generator and adjacent channel power Option 102
 - Radio interface card Option 020
 - High-level RF power measurements to 100 watts continuous¹. Option H08

SOFTWARE

- HP 11807E radio test software** HP 11807E
- LTR trunked mobile radio tests option Option 010

Radios supported:

- Simplex and duplex FM radios, both conventional (carrier squelch, CTCSS, and CDCSS) and those using the LTR trunking protocol

Standard derived from:

- Electronic Industry Association (EIA) FM test specifications TIA/EIA-603 as modified to support the EF Johnson logic trunked radio (LTR) protocol

LTR trunked mobile radio performance tests:

TX and RX standby current drain	RX hum and noise
TX frequency error	RX audio distortion
TX output power	RX frequency response
TX modulation limiting	RX usable sensitivity
TX audio frequency response	RX conv. audio squelch sensitivity
TX audio distortion	RX conv. squelch blocking
TX microphone sensitivity	RX squelch opening with signaling
TX FM hum and noise	RX audio sensitivity
TX residual AM hum and noise	RX conv. variation to sensitivity with freq.
TX signaling deviation and freq/code	RX quick test
TX quick test	RT trunked manual test

¹ HP 8920Bs cannot be configured with more than one input range option. Do not order options 006, 007, H08 (or any combination of these options) concurrently.

² A maximum of two filter options (010 through 014) can be added to each HP 8920B.

EDACS trunked mobile radio test

- HP 8920B RF communications test set**..... HP 8920B
- Required
 - Tone/digital signaling Option 004
 - Recommended
 - High stability timebase Option 001
 - 400 Hz high pass filter ². Option 010
 - Additional performance options
 - Spectrum analyzer with tracking generator and adjacent channel power Option 102
 - Radio interface card Option 020
 - High-level RF power measurements to 100 watts continuous ¹. Option H08

SOFTWARE

- HP 11807E radio test software** HP 11807E
- EDACS trunked mobile radio tests option Option 011

Radios supported:

- Simplex and duplex FM radios, both conventional (Carrier squelch, CTCSS, and CDCSS) and those using the EDACS trunking protocol

Standard derived from:

- Electronic Industry Association (EIA)
FM test specifications
- TIA/EIA-603 as modified to support the Ericsson GE enhanced digital access
Communications system (EDACS) protocol

EDACS trunked mobile radio performance tests:

- | | |
|--------------------------------------|--|
| TX and RX standby current drain | RX hum and noise |
| TX frequency error | RX audio distortion |
| TX output power | RX frequency response |
| TX modulation limiting | RX usable sensitivity |
| TX audio frequency response | RX conv. audio squelch sensitivity |
| TX audio distortion | RX conv. squelch blocking |
| TX microphone sensitivity | RX squelch opening with signaling |
| TX FM hum and noise | RX audio sensitivity |
| TX residual AM hum and noise | RX conv. signal displacement bandwidth |
| TX signaling deviation and freq/code | RX quick test |
| TX quick test | RT manual test |
| TX transient frequency behavior | |

System support test software

- HP 8920B RF communications test set** HP 8920B
- Required ⁶
 - Spectrum analyzer with tracking generator and adjacent channel power Option 102

SOFTWARE

- HP 11807E radio test software** HP 11807E
- System support tests option Option 100

RF tests:

- Swept gain
- Swept insertion loss
- Swept return loss
- AMPS channel return loss
- Cable fault
- ERP calculator
- Replot data files
- Transfer stored data
- SA self calibration on/off
- Catalog memory card
- Create/edit data collection labels

Field strength:

Performs field strength measurements

Intermodulation products:

Calculates intermodulation products

Scanner:

- Discrete frequency scanning
- Swept frequency scanning

⁶ For making VSWR and cable fault measurements external components are required. A kit containing these components (BKH-8920) can be ordered directly from Eagle, P.O. Box 4010, Sedona AZ 86340. Telephone: (520) 204-2597, FAX: (520) 204-2568.

Additional Options and Accessories

Software support and accessories

HP 83224A IBASIC development tools

For creating or modifying radio test programs:

- HP 83224A IBASIC development tools HP 83224A
- IBASIC development tool kit (includes software, HP-IB interface, cable, etc.) Option 001
- IBASIC development tool kit, (software only) Option 002

PCMCIA memory cards for IBASIC program and data storage

- 64 Kbytes SRAM card with battery HP 83230A
- 1 Mbyte SRAM card with battery HP 83231A

Printers⁷

(Must order one for screen and test printouts)

- DeskJet 520 printer C2170A
- DeskJet 560C printer C2168A

Hardware support

HP 8920B options

- Three-year return repair service⁸ Option W30
- Five-year return repair service⁸ Option W50
- Calibration certificate with test data Option UK6
- Three-year customer return calibration service⁹ Option W32
- Five-year customer return calibration service⁹ Option W52
- Three-year standards compliant calibration service Option W34
- Five-year standards compliant calibration service Option W54

⁷ Supported printers include those printers that emulate the Epson FX80 and LQ850, as well as the HP DeskJet, LaserJet, ThinkJet, and QuietJet models.

⁸ For three- or five-year return repair service on HP 8920B Options 500 and 800, order Option W30 on the HP 8920B and Option W30 on a stand-alone HP 83201B or HP 83206A. See examples on page 2.

⁹ For three- or five-year customer return calibration service on HP 8920B Options 500 and 800, order as described in footnote 8.

Rack mount

	HP 8920B options	
Delete handle and cover from HP 8920B	Option 031	<input type="checkbox"/>
HP 8920B rack mount kit without handle (part no. 5061-4846)	Option 1CM	<input type="checkbox"/>
HP 8920B Option 500, 800 rack mount kit (part no. 08921-61037)	Option AXK	<input type="checkbox"/>
		HP 83236A options
HP 83236A rack mount kit	Option AX4	<input type="checkbox"/>

Manuals and videos

	HP 8920B options	
Delete manual set from HP 8920B	Option OBO	<input type="checkbox"/>
Extra manual set for HP 8920B	Option OB1	<input type="checkbox"/>
HP instrument BASIC user's handbook (included with HP 8920B)	E2083-90005	<input type="checkbox"/>
HP 8920 user's guide (included with HP 8920B)	08920-90171	<input type="checkbox"/>
HP 8920 applications handbook	08920-90212	<input type="checkbox"/>
HP 8920/8921 programmer's guide (included with HP 8920B)	08920-90204	<input type="checkbox"/>
HP 8920/8921 assembly level repair manual (included with HP 8920B)	08920-90168	<input type="checkbox"/>
HP 83201 user's guide (included with HP 83201B)	83201-90034	<input type="checkbox"/>
HP 83201B assembly level repair manual (included with HP 83201B)	83201-90018	<input type="checkbox"/>
HP 83206A user's guide (included with HP 83206A)	83206-90002	<input type="checkbox"/>
HP 83206A assembly level repair manual (included with HP 83206A)	83206-90009	<input type="checkbox"/>
HP 83236A user's guide (included with HP 83236A)	83236-90001	<input type="checkbox"/>
HP 8920 basic operation video tape (VHS/NTSC)	Option OBP	<input type="checkbox"/>
HP 8920 basic operation video tape (VHS/PAL)	Option OBQ	<input type="checkbox"/>
HP 8920 basic operation video tape (VHS/SECAM)	Option OBZ	<input type="checkbox"/>

Transit cases

Hard shell transit case for HP 8920B	08920-90033	<input type="checkbox"/>
Padded carrying case for HP 8920B	1540-1130	<input type="checkbox"/>
Hard shell transit case for HP 8920B, Option 500 or 800	08920-90141	<input type="checkbox"/>
Padded carrying case for HP 8920B, Option 500 or 800	08920-61147	<input type="checkbox"/>

Miscellaneous accessories

CRT sunshade	08920-61051	<input type="checkbox"/>
Antenna	08920-61060	<input type="checkbox"/>
Microphone for HP 8920B	08920-61059	<input type="checkbox"/>
DC battery pack for HP 8920B (24 Volt)	08920-80027	<input type="checkbox"/>
Battery charger	08920-80028	<input type="checkbox"/>
Connector kit (Contains DC power, mic/acc, RS-232 to RJ-11, and radio interface connectors).	08920-61061	<input type="checkbox"/>
Oscilloscope probe (1 M Ω /7.5 pF 10:1 probe)	10435A	<input type="checkbox"/>
Oscilloscope probe (High Z/40 pF 1:1 probe)	10438A	<input type="checkbox"/>
Oscilloscope probe (High Z/64 pF 1:1 probe)	10439A	<input type="checkbox"/>
RF detector probe for RF mV measurement	34301A	<input type="checkbox"/>
(100 kHz to 700 MHz. Requires BNC to banana jack adapter, model number 10110B)		
Detector probe for RF mV measurement	54006A	<input type="checkbox"/>
(Allows for RF mV measurements up to 1 GHz when used with HP 8920A/B/D)		
Power splitter (DC to 3 GHz, 50 Ω).	11850C	<input type="checkbox"/>

Upgrades and Retrofits

Upgrades of existing HP 8920Bs for DAMPS/DCCH and PCS

DAMPS/DCCH

Order HP 83206A - TDMA cellular adapter HP 83206A

Note: Requires HP 8920B with firmware revision \geq 2.01 and Option 001, 004, 006, 051.
Option 013 and 014 are recommended.

PCS Upgrade

Add the HP 83236A PCS Interface to HP 8920B configurations for AMPS, DAMPS, DCCH to translate measurements to the 1850 to 1990 MHz PCS band.

HP 83236A HP 83236A

Rack flange kit without handles (for HP 83236A only) Option AX4

Retrofit kits for HP 8920B options

HP 8920B options

Retrofit Kit for Option 001 R01

Retrofit Kit for Option 004 R04

Retrofit Kit for Option 006¹ R06

Retrofit Kit for Option 007¹ R07

Retrofit Kit for Option 010² R10

Retrofit Kit for Option 011² R11

Retrofit Kit for Option 012² R12

Retrofit Kit for Option 013² R13

Retrofit Kit for Option 014² R14

Retrofit Kit for Option 020 R20

Retrofit Kit for Option 051 R51

Retrofit Kit for Option 102 R02

Firmware Feature Upgrade Kit R58

Factory Retrofit for Option H08¹ G05

¹ HP 8920Bs cannot be configured with more than one input range option. Do not order options 006, 007, H08 (or any combination of these options) concurrently.

² A maximum of two filter options (010 through 014) can be added to each HP 8920B.

**For additional HP 8920B RF
Communications Test Set information,**
refer to the following literature:

- **Brochure:**
literature number 5965-1571E
- **Technical Specifications:**
literature number 5965-1573E
- **Price List:**
literature number 5965-1574EUS

For more information on Hewlett-Packard Test & Measurement products, applications or services please call your local Hewlett-Packard sales offices. A current listing is available via Web through Access HP at <http://www.hp.com>. If you do not have access to the internet please contact one of the HP centers listed below and they will direct you to your nearest HP representative.

United States:

Hewlett-Packard Company
Test and Measurement Organization 5301
Stevens Creek Blvd.
Bldg. 51L-SC
Santa Clara, CA 95052-8059
1- 800-452-4844

Canada:

Hewlett-Packard Canada Ltd.
5150 Spectrum Way
Mississauga, Ontario
L4W 5G1
(905) 206- 4725

Europe:

Hewlett-Packard
European Marketing Centre
P.O. Box 999
1180 AZ Amstelveen
The Netherlands

Japan:

Hewlett-Packard Japan Ltd.
Measurement Assistance Center
9-1, Takakura-cho, Hachioji-shi,
Tokyo 192, Japan
(81) 426 48 3860

Latin America:

Hewlett-Packard
Latin American Region Headquarters
5200 Blue Lagoon Drive
9th Floor
Miami, Florida 33126 U.S.A.
(305) 267 4245/4220

Australia/New Zealand:

Hewlett-Packard Australia Ltd.
31-41 Joseph Street
Blackburn, Victoria 3130
Australia
131 347 ext. 2902

Asia Pacific:

Hewlett-Packard Asia Pacific Ltd
17-21/F Shell Tower, Times Square,
1 Matheson Street, Causeway Bay,
Hong Kong
(852) 2599 7070

**For more information call 1-800-452-4844 or 1-303-452-4844
or via the Web through AccessHP at <http://www.hp.com>**

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