

Methods for Community-Based Participatory Research for Health

Transcription

1 New! 2015 Ham Catalog More hams use MFJ analyzers than all others in the world! Antenna Expert™ VNA Antenna Analyzer covers MHz 1 Hz resolution MFJ Seepage17... Frequency sweep plots: SWR, Impedance, Resistance, Reactance, Phase Angle, Complex Return Loss, Smith Chart... Signof Reactance Amazing Accuracy with Open-Short-Load Calibration... Shown actual size 3 1/4Wx6 1/2Hx1D Index on Pgs For your nearest dealer or to order, call MFJ ENTERPRISES, INC. 300 Industrial Park Rd. Starkville, MS Phone: (662) ; 8-4:30 CST, Monday-Friday. Fax: (662) mfjcustserv@mfjenterprises.com Tech Support: Visit... PROUDLY No Matter What™ Warranty Every MFJ product is protected by MFJ's famous one year No Matter What™ limited warranty. We will repair or replace your MFJ product no matter what (at our option) for one full year. Prices and specifications subject to change without notice or obligation. MFJ will not be held responsible for printing errors.

2 MFJ 1500 Watt Legal Limit IntelliTuner™ Full 1500 watts SSB/CW Digital & Analog SWR/WattMeter... All features of MFJ IntelliTuners™ -- Ultra-fast, Safe Automatic Tuning... Wide Tuning Range (Ohms from 1.8 to 30 MHz)... Radio Interfaces... Built-in Antenna Switch for two coax/long wire... Automatic Bypass protects your amplifier... Field Upgradeable Software... Very Compact! MFJ-998 MFJ-998 is the smallest full legal-limit auto- matic antenna tuner in the world! 13Wx4Hx15D inches fits easily into your ham station. Weighs just 8 pounds -- great portability! Requires 12-15VDC at 1.4 amps maximum or 110 VAC with MFJ-1316, MFJ-905K Ship Code D The MFJ-998 Full Legal Limit 1500 Watt Intellituner™ takes you to the final level in automatic antenna tuners. With a capability of 1500 watts SSB and CW, coupled with automatic tuning, your high-power station can now operate essentially hands-free even when frequency and band changes are made. Fast Automatic Tuning The MFJ-998 instantly matches impedances from Ohms using MFJ's exclusive IntelliTune™, AdaptiveSearch™ and InstantRecall™ algorithms with over 20,000 VirtualAntenna™ Memories. When you key your transmitter, MFJ's InstantRecall™ checks to see if that frequency has been used before. If so, tuning is instantaneous. If not, MFJ's IntelliTune™ algorithm (based on MFJ's efficient SWR Analyzer technology) measures the impedance, snaps the necessary components in place, and then finetunes the SWR. If the antenna impedance is outside the tuner's measurement range, MFJ's Adaptive Search™ algorithm measures the frequency and determines only relevant component values -- which are then searched for fast tuning. Safe Automatic Tuning and Amplifier Protection The MFJ-998 includes MFJ's Amplifier Bypass Control™ -- an MFJ exclusive feature! When used with a transceiver interface cable, tuning is safe and "stupidproof"! When a tuning cycle is initiated, the MFJ-998 first bypasses any in-line amplifier. Next, the MFJ-998 initiates a low-power CW tuning carrier from your transceiver. When tuning is complete, the MFJ-998 reverts your transceiver to its prior power and mode, and re-enables the amplifier. This entire cycle typically takes less than a second! Finally, if the MFJ-998 cannot find a match better than a pre-set amplifier SWR trip-point, the amplifier stays bypassed to provide automatic SWR protection for your amplifier -- another outstanding MFJ exclusive! Analog SWR/Wattmeter A large super-bright LED lighted analog Cross-Needle SWR/Wattmeter displays selectable 300/60 watt or

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3000/600 watt forward/reflected full-scale ranges. You can even select automatic power ranging -- the best power range is automatically selected for you. Digital LCD SWR/Wattmeter A two-line, 16-character backlit LCD meter displays SWR, forward/reflected power, frequency, antenna selected, an autoranging bargraph power indication, and much more. You can even read the final matching inductor and capacitor values should you want to build your own fixed matching network. Simple menus determine displayed information - no complex button combinations to remember! MFJ VirtualAntenna™ Memory MFJ new VirtualAntenna™ Memory system gives you 4 antenna memory banks for each of 2 switchable antenna connectors. Select up to 4 antennas on each antenna connector. Each antenna has 2500 memories, 20,000 total. Has two coax connectors and a binding post for end-fed long wire antennas. Download and Upgrade Remotely Field upgradeable firmware via the serial port -- download and upgrade your MFJ-998 as new features are introduced! Plus Much More! Built-in radio interface provides control of most amateur transceivers. Automatic bypassing when excessive tuning power or power in excess of 1500 watts is applied. Use balanced line antennas with external MFJ-912, 69.95, 1.5 kw 4:1 balun. MFJ ATU PC Board for Elecraft K-3 Rig MFJ-905K3 is a super clone of the KAT3 optional tuning board for the superb Elecraft K3 transceiver. MFJ-905K3 is a direct plug-in PC board for the Elecraft K3 10 Watt or 100 Watt model. Covers 1.8 to 54 MHz. This automatic antenna tuner PC board features an L-Match New! design and can match SWR up to 10:1. It handles 100 Watts. The ATU PC board has a second antenna port, and a sub-rx SMA port. All antenna ports are protected with gas discharge tubes. Super sensitive relay allows excellent low current drain. MFJ-905K3 is 4Wx3 1/2Hx1 1/4D inches and easily slides right into the K3 s tuning board slot. Weighs less than 1/2 pound. Pick up this great accessory for your K3 today and save! 2 MFJ... The World Leader in Ham Radio Accessories! Back view of MFJ-998 An Inside view of MFJ-998 Pre-wired Rig Interface Cables for MFJ-929/998 These cables work with the following MFJ Automatic tuners: MFJ-929, MFJ-928, MFJ-925, and the MFJ-998. MFJ-5114K, Prewired Interface cable for Kenwood TS-590 and compatibles. MFJ-5114I, Prewired Rig Interface cable for Icom and compatibles. MFJ-5114Y,

Prewired Rig Interface cable for Yaesu FT-450, FT-950, FT- 847, FT-DX-3000 and other compatibles. MFJ-5114Y3, Prewired MFJ-998 to FT-1000MP, FT-9000 Yaesu rigs. MFJ-5114Y4, Prewired MFJ-998 to FT2000 and 5000 Yaesu rigs. MFJ 1.5 kw Remote Automatic Antenna Tuner MFJ-998RT Ship code D Tune your antenna at the antenna! Operating your antenna tuner remotely greatly reduces losses and allows high efficiencies from long coax runs and high SWR. MFJ-998RT has a wide tuning range, Ohms from MHz. Weather protected ABS plastic housing. Has all of the features of the in-shack MFJ-998. See page 5 for complete details.

3 MFJ IntelliTuner TM Automatic Tuner Automatically tunes unbalanced/balanced antennas...ultra fast... New 20,000 memories... Antenna Switch... Efficient L-network... Select 300 Watts (Ohms) or 150 Watts (Ohms) MHz... 4:1 current balun... LED Lighted Cross-Needle plus Digital SWR/Wattmeters...Audio SWR meter...backlit LCD...Remote port...rig interface... World s First dual power level MFJ-993B 300/150 Watts SSB/CW Tuner -- Select 300 Watt SSB/CW power level and match Ohm antennas Or... Ship Code C select 150 Watt SSB/CW power level and ate. It s all match extra wide-range Ohms! done in a fraction of a sec- The MFJ-993B IntelliTuner TM lets you tune any antenna automatically balanced or ond. unbalanced -- ultra fast. When the It s a comprehensive automatic antenna impedance is tuning center complete with SWR/Wattmeter, antenna switch for two antennas and measurement within its 4:1 current balun for balanced lines. range, the MFJs exclusive IntelliTuner TM, Adaptive MFJ-993B is Search TM and InstantRecall TM algorithms the fastest give you ultra fast automatic tuning with automatic over 20,000 VirtualAntenna TM Memories. antenna tuner You get a highly efficient L-network, 6- in the world ohm matching at 300 Watts SSB/CW If it can t accurately determine impedance, MFJ s AdaptiveSearch TM algorithm loops, vertical loops, multi-band doublets, any balanced antenna - - horizontal or extra-wide Ohm matching at 150 Watts SSB/CW, MHz coverage, Cross- goes into action. Frequency is measured quads, folded dipoles, Zepps. Needle and digital meters, audio SWR meter, and relevant components values are determined. Only those values are searched for Plug in the MFJ-993RC, Remote Control backlit LCD, remote control port, radio interface, heavy-duty 16 amp/1000v relays. ultra-fast tuning , remote control and It learns while you re having fun For even faster searches, you can set the use your tuner elsewhere As you re ragchewing, contesting or target SWR to 2 (settable). remotely. DXing, your MFJ-993B is learning! You can manually tune when you can t MFJ-993B Interface Pre-wired Cables When you transmit, the MFJ-993B automatically tunes for minimum SWR and LED Lighted Cross Needle plus 991B/993B/994B IntelliTuner TM through transmit (for listening out of ham bands). Allows automatic tuning of your MFJremembers your frequency and tuner settings. The next time you operate on that LED lighted Cross-Needle and digital MFJ-5124I, 19.95, ICOM. Supports Digital SWR/Wattmeters your radio via these interface cables. frequency and antenna,

these tuner settings meters let you accurately read SWR, forward and reflected power at a glance. 765, 775, others that support AH-3 or AH-4. IC-706, 707, 718, 725, 728, 736, 746, 756, are instantly restored and you're ready to operate in milliseconds! An audio SWR meter lets you hear the MFJ-5124A, 19.95, ALINCO. MFJ new VirtualAntenna™ Memory system tuned SWR when you can't see/read meters. Supports DX-70, DX-77 and others. gives you 4 antenna memory banks for each Turn on a highly visible, instant response MFJ-5124K, 59.95, KENWOOD. of 2 antenna connectors. Select up to 4 SWR LCD bargraph when you need it. Supports TS-50S, 450S, 570S, 690S, 850S, antennas on each antenna connector. Each Backlit LCD Display 870S, 2000 and others that support AT-300. antenna has 2500 memories, 20,000 total. An easy-to-read backlit LCD displays MFJ-5124Y, 59.95, YAESU. Supports Intelligent ultra fast tuning SWR, forward/reflected power, frequency, FT-100D, FT-450, FT-857D, FT-897, FT- MFJs InstantRecall™ first checks its antenna 1 or 2, L/C tuner values, on/off 950, FT-DX-3000 and other compatibles. memory to see if you have operated this frequency before. If so, tuning is instantaneous The MFJ-993B is a compact 10Wx2¼ MFJ-5124Y3, 19.95, Supports YAESU indicators and other information. MFJ-5124Y2, 59.95, YAESU FT-847. and you're ready to operate. Hx9D inches. Use VDC/1 amp or FT-1000MP and compatibles. If not, MFJs IntelliTuner™ algorithm VAC with MFJ-1316, MFJ-5124Y4, 19.95, Supports Yaesu based on MFJ's famous SWR Analyzer Tune any Antenna FT2000 and compatibles. technology - - kicks in. It measures the You can tune any antenna dipoles, complex impedance of your antenna. Next, verticals, beams, phased arrays, inverted Dual 300/150 Watt it calculates the components it needs and vees, quads, random wires, mobile antennas, Automatic Tuner instantly snaps them in. Then, it fine tunes compact limited space antennas. World's First to minimize SWR -- you're ready to oper- A 4:1 true current balun lets you tune dual power level Tuner Watt MFJ Automatic Tuner MFJ-994B Ship Code C MFJ-994B, 600 Watt Intelli-Tuner™ automatic antenna tuner with 10,000 VirtualAntenna™ Memories. Like MFJ- 993B but handles 600 Watts SSB/CW, matches Ohms. Does not have digital SWR/Watt-meter/LCD display, audio SWR meter/audio feedback, antenna switch or 4:1 current balun. Tuning must be done at low transceiver power with amplifier bypassed. MFJ-991B Ship Code C Select 300 Watt SSB/CW and match Ohm antennas Or select 150 Watt SSB/CW and match extra wide-range Ohms. 10,000 VirtualAntenna™ Memories. Like MFJ-993B, less digital SWR/Wattmeter/ LCD display, audio SWR meter/audio feedback, antenna switch or 4:1 current balun. 3

4 MFJ Compact 200 Watt IntelliTuners™ Automatically tunes any unbalanced antenna... Ultra fast... 20,000 VirtualAntenna™ Memories... Antenna Switch... Efficient L-network... Matches Ohms at 200 Watts MHz... Digital SWR/Wattmeter... Audio SWR meter... Radio interface... The MFJ-929 IntelliTuner-Compact™ lets you automatically tune any coax fed or random wire antenna MHz at full 200 Watts SSB/CW. It can match Ohms (SWR up to 32:1) - - that's a 50% wider matching range at a higher power level than lesser competing products. You get a digital SWR/Wattmeter with backlit LCD, antenna switch for 2 antennas, built-in radio interface and built-in internal BiasTee for remote tuner

operation. MFJ's exclusive IntelliTune™, Adaptive Search™ and InstantRecall™ algorithms give you ultra-fast automatic tuning with over 20,000 VirtualAntenna™ Memories. MFJ VirtualAntenna™ Memory MFJ new VirtualAntenna™ Memory system gives you 4 antenna memory banks for each of 2 antenna connectors. You can select up to 4 antennas on each antenna connector. Each antenna has 2500 memories. 4 Times the Solutions! MFJ-929 gives you 256 values each of capacitance and inductances for 131,072 2-Year No MatterWhat™ Warranty Plug & Play! You won't MFJ-939I/K/Y even know it's there MFJ-939I/K/Y automatically tunes your antenna as you tune your radio. SWR is just always low. Tunes your coax fed or random wire antennas MHz from 2 Watts QRP to full 200 Watts SSB/CW. Matches Ohms (SWR up to 32:1) -- that's a 50% wider matching range than competing products that are less capable and higher priced... and it's made in the USA. Highly intelligent, ultra-fast tuning! As you're ragchewing, contesting or DXing, the MFJ-939 is learning your antenna and the way you operate and storing all this in its 20,000 memories. The more you use it, the more it learns. Measure & Compute = Instant Match MFJ-939 uniquely measures your antenna's complex impedance (R, X), computes the L-network and snaps in needed 4 New! MFJ matching solutions. That's 4 times the 32,768 matching solutions of competing products with only 128 L/C values each! Highly intelligent, ultra-fast tuning! Don't be fooled by competing products claiming fast search times -- if you have a quarter of the matching solutions, of course, it takes less time to finish but it's not faster. MFJ's faster speed comes from advanced technology and software algorithms not from fewer matching solutions. MFJ's IntelliTuner-Compact™ actually measures complex impedance -- R and X -- of your antenna, computes the L-network values needed and snaps in those components to give you an instant match. If the load is out of measurement range, AdaptiveSearch™ determines the smaller subset from all solutions that can match a safe load -- and then searches only that subset -- others search through far more solutions. Digital LCD SWR/Wattmeter An easy-to-read, two-line, 16-character backlit LCD displays SWR, peak or average forward/reflected power, frequency, antenna 1 or 2, L/C tuner values, on/off indicators and other info. They are selected from easy-to-understand menus -- not complex combinations of buttons you can't remember. A fast-response, high-resolution bargraph gives you an auto-ranging 20/200 Watt power meter. You get 60 segments each for forward and reflected power and 36 segments for SWR -- try that with an 8 segment bargraph that makes you change power ranges and doesn't even give you reflected power! You can read inductance and capacitance components for instant matching. AdaptiveSearch™ AdaptiveSearch™ determines a sub-set of all solutions that can provide a safe match and searches only that subset giving you an ultra fast match. Others search slowly through all solutions. InstantRecall™ InstantRecall™ first checks its memory to see if you have operated this frequency before. If so, tuning is instantaneous and you're ready to go! MFJ VirtualAntenna™ Memory MFJ exclusive VirtualAntenna™ Memory system gives you 8 antenna memory banks of 2500 memories each. You can use an antenna switch to select up to 8 antennas and assign each antenna its own 2500 memories! 4 Times More Solutions and Faster! MFJ has 256 values each of capacitance and inductance for 131,072 matching

solutions giving you a finely tuned very low SWR. That's 4 times the 32,768 solutions of competitors using only 128 L/C values each! Don't be fooled by competing products claiming fast search times -- if you have a directly in uh and pf. This turns you into an expert L-network designer! Match your load, read the resulting L/C values, then use them to build your fixed L-network. Or, knowing the L/C values you can determine R and X of the load impedance. Plus Much More! StickyTune™ mode gives you one-hand tuning by locking the TUNE button -- just transmit to tune regardless of SWR. Has audio SWR meter and audio feed back. Competing products don't. Built-in 50 MHz frequency counter. Its built-in radio interface lets you use a simple wire cable to compatible rigs. Others require a cable with expensive electronics. Binding post for random wire. Self-test. Highly efficient L-network. 10 Amp/1000V relays, RF duty silver mica capacitors. 6 1/2 Wx2 7/8Hx8 3/8D in. 2.4 lbs VDC/ 1Amp or 110 VAC with MFJ-1316, Pre-wired Rig Interface Cables for MFJ-929 series These cables work with the following MFJ Automatic tuners: MFJ-929, MFJ-928, MFJ-925, and the MFJ-998. MFJ-5114K, Prewired Rig Interface cable for Kenwood TS-590 and other compatibles. MFJ-5114I, Prewired Rig Interface cable for Icom and other compatibles. MFJ-5114Y, Prewired Rig Interface cable for Yaesu FT-950, FT-450, FT-847 and compatibles.. MFJ-5114Y3, Prewired MFJ-929 to FT-1000MP, FT-9000 Yaesu rigs. MFJ-5114Y4, Prewired MFJ- 929 to FT2000 and other Yaesu rigs. Plug & Play Auto Tuner MFJ... The World Leader in Ham Radio Accessories! for Icom, Yaesu, Kenwood, Alinco and others quarter of the matching solutions, of course, it takes less time to finish but it's not faster. MFJ's faster speed comes from advanced technology and software algorithms not from fewer solutions. Audio SWR Meter An Audio SWR meter beeps when SWR 3. Audible & Visible Diagnostic messages. Heavy-Duty Components Heavy-duty L-network: 10 Amp/1000V relays, RF duty silver mica caps won't burn up. Safe, reliable, continuous 200W SSB/CW. As Small as Your Radio Tiny 6 1/2Wx1 5/8Hx7 1/2D. 2.4 lbs. SO- 39s, random wire ant. & gnd posts. Never Obsolete... Super Versatile Truly Plug & Play! No settings, only one cable (included)to plug in! Order MFJ- 939I, Icom; MFJ-939K, Ken; MFJ-939Y, Yaesu. Specify Yaesu: FT-100/450/950/ 857/897/1000MP/ 9000/2000 or other. Never Obsolete! If you get a new transceiver, simply order a new Plug and Play cable, each. Super Versatile! Works with ALL older rigs, classic transmitters, Flex, Elecraft, Tentec, QRP, others. Auto tune antenna -- touch tune button on any MFJ-939I/K/Y for any rig.

5 MFJ 1500 Watt Remote Auto Tuner Place this MFJ-998RT remote tuner at your antenna to match high SWR antennas/long coaxes -- greatly reduce losses for high efficiency... Match Ohms, 1.5 kw, SSB/CW, MHz... Match coax/wire antennas... Weather-sealed... Remotely powered thru coax... Amplifier, radio, tuner protection... Output static/lightning protection... StickyTune™ always tunes when power folds back... DC power jack... MFJ-998RT Ship Code D Bottom Chassis Inside View damage. Automatic inductor and capacitor limiting prevents tuning extreme loads which can destroy your tuner. Your tuner will not tune if more than 75 Watts with SWR greater than 3:1 is applied or if more than 125

Watts is applied. Tuner output is static electricity and lightning induced surge protected. MFJ exclusive StickyTune™ Very high SWR can fold back transmitter power and prevent tuning caused by extreme differences in loads (example: changing bands and other conditions). But MFJ exclusive StickyTune™ always tunes with a simple on/off power cycle and re-transmit. Tunes Coax fed and Wire Antennas Tunes both coax fed and wire antennas. Has ceramic feed-through insulator for wire antennas. 2 kv Teflon (R) insulated SO prevents arcing from high SWR. High Power, Highly Efficient A highly efficient L-network matches Ohms at full 1500 Watts legal limit SSB/CW 1.8 to 30 MHz with Hi-Q Ls, Cs. MFJ-998RT Learns as you Operate As you operate, the MFJ-998RT automatically tunes for minimum SWR and remembers your frequency and tuner settings. The next time you operate on that frequency and antenna, its tuner solution is restored in milliseconds and you re ready to operate! Highly Intelligent, Ultra-fast Tuning MFJ InstantRecall™ recalls stored tuning solutions from 10,000 memories. For new frequencies, MFJ Intelli-Tune™ measures your antenna impedance and instantly determines the correct matching components. If antenna impedances cannot be measured, MFJ AdaptiveSearch™ searches only the relevant components that can match your antenna giving you ultra-fast tuning. Field upgradeable firmware. Requires VDC at 1.4 Amps maximum or 110 VAC with optional MFJ-1316, Weighs 9.5 lbs /4Wx6 3 /4Hx17 1 /2D inches. Tune your antenna AT your antenna! Get greatly reduced losses and high efficiencies with long coax runs and high SWR antennas with this new MFJ- 998RT 1.5 kw Remote Antenna Tuner. Weather-Sealed A tough, durable weather-sealed ABS cabinet with over-lapping lips, sealing gasket and stainless steel chassis protects the MFJ-998RT from all kinds of weather. No Power Cable Needed! No power cable needed -- remotely powered through coax. Includes MFJ-4117 Bias- Tee with on/off switch for station end of coax. Has 12 VDC jack for power cable, if desired. Fully Protected MFJ exclusive algorithms protect your tuner, radio and RF power amplifier from 600W Remote IntelliTuner™ 300W Remote IntelliTuner™ 200W Remote IntelliTuner™ MFJ-994BRT -- It s perfect for 600 Watt SSB/CW amplifiers like Ship Code C Ameritron s AL-811/ALS- 600/ALS-500M. Matches Ohms. Coax/wire antennas, MHz. Fully weather-sealed for outdoor use. Remotely powered through coax. Tough, durable, built-to-last cabinet, 9 1 /4Wx3Hx 14 1 /4D inches, 4 lbs. Includes MFJ-4117 BiasTee Power Injector. MFJ-994BRT MFJ-993BRT handles 300 Watts SSB/ CW. Matches an extra-wide Ohm impedances. Use coax fed or wire antennas from MHz. MFJ-993BRT Ship Code C Fully weather-sealed for remote outdoor or marine use. Remotely powered through coax. Tough, durable, built-to-last cabinet measures 9 1 /4Wx3Hx14 1 /4D inches. Weighs just 4 pounds. Includes MFJ BiasTee Power Injector. MFJ-926B, 200 Watts SSB/CW, matches Ohms, Coax/wire MFJ-926B Ship Code C antennas, MHz. Includes BiasTee. Fully weather-sealed for remote outdoor or marine use. Remotely powered through coax. Tough, durable, built-to-last cabinet measures 9 1 /4Wx3Hx14 1 /4D inches. Weighs just four pounds. MFJ... The World Leader in Ham Radio Accessories! 5

6 MFJ-989D 1500 Watt legal limit Antenna Tuner New and improved! World s most popular legal limit antenna tuner just

got better -- with no increase in price! You get better efficiency, lower losses, and a new true peak-reading meter. Easily handles full 1500 Watts SSB/CW, 1.8 to 30 MHz including MARS/WARC bands. Patent Pending New 500 pf air variable capacitors Large, self-cleaning MFJ-989D New AirCore TM Roller Inductor with wiping contact gives new fast-tune Crank Knob excellent low-resistance connection without contact Ship Code D New TrueActive TM Peak-Reading arcing or burning. Cross-Needle SWR/Wattmeter with New fast-tune crank knob lets you reset new Super-bright LED your roller inductor quickly, smoothly and New High-Voltage Current Balun accurately. New rugged Cabinet maintains hi-Q A precision gear driven 3-digit turns counter lets you accurately reset your roller Made in the U.S.A. inductor for quick band changing. The world's most popular legal limit TrueActive antenna tuner just got better -- much better -- with no increase in price! TM Peak Reading SWR/Wattmeter You get better efficiency, lower losses New TrueActive TM peak reading SWR/ and a new true peak reading SWR/Wattmeter. It easily handles full 1500 Watts Wattmeter lets you read true peak or average power on all modes. Large, easy-to-read super-bright LED lighted Cross- SSB/CW and covers 1.8 to 30 MHz, including MARS and WARC bands into Needle meter lets you read SWR and forward/reflected (3000/ 300 Watt ranges) balanced or unbalanced loads. You can match dipoles, verticals, power at a single glance. Uses 9-Volt inverted vees, random wires, beams, balanced lines, coax, mobile whips, short- battery and/or 12 VDC or 110 VAC with MFJ-1312D, wave -- nearly any antenna. MFJ High Voltage You get everything you've ever wanted Current Balun in a high power, full featured antenna New high voltage tuner -- extremely wide matching range, current balun lets you lighted Cross-Needle SWR/Wattmeter, tune high and low antenna switch, dummy load and balun. impedance balanced Massive Transmitting Capacitors lines without core saturation or voltage New huge 500 pf air variable capacitors give you twice the capacitance for much more breakdown. efficient operation on 160 and 80 Meters. It's constructed Specially shaped plates give low minimum capacitance resulting in an extremely inch toroid cores and with two giant 2 1/2 wide matching range thru 10 Meters. wound with high voltage wire connected to New larger, more attractive capacitor knobs with easy-to-see dials make tuning high-voltage glazed much easier and precise. ceramic feedthrough MFJ AirCore TM Roller Inductor insulators. with new fast-tune Crank Knob Super Antenna New and improved AirCore TM Roller Switch Inductor gives you lower losses, higher Q MFJ-989D's and handles more power with no self-resonances. It gives you cool, efficient and antenna switch is super heavy duty smooth tuning on all bands and it's air core made of two individual ceramic wafers can't burn up! 6 MFJ... The World Leader in Ham Radio Accessories! wired in parallel. Extra wide spaced, heavy duty contacts handle extreme voltages and currents. We've never burned one up! You can select two coax antennas (directly or through tuner), balanced line/ random wire, or built-in dummy load. Built-in Dummy Load A full-size 300 Watt non-inductive 50 Ohm dummy load is built-in. You'll find it handy for transmitter tuning, testing and repairing rigs, setting power level, adjusting mic gain and more. New Cabinet maintains high Q New roomy cabinet helps maintain components high Q. Vent holes keeps components cool. Super construction -- non-stripping PEM nuts,

wing-nut ground post, fire-retardant epoxy glass PC board, and heavy gauge wire throughout. Measures 12 7/8Wx6Hx11 5/8D inches. Lexan Front Panel The MFJ-989D has a new nearly indestructible multi-color Lexan front panel. Its detailed logging scales and legends will be legible for a lifetime of DXing. Wide Range T-Network The MFJ-989D uses the time-tested wide range T-Matching Network. It gives you the widest matching range and is the easiest to use of all matching networks. With MFJ's new high value 500 pf air variable capacitors and new low loss roller inductor, it easily handles high power efficiently. No Matter What™ Warranty Every MFJ tuner is protected by MFJ's famous one year No Matter What™ limited warranty. We will repair or replace your MFJ-989D no matter what (at our option) for one full year. Patent Pending

7 MFJ KW Differential-T™ Antenna Tuner... Gives you absolute minimum SWR... Simple 2-knob tuning... Lighted Cross-Needle SWR/Wattmeter... AirCore™ Roller Inductor... 6-position antenna switch... Balun for balanced lines MHz coverage MFJ Ship Code E MFJ's innovative Differential-T™ tuner uses a differential capacitor that makes tuning easier than ever. Gives minimum SWR at only one setting. Broadband design ends constant retuning. The MFJ-986 is a rugged roller inductor antenna tuner that handles 3 KW PEP SSB amplifier input power (1500 Watts PEP SSB output power). Tunes MHz continuously, including MARS and all the WARC bands. MFJ's exclusive AirCore™ Roller Inductor gives absolute minimum SWR -- something tapped inductors just can't do. 3-digit turns counter plus a spinner knob gives precise inductance control so you can quickly retune your frequency. A super-bright LED lighted peak/average reading cross-needle meter shows SWR, forward and reflected power at a single glance! You get a 6-position antenna switch that lets you select two coax lines and/or random wires (direct or through tuner), balanced line and external dummy load. The MFJ TrueCurrentBalun™ for balanced lines minimizes feedline radiation that causes field pattern distortion, TVI and RF in your shack. Ceramic feedthru insulators for balanced lines withstand high voltages and temperatures. Differential-T Tuner™.... A new twist on proven technology Replacing two variable capacitors with a single differential capacitor gives wide range T-network tuning with just two controls -- a Reading SWR/Watts LED Meter! tuning capacitor and a roller inductor. Simple 2-knob tuning makes tuning easier than ever. You get minimum SWR at only one setting and a broadband response that ends constant retuning. You'll spend your time MFJ AirCore™ roller inductor QSOing instead of fooling with your tuner. The compact 10 3/4x4 1/2x15 inch all-aluminum cabinet has plenty of room to mount the roller inductor away from metal surfaces for highest Q -- you get high efficiency and more power into your antenna. Wide-spaced tuning capacitor plates let you run high power without arcing. TrueActive™ Peak Reading SWR/Wattmeter New TrueActive™ peak reading SWR/ Wattmeter lets you read true peak or average power on all modes. Large, easy-to-read super-bright LED lighted Cross- Needle meter lets you read SWR and forward/reflected (2000/200 Watt ranges) power at a single glance. Uses 9-Volt battery and/or 12 VDC or 110 VAC with MFJ-1312D, Lamp

on/off switch. MFJ TrueCurrentBalun™ reduces feedline radiation. Most tuners use a voltage balun that forces equal voltages on the two antenna halves. It minimizes unbalanced currents only if the antenna is perfectly balanced -- not the case with practical antennas. The MFJ-986 uses a true current balun to force equal currents in the two antenna halves -- even if the antenna is not perfectly balanced! The MFJ TrueCurrentBalun™ gives superior balance over voltage baluns and minimizes unbalanced current. This reduces field pattern distortion, concentrates your power for a stronger signal -- plus reduces TVI and RF in your shack caused by feedline radiation. MFJ-962D Compact Tuner for Linear Amplifiers MFJ AirCore™ Roller Inductor, Compact Size, Lexan scratch-proof front panel... New! TrueActive™ Peak Reading SWR/Watts LED Meter Why settle for a mere 300 Watt antenna tuner when a few extra dollars let you add real power when you're ready? The MFJ-962D lets you use your barefoot rig now, then when you're ready... When you're ready... you can add a powerhouse linear amplifier at no additional cost. MFJ-962D handles 1500 Watts PEP SSB amplifier input power (800 Watts PEP SSB amplifier output power). Perfect for Ameritron's best selling 800 Watt AL-811H or 600 Watt AL-811 amplifiers. Features MFJ's AirCore™ Roller Inductor, new aluminum-skirted New! True-Active™ Peak MFJ's exclusive super heavy duty Air-Core™ Roller Inductor has an air core that can't burn up! Get ultra high-q, lowest loss, highest efficiency and highest power handling of any roller inductor in ham radio. MFJ's exclusive Self-ResonanceKiller™ keeps potentially damaging self-resonances away from your operating frequency. Large, self-cleaning wiping contact gives excellent low-resistance connection without contact arcing or burning. Solid 1/4 brass shaft with self-align bearings gives smooth non-binding rotation... handles AMERITRON's AL-811H! MFJ-962D knob set including a weighted deluxe spinner knob, ultra compact size (10 3/4 x 4 x 10 7/8 inches) and scratch-proof nearly indestructible multi-colored Lexan front panel. Two transmitting tuning capacitors and MFJ's exclusive AirCore™ roller inductor gives precise control to get Ship Code C your SWR down to an absolute minimum. Get extremely wide matching range from 1.8 to 30 MHz continuously, including MARS and WARC bands. MFJ's AirCore™ roller inductor has an air core that can't burn up. You get ultra high-q, low loss and MFJ's exclusive Self-Resonance Killer™ that eliminates damaging self-resonances. MFJ-962D now has the True-Active™ peak-reading SWR/Watts LED Meter! Lets you read true peak or average power on all modes. A super-bright LED lighted peak and average reading Cross-Needle SWR/Wattmeter makes tuning quick and easy. At one glance you can read SWR, forward and reflected power in two power ranges. Meter LED uses 12 VDC or 110 VAC with MFJ-1312D, A 6-position ceramic antenna switch lets you select 2 coax lines (direct or through tuner), random wire and balanced lines. You get a heavy duty MFJ TrueCurrentBalun™ for balanced lines. High-voltage ceramic feedthru insulators let you operate high power into balanced feedlines. Toll-free

8 MFJ 2500 Watts ContinuousCarrier™ Tuner Silver plated Edge-Wound Roller Inductor /500 pf Variable Capacitors... Antenna Switch... 4-Core Balun... true Peak Cross-Needle SWR/Wattmeter... Dummy Load... Extremely Wide Matching

Range... Patent Pending... The MFJ-9982 ContinuousCarrier™ antenna tuner handles 2500 Watts Ship Code F continuous carrier output on all modes and all HF bands into most unbalanced antennas -- even on 160 Meters where even the best antenna tuners fail! The MFJ-9982 gives you every feature you'll ever want in a high power tuner -- wide matching range, 1.8 to 30 MHz coverage, 6-position antenna switch, 4-core balun, dummy load, true peak/average lighted SWR/Wattmeter, 6:1 reduction drives with detailed logging scales, 3-digit turns counter, extra large knobs. MFJ New Components, New Technologies The Heart and Soul of the MFJ-9982 is its roller inductor and variable capacitors. MFJ's high power, high-q continuous current AirCore™ roller inductor is no ordinary roller inductor! It's edge wound from thick.06-inch silver-plated solid copper strap. It can carry huge circulating RF currents and withstand tremendous heat that'll melt or burn up ordinary roller inductors. Self-insulating construction reduces stray capacitance -- keeps self-resonant frequencies high and out-of-the-way. Dual, silver-plated compression wheels give ultra low-resistance contacts. New fast-tune crank knob. High-current, high-capacitance 1000 pf and 500 pf air variable capacitors have low minimum capacitance and are self-insulating. These newly developed capacitors and MFJ's patent pending innovation gives you very high efficiency on 160/80 Meters and extremely wide matching range on 10/12/15 Meters at 2500 Watts -- a feat only the MFJ-9982 has achieved. Antenna Tuner/Artificial Ground MFJ MFJ-934 is unique because it has a built-in artificial ground. A ground matching knob lets you switch in inductance to bring an attached wire to a low impedance current point to form an artificial ground. A push button lets you use the Cross- Needle Meter to monitor for maximum ground current. With an artificial ground to work against, you'll be surprised to see how well a random wire can work. You get a 300 Watt full featured antenna tuner that covers MHz. Lighted CrossNeedle meter reads SWR/Forward/ Reflected power at-a-glance. 4:1 balun for balanced lines. Features efficient airwound inductor, high current/voltage 12-position inductor switch and two 1000 volt air-variable capacitors. Tunes all antennas and feedlines including random wire, coax and balanced lines /8Wx3 1 /2Hx8D in. Hi-Voltage/Current Antenna Switch The antenna switch is completely isolated to handle high-voltage high impedance antennas. High-current, low impedance antennas are handled by parallel sets of highcurrent contacts of two ceramic switches. New 4-Core Balun Powerful balun -- Four 2 1 /2 inch cores, 12-gauge Teflon™ wire. Run balanced lines at full 2500 Watts SSB/CW continuous, 24/7. New Balanced Line Feed-Thru Insulator Allows massive antenna currents to flow directly to the antenna capacitor without passing through lossy screws or bolts. TrueActive™ Peak Reading Circuit New TrueActive™ circuit reads true peak or average power on all modes. Super-bright LED lighted Cross-Needle meter reads SWR/forward/reflected power Watt Dummy Load 1500 Watt air-cooled non-inductive 50 MFJ Artificial RF Ground Places your rig near earth ground potential! MFJ Create an artificial ground with this MFJ-931! It effectively places your rig near actual earth ground potential even if your rig is on the second floor or higher with no earth ground possible! It electrically places a far away RF ground at your rig. How's your RF ground? Do you have RF hot spots that bite you when you transmit? Do you have RF

feedback that causes your rig to quit working on some bands? Do you have TVI/RFI that makes your neighbors hard to live with? Do you get weak signal reports because of extreme ground losses or radiation pattern distortion? These problems could be caused by poor RF grounding, especially if your rig is on a second floor with no ground at all. Even if you have a good ground, a long connection wire can ruin its effectiveness by isolating true RF ground from your rig. 8 MFJ... The World Leader in Ham Radio Accessories Ohm resistor. 100W/10 min., 1.5kW/10 sec. New Cabinet maintains high Q New roomy cabinet maintains high Q. Vent holes. Heavy gauge, .08 inch aluminum braced chassis. Vinyl cover, nonstripping PEM nuts, heavy 10-gauge or copper strap wiring throughout. 13^{3/4}Wx7Dx16^{1/4}D inches. 15 pounds. Patent Pending 4 Foot Ground Rod Durable four foot copper bonded steel earth ground rod is a tough 3/8 in. diameter that will last. Pointed end makes it easy to drive into the ground. Use it to tie your MFJ equipment to a single earth ground to help bleed off static and RFI and prevent RF hot spots. Use several to form a good RF ground for random, long wire and vertical antennas. Continued... MFJ-931 creates an artificial ground! It resonates a random length of wire thrown along the floor and produces a tuned counterpoise. This artificial ground effectively places your rig near actual earth ground potential with no earth ground possible. Reduces the electrical length of the ground connection wire to virtually zero by tuning out its reactance. MFJ-931 connects between your rig and a random length of wire or a connecting ground wire. It s tuned for maximum ground current using the built-in RF ammeter. 1.8 to 30 MHz. 7 1 /2Wx 3 1 /2 Hx7D in. RF tight alu. cabinet.

9 MFJ 300W Roller Inductor Tuner World s only 300 Watt AirCore TM Roller Inductor Antenna Tuner gives you absolute minimum SWR... Covers 6 Meters thru 160 Meters... MFJ-969 gives you MFJ s superb AirCore TM Roller Inductor and full 6 Meters through 160 Meters coverage! You get everything you ve ever wanted including Watts PEP SSB full featured antenna tuner, widest matching range, full-size lighted Cross-Needle SWR/Wattmeter reads true peak forward power, QRM-Free PreTune TM, 8 position antenna switch, built-in 50 Ohm dummy load, heavy duty 4:1 balun -- all in a tough, attractive cabinet. MFJ s famous one year No Matter What TM limited warranty. MFJ-969 s AirCore TM Roller Inductor, gear-driven turns counter and spinner knob gives you exact inductance control for minimum SWR. MFJ s exclusive AirCore TM Roller Inductor has an air core that can t burn up! You get ultra high-q, the lowest loss, highest efficiency and highest power handling More hams use MFJ- 949E antenna tuners than any other antenna tuner in the world!... Why? Because the world s leading tuner has earned a worldwide reputation for matching just about anything. Full MHz Operation Custom designed inductor switch, 1000 volt tuning capacitors, Teflon R insulating washers and proper L/C ratio gives you arc-free no worries operation with up to 300 Watts 1.8 to 30 MHz. Tunes any antenna Tunes out SWR on dipoles, verticals, inverted vees, random wires, beams, mobiles... nearly anything! Use coax, random wire or balanced lines. Has heavy duty 4:1 balun. Custom inductor switch The inductor switch is the most likely component to burn up in

any antenna tuner. MFJ's inductor switch in the MFJ-949E was custom designed to withstand the extremely high RF voltages and currents that are developed in your tuner. of any roller inductor in ham radio. MFJ's exclusive Self-Resonance Killer™ keeps potentially damaging self-resonances away from your frequency. Huge self-cleaning wiping contact gives you excellent low-resistance connection without contact arcing or burning. Solid 1/4 inch brass shaft, self-align bearings -- smooth non-binding operation. The MFJ-969 covers all frequencies from 160 Meters thru 6 Meters, including the magic band -- the widest matching range of any full featured antenna tuner. Match any antenna Match dipoles, verticals, inverted vees, random wires, beams, mobile whips, SWL receiving antennas -- nearly any antenna. You can use coax cable, random wire or balanced lines. Has heavy duty 4:1 balun. True Peak Reading Cross-Needle Meter MFJ's new ActivePeak ReadingCircuit™ accurately reads true peak 8-Position Antenna switch lets you select two coax fed antennas, random wire/balanced line or built-in dummy load through your MFJ-949E or direct to your transceiver. Big Lighted Cross-Needle Meter MFJ's full-size 3-inch lighted cross-needle Meter lets you easily read SWR, true peak forward and average reflected power simultaneously on 300 Watt or 30 Watt ranges. Lamp has on/off switch. Requires 12 VDC or 110 VAC with optional MFJ-1312D, QRM-Free PreTune™ MFJ's QRM-Free PreTune™ lets you pre-tune your MFJ-949E off-the-air into its built-in dummy load! Makes tuning your actual antenna faster and easier and helps you make friends in the amateur radio community by being nice. Plus Much More! Full size built-in non-inductive 50 Ohm dummy load, scratch-proof Lexan multi-colored front panel, superior cabinet and construction and more! Measures a sleek and compact 10 5/8x3 1/2x7 inches. forward power -- an MFJ exclusive. MFJ's lighted Cross-Needle SWR/Wattmeter reads SWR, true peak forward and average reflected power simultaneously on 300 Watt or 30 Watt ranges. Lamp has on/off switch and uses 12 VDC or 110 VAC with MFJ-1312D, ActivePeakReading Circuit™ can also use a 9 volt battery. MFJ's 8 positions let you select two coax fed antennas, random wire/balanced line or built-in dummy load for use through your MFJ-969 or direct to your rig. MFJ's QRM-Free PreTune™ lets you pre-tune MFJ-969 off-the-air into a built-in dummy load without causing QRM. Pre-tuning into a dummy load makes tuning your actual antenna quick and easy! The MFJ-969 has a full size non-inductive 50 Ohm dummy load. You'll find it handy for tuning, testing, repairing rigs, setting power level, adjusting mic gain, etc. The tough aluminum case has a scratch-proof multi-colored Lexan front panel. Compact 3 1/2Hx10 1/2Dx9 1/2W inches. MFJ-969 AirCore™ Roller Inductor Ham Radio's Most Popular 300 Watt Tuner More hams use MFJ-949s than any other antenna tuner in the world! MFJ An Econo MFJ-949E for Only! MFJ-949E MFJ Ship Code C All the features of the MFJ-949E -- world's favorite antenna tuner -- for an incredibly low! Dummy load not included; coax connector for one on rear panel. Includes custom designed inductor switch, 600V tuning capacitors, full size 3 Cross-Needle meter, 8 position antenna switch, heavy duty 4:1 balun, full 1.8 to 30 MHz operation, Compact 10 1/2x3 1/2x7 inches. Pre-made Premium Coax Patch Cables Weather resistant 50-Ohm coax patch cables with presoldered-on PL-259 connectors. Select length and choose from RG-58, RG-8X or RG-213 type. Made in U.S.A. N-models are terminated

with the N-type connectors. length 3 ft. RG-58 MFJ-5803 Price 6.95 RG-8X MFJ-5803X Price ft. MFJ Toll-free MFJ-5806X MFJ RG-213 (H) MFJ-5803H MFJ-5803NH MFJ-5806H Price MFJ-5806NH 9 ft. 12 ft. 18 ft. 25 ft. 50 ft. MFJ-5809 MFJ-5812 MFJ-5818 MFJ-5825 MFJ MFJ-5809X MFJ-5812X MFJ-5818X MFJ-5825X MFJ-5850X MFJ-5809H MFJ-5812H MFJ-5818H MFJ-5825H MFJ-5850H 100 ft. MFJ MFJ-58100X MFJ-58100H 50 ft. MFJ-5850E RG-58, 50 ft. open end, PL-259 on one end.

10 MFJ Compact Mobile HF Antenna Tuner Covers HF and 6 Meters, Handles 300 watts, Has Antenna Bypass Switch The compact MFJ-945E mobile antenna tuner covers 6 Meters and HF (MHz), handles 300 PEP watts, and tunes coaxial cable-fed antennas, plus random wires. Don t leave home without this mobile tuner, and have a a better trip as the MFJ- 945E extends antenna bandwidth and eliminates the need to stop, go outside, and readjust your mobile antenna. The frustratingly narrow bandwidth of mobile antennas can be greatly broadened with this tuner. Of course, this diminutive tuner can be used to tune coax-fed home station antennas of all kinds, too, as well as random wires. The cross needle meter shows SWR, forward, and reflected power -- at a glance. The MFJ-971 is a tiny, inexpensive portable 200 watt PEP antenna tuner that s a perfect match for today s ultra-compact HF transceivers while offering features especially designed for the QRP operator. Covering 1.8 to 30 MHz, this T-match tuner can match coax-fed antennas, as well as those fed with balanced feedline, and random wires. Built-in 4:1 toroid balun for balanced lines. From the factory, the MFJ-971 offers forward power readings of 30 watts maximum or 300 watts, on its cross needle meter. You can monitor forward power, reflected power, and SWR simultaneously. For dedicated QRP operation, swapping of a jumper plug internally converts the maximum forward reading on the meter to 6 watts. Great for use with MFJ s 90/94 series of CW and SSB individual band transceivers. The meter lamp may be powered by an external 12 VDC It s not just a tuner, it s an 8-position antenna switch. The photo tells the story: you can select among two coaxial-fed antennas, a balanced line (4:1 toroid balun included) or random wire or an external dummy load, and for each you can select direct (bypassing the tuner) or tuned. This tuner is rated at 300 watts and can match dipoles, vees, random wires, and balanced and coax feedlines, from 1.8 to 30 MHz. You get a lighted cross needle MFJ s Smallest VERSA TUNER MFJ-901B MFJ s smallest (5x2 1 /2x6) and most affordable 200 Watt PEP VERSA TUNER. Match dipoles, vees, random wires, verticals, mobile whips, beams, balanced and coax lines continuously from MHz. A 4:1 balun for balanced lines is built into this MFJ-901B tuner. Three adjustment controls for maximum matching capability. It reads forward/reflected power in 300/60 and 30/6 watt ranges. The ON/ OFF lamp switch is handy for SWR/wattmeter with on/off switch (lamp uses 12 VDC or 110 MFJ VAC with MFJ-1312D, 15.95). The meter shows SWR, and forward and reflected power in 300/60 and 30/6 watt ranges selected at the front panel. An efficient 12 position airwound inductor gives low losses for more power out. Uses 1000 Volt capacitors. Random Wire Tuner for HF MFJ Operate all bands MHz -- anywhere with any transceiver -- using a single random wire and MFJ s Random Wire Tuner. Small enough to carry in your hip pocket. Handles 200 watts

output. Matches high or low impedance loads by interchanging input and output, so it uses SO-239 connectors for both. Measures a compact 3 1/2Wx2 1/4Hx5 1/4D in. MFJ-945E changing light conditions in your vehicle; the meter lamp is 12 VDC powered with optional MFJ-1312D, Large, conveniently-placed controls make tuning fast and easy. The bypass switch lets you bypass the tuner (connecting your antenna and transmitter directly) while still using its SWR/wattmeter. The back panel has SO-239 coaxial connectors for your transmitter and antenna feedline and a wing nut post for your ground. For at-home use with a random wire a standard banana plug fits neatly into the antenna jack. An efficient airwound inductor gives you lower losses for more watts output. The small, 8Wx2Hx6D inch black aluminum cabinet takes up little space. A mobile mounting bracket, MFJ-20, is Add 2.00 shipping for the bracket if ordered separately. Has MFJ's One Year No Matter What TM limited warranty. Portable Tuner for QRP to Full-bore Transceiver source if you desire (MFJ-1312D, 15.95). MFJ-971, while an all-around low-power tuner, is especially suited for MFJ transceivers and power packs. It matches them in size and styling and special brackets allow connecting the units together physically into an attractive and compact package. Optional bracket set, p/n: is As in all good antenna tuners, three controls give flexibility in matching: Inductance (12 positions), Transmitter, and Antenna. Once you find the proper setting on each band, just record it for future instant band changing. Rear panel includes SO-239 coaxial jacks for transmitter and antenna; 2 sturdy binding posts for balanced line; another binding post for a random wire; ground post; 12 VDC input jack for meter lamp; and low/high power meter range switch. The MFJ-971 is backed by MFJ's No Matter What TM warranty. Measures a tiny 6X6X2.5 inches. MFJ 300-Watt Super Value Versa Tuner Covers Meters MFJ-941E MFJ... The World Leader in Ham Radio Accessories The aluminum cabinet has a durable scratch-proof multi-color Lexan front panel to complement your rig and fits right into your station /8Wx2 7/8Hx7D inches. MFJ-941EK Antenna Tuner Kit MFJ-941EK Ever wish you could just build your own? But then you get a list of the prices together and the time and effort to put one together and realize it is just not worth it. MFJ has now made it fun and economical to build and test your very own MFJ antenna tuner. You get the popular MFJ-941E, all of its guts totally apart so you can build it yourself. The finished kit features MHz coverage, 300 Watts power handling, 1.5 inch Cross-needle SWR/Wattmeter, 1000 Volt capacitors, Lexan front panel decal, all aluminum chassis and cover. All knobs, hardware, components and switches are here to build your very own MFJ tuner!!! You don't have to punch a clock, but you don't get an MFJ paycheck either, just the joy and pride of building your own.

11 MFJ tiny Travel Tuners Tiny 4 1/2x2 1/4x3 inch tuner handles full 150 Watts! Covers 80-6 Meters, MFJ brings you the world's smallest full power 150 Watt 80-6 Meter Antenna Tuner. Extra wide matching range lets you tune nearly any antenna. It's no toy, it's got guts! Built with real air variable capacitors (600 Volt, 322 pf) and three stacked powder iron toroids to handle real power -- not just QRP. Bypass switch lets you bypass tuner when you don't need it.

You can use nearly any transceiver at full power with nearly any coax fed or random wire antenna for portable, home or mobile operation. It is perfect for compact rigs like Icom IC-706MKIIG, Yaesu FT-100D, Kenwood TS-50, QRP rigs and others with a built-in SWR meter. MFJ 6 Meter/VHF/UHF Antenna Tuners MFJ 6 Meter Antenna Tuners MFJ-906, Six Meter Ship code A tuner. Low SWR with most any coax fed antenna. You'll get more power out of your transceiver and into your antenna for more DX. Lighted Cross-Needle SWR/Wattmeter shows SWR, forward, reflected power, 300/60 and 30/6 Watt ranges. Order MFJ-1312D, for meter lamp. Built-in bypass switch, handles 100 Watts FM, 200 Watts SSB PEP. Works with solid state and tube rigs, MHz. 8Wx2 1/2Hx3D inches. MFJ-903, Like MFJ-906. Less meter/bypass switch. Tiny 5Wx2 1/4Hx3D 2 has tuner bypass switch, tunes nearly anything! Now covers 6 Meters! Tiny Tuner with Cross-Needle SWR/Wattmeter and 4:1 Balun MFJ-904H MFJ-904H is the same as MFJ-902 Tiny Travel Tuner but has a large 1.5 inch Cross-Needle SWR/Wattmeter and a 4:1 balun for tuning balanced lines. It includes binding post connections for balanced line antennas and random wire antennas. The Cross-Needle meter shows SWR, forward and reflected power simultaneously at-a-glance. A push button selects forward or reflected power in 300/60 and 30/6 Watt ranges. Measures a compact 7 1/4Hx2 1/4Hx2 3/4D inches. Tiny Tuner with Cross-Needle SWR/Wattmeter MFJ-904, Same as MFJ-904H, has Cross-Needle SWR/Wattmeter, see above in MFJ-904 but no balun. Measures 7 1/4Hx2 1/4Hx2 3/4D inches. MFJ inches makes it great for the backpack! MFJ-902B MFJ-921/ Ship code A Operate anywhere, anytime with a quick easy set-up! Tune out SWR on your mobile whip from inside your car. Operate in your apartment with a wall-to-wall antenna or from a motel room with a wire dropped from a window or from a mountain top with a wire over a tree limb. It is perfect for DXpeditions or field day -- packs up quickly and takes up little space. Helps you be prepared for emergencies -- this tuner and a wire antenna can be packed and set-up just about anywhere. MFJ-902B is so small and handy, you'll rely on it wherever you go -- easy to pack away in your briefcase, suitcase, backpack, glove compartment or desk drawer. It's tiny enough to slide in your back hip pocket! 4 1/2Wx2 1/4Hx2 3/4D inches. MFJ Tiny Tuner w/4:1 Balun MFJ-902H, is similar to MFJ-902 but covers Meters and has a 4:1 balun for tuning balanced line antennas.binding post connections for balanced lines. Compact 5 3/4Wx2 1/4Hx2 3/4D inches. MFJ True Dual Band VHF/UHF 200W Antenna Tuner MFJ-923 MFJ-923 VHF/UHF Dual Band Antenna Tuner covers the complete 144 MHz and MHz frequency ranges. Built-in Cross-Needle SWR/Wattmeter measures SWR, forward and reflected power in two ranges: 300 or 30 Watts. Meter is usable for both bands 144 and 440 MHz. Handles 200 Watts. Designed to match a wide range of impedances for both mobile and base operation. Single input and output SO-239 for radio and antenna connection. Perfect match for today's dual band radios with combined single output and dual band antennas. Wing nut post for ground, black aluminum cabinet, compact at 9 1/2Wx4 1/2Hx2 5/8D. 144/220 MHz or 440 MHz Tuner MFJ-921 Dual Band VHF tuner covers 2 Meters/220 MHz. Built-in SWR/Wattmeter measures SWR in 2 power ranges: 300 or 30 Watts. Meter is usable for both 144 MHz and 220 MHz bands. Low SWR with practically any antenna. Handles 200 Watts. Designed to match a wide range of impedances for both mobile/base operation. SO-239 input/output

connectors, wing nut post ground. Black aluminum cabinet measures a compact 8x2 1/2x3 inches -- fits just about anywhere. MFJ-924, MHz band only. Toll-free

12 MFJ Balanced Line Antenna Tuners Superb balance... Extremely wide matching range... Covers MHz... Cross-Needle SWR Wattmeter... Handles 300 Watts... Compact size... The MFJ-974HB is a fully balanced true balanced line antenna tuner. It gives you superb current balance throughout its very wide matching and frequency range. Johnson Matchbox MFJ-974HB Ship Code C For decades, the Johnson Matchbox has been the standard of comparison for balanced line tuners. But, it had a severely limited matching range and covered only 80, 40, 20, 15 and 10 Meters. The MFJ-974HB is its successor. It meets today's needs and even surpasses the Johnson Matchbox outstanding performance. Everything You Need The MFJ-974HB gives you excellent current balance, very wide matching range(Ohms) and covers 1.8 through 54 MHz continuously including all WARC bands, 160 Meters, 6 Meters and the new 60 Meter band. Handles 300 Watts SSB PEP and 150 Watts CW. Tuning is fast and easy - - just three tuning controls. You can even adjust for highly efficient broadband low-q operation or use higher Q when you encounter extreme loads. A large three-inch lighted Cross-Needle SWR/Wattmeter lets you read SWR, peak or average forward and reflected power all at a glance on 300 or 30 Watt ranges. A ground post is provided to ground one output terminal so you can also tune random wires and coax fed antennas. Compact 7 1/4x6Hx8D inches fits anywhere. Tunes any Balanced Line The MFJ-974HB tunes any balanced lines including 600 Ohm open wire line, 450/300 Ohm ladder lines, 300/72 Ohm twin lead - - shielded or unshielded. Superb current balance minimizes feedline radiation that can cause troublesome TVI and RFI, painful RF bites, mysterious RF feedback problems and radiation pattern distortion. Excellent Balance, Excellent Design The MFJ-974HB is a fully balanced wide range T-Network using four gear driven 1000-Volt air variable capacitors and high-q air wound tapped inductor for Meters and separate inductors for 6 and 160 Meters. The tuning components are mounted symmetrically to insure electrical balance. A 1:1 current balun is placed on the low impedance 50 input side to convert the balanced T-Network to unbalanced operation. The balun is made of 50 ferrite beads on RG-303 Teflon coax to give exceptional and efficient isolation. It stays cool even at maximum power. MFJ Ship Code E The MFJ-976 is a 1500Watt full Legal Limit fully balanced antenna tuner. You get superb current balance, very wide matching range (Ohms) and continuous MHz coverage including all WARC bands. Handles full 1500 Watts SSB and CW. You can tune any balanced lines including 600 Ohm open wire line, 450/ 300 Ohm ladder lines, 300/72 Ohm twin lead -- shielded or unshielded. Also tunes random wires and coax fed antennas. MFJ's fully balanced extremely wide-range T-network gives you simple, fast three knob tuning. No complicated switching between high and low impedance and switching in additional capacitance of L-networks. Four separate 500 pf in two gangs gives you a total of 2000 pf for highly efficient low loss operation on 160 Meters. You get excellent 10 Meter performance because of MFJ's low minimum capacitance and exclusive Self-Resonance Killer high-q AirCore TM roller

inductor with silver plated contacts. Heavy duty 1:1 current balun gives you 12 MFJ... the World Leader in Amateur Radio Accessories! Balanced Line = Extremely Low Loss Balanced lines give extremely low loss. Doublet, horizontal loop, vertical loop, quad, double extended Zepp, Lazy H, W8JK antennas all give efficient multi-band operation when fed with balanced lines Meter Balanced Line Tuner MFJ-974B Ship Code C MFJ-974B. Same as MFJ-974HB but for 6-80 Meter operation (no 160 Meters). Antenna Accessories MFJ-1777, feet all band doublet antenna covers Meters with balanced line tuner. Super strong custom fiberglass center insulator provides stress relief for 450 Ohm ladder line (100 feet included). Authentic glazed ceramic end insulators. Handles 1500 Watts. MFJ-18H100, feet of quality 450 Ohm ladder line. MFJ-18G100, feet of extremely strong heavy duty 7-strand, 14-gauge hard copper antenna wire. MFJ-16C06, authentic glazed ceramic end/center antenna insulators. Extra strong. Will not arc or melt. New! MFJ-16D01, Super strong custom fiberglass stress relieving center insulator for 450 Ohm ladder line. See page for more antenna accessories. MFJ 1500 Watt Fully Balanced Antenna Tuner Fully balanced MFJ-976 handles 1500 Watts legal limit... Extra-wide Ohms matching range... continuous 1.8 to 30 MHz coverage including all WARC bands... Four separate 500 pf in two gangs gives you a total of 2000 pf capacitance... Heavy duty 1:1 current balun... more! superb balance and stays cool even at 1.5kW. True active peak reading lighted Cross-Needle SWR/Wattmeter lets you read SWR, true peak or average forward and reflected power all at a glance on 300/3000 Watt ranges. New! Super-bright LED meter light. Use 12 VDC or 110 VAC with MFJ-1312D, Wx6Hx15 3/4 in. An inside view of the MFJ-976

13 MFJ Small, high efficiency Loop Tuners TM Turns any wire loop into small, high efficiency multi-band transmitting loop antenna Wire Loops and Mounts Mount for PVC Cross Loop MFJ-936B MFJ Ship Code B MFJ-935B Ship Code B Drape a wire around a bookcase or window and attach both ends to this new Ship Code C MFJ Small Loop Tuner TM. It instantly turns into a small, high efficiency multi-band transmitting loop antenna! You can operate 5.3 to 30 MHz with a full 150 Watts. No ground, radials or counterpoises needed. The excellent performance of a highefficiency small loop antenna is legendary and well proven by users all over the world. RF Bypass Switches MFJ MFJ-1705H Connect your antenna and transceiver to this MFJ RF Bypass Switch and you can switch in or bypass your antenna tuner, linear amplifier, preamp, wattmeter or other device -- switch in and bypass any coax fed device with PL-259 UHF connectors. DC to 60 MHz. SO-239 connectors Ohms. 3Wx1 1/2Hx2 1/2D inches. MFJ-1705, Watts. MFJ-1705H, Watts. You ll radiate a low angle DX signal that literally rivals full size dipoles and work incredible DX! It s a very quiet receiving antenna -- you ll hardly notice static crashes. Its high-Q reduces QRM, overloading, harmonics. It s perfect for apartments, antenna restricted areas and portable operation -- it really gets out! A 13 foot wire formed into a loop operates Meters (4 foot for M; 7 foot for M; 28 foot for M). You can tune any shape loop -- circle, square, rectangle, any odd shape. A quarter wavelength wire shaped as a circle is the most efficient. A given wire length covers about 1.5 to 1 frequency

range (i.e. 7-10/18-28 MHz, etc.). Exact frequency coverage depends on wire length, loop shape, surroundings and height above ground. Has MFJ low loss Butterfly loop tuning capacitor, no rotating contacts. Easy-Carry handle. Mount for PVC Cross on cover. See June, 1986, QST or recent ARRL Antenna Handbook for more details on small, high efficiency loops. MFJ-936B, For home/portable stations. Has relative RF antenna current meter with sensitivity control and 30/300 Watts Cross-Needle SWR/Wattmeter. $9 \frac{1}{4} \times 5 \frac{1}{2} \times 9 \frac{1}{2}$ inches. MFJ-935B, For portable/home stations. Smaller, lighter. Relative RF current meter with sensitivity control. $6 \frac{1}{4} \times 5 \frac{1}{2} \times 9 \frac{1}{2}$ inches. MFJ-933, Same as MFJ-935B less RF current meter. $6 \frac{1}{4} \times 5 \frac{1}{2} \times 9 \frac{1}{2}$ in. Variable RF Transformer MFJ Multi-tap Variable RF Transformer matches low impedance (2-50 Ohms) of mobile antennas (ham sticks, screwdrivers, etc.) to 50 Ohm transceiver. 11 impedance ratios. Use in reverse to transform high impedances to 50 Ohms. Handles 1000 Watts. 1.8 to 30 MHz. SO- 239 connectors. MFJ-57B, Has PVC Cross for mounting loop on cover, 20-15M insulated 10-gauge flexible loop, low C resistance lugs. MFJ-58B, Has MFJ-57B above, plus M, M, M loops; wire clips. Butterfly Tuning Capacitors The heart of the MFJ Loop Tuners is an extremely low loss butterfly tuning capacitor with no rotating contacts. Each handles 1500 Volts RMS and has a $\frac{1}{4}$ diameter by $2 \frac{1}{2}$ long shaft. A. MFJ-19, to 67 pf. $6 \times 3 \times 3 \frac{1}{2}$ inches. B. MFJ-23, to 136 pf. $10 \times 3 \times 3 \frac{1}{2}$ inches. New! B. A. QRPocket TM Loop Ant MFJ-9232, QRPocket TM Loop Antenna makes portable operation truly portable and fun! No ground needed! High-efficiency loop covers Meters with included flexible wire loop. handles 25 Watts. BNC Connector for transmitter, wing nut posts for loop wires. Durable, plastic cabinet, $2 \frac{1}{4} \times 4 \times 2 \frac{1}{4}$ inches. Mobile Antenna L-Matcher MFJ Matches HF mobile antennas (ham sticks, screwdrivers, etc.) Meters by adding L (inductance) at the antenna feedpoint to ground to form L-network with antenna. 11 values of switchable inductance, .2 uh-12 uh. Handles 200 Watts. SO- 239 connectors. $4 \times 3 \frac{3}{4} \times 1 \frac{3}{4}$ inches. Mobile Antenna Matcher MFJ Matches HF mobile antennas 10 through 80 Meters. Select five values of capacitance pf to add at antenna feed point to ground to form L-network with antenna. Gives you more power out. Handles 300 Watts. SO-239 connectors. Tiny $3 \frac{1}{2} \times 3 \times 1 \frac{1}{4}$ inches. Mobile Antenna C-Matcher MFJ Matches HF mobile antennas (ham sticks, screwdrivers, etc.) Meters by adding C (capacitance) at the antenna feedpoint to ground to form L-network with antenna. 11 values of switchable capacitance 30 pf-2000 pf. 600 Watts. SO-239 connectors. $3 \frac{1}{2} \times 3 \times 1 \frac{1}{4}$ inches. AutoTuner Extender TM MFJ-914 Does your rig's automatic tuner have limited matching range? MFJ- 914 transforms your antenna impedance by as much as 10 times! Puts nearly any antenna into the range of your automatic or manual tuner. Covers Meters, handles 300 Watts, has bypass position. Measures a compact $6 \times 4 \times 2 \frac{1}{2}$ inches. Toll-free

14 MFJ-259C 530 KHz to 230 MHz SWR Analyzer TM Reads complex impedance... Super easy-to-use MFJ-259C reads SWR... Complex RF Impedance: Resistance (R) and Reactance (X) or Magnitude (Z) and Phase (degrees)... Coax cable loss (db)... Coax cable length and Distance to fault...return Loss... Reflection Coefficient... Inductance... Capacitance...

Battery Voltage. LCD digital readout... covers 530 KHz-230 MHz... frequency counter... side-by-side meters... Ni-Cad/Ni-MH charger circuit... battery saver... low battery warning... smooth reduction drive tuning... more! All-in-one ham radio test set SWR Analyzer Accessories MFJ-259C Includes frequency MFJ-29D, Tote counter, RF Generator, SWR your MFJ-259C anywhere Analyzer TM, RF Resistance with this genuine MFJ custom carrying case. Has back and Reactance Analyzer, pocket with security cover for carrying dip coils, adaptors and accessories. Made of special foam-filled fabric, it cushions blows, deflects scrapes, and protects knobs, meters and displays from harm. Clear protective window for display and cutouts for knobs and connectors. Authentic MFJ logo! MFJ-29DAC, Carrying pouch, dip coil adapters, MFJ-1312D power supply. MFJ-99C, MFJ-1312D, 110/220 VAC power supply, ten Ni-MH batteries. MFJ-29DABC, Deluxe Accessory Pack has 10 Ni-MH batteries, MFJ-1312D power supply, MFJ Carrying pouch, dip coils. Save 7! MFJ-92AA10, pack MFJ NiMH AA rechargeable batteries. MFJ-5510C, VDC cigarette lighter adapter lets you use your MFJ SWR Analyzer on-the-road to make quick adjustments to your HF/ VHF/UHF mobile antennas! 18 retract-ed curly cord, 60 inches fully stretched. Easily fits in glove compartment. Adapters for your MFJ-259C MFJ-7737, PL-259 to BNC Female Adapter. MFJ-259C -- World s most popular Antenna Analyzer just got better! Now covers super wide range KHz to 230 MHz -- no gaps! Super easy to use! Just set the bandswitch and tune -- just like your transceiver. SWR, Complex antenna Impedance and frequency are all instantly displayed simultaneously! Gives you complete picture of your antenna Read SWR, return loss and reflection coefficient at any frequency all at once. Read Complex Impedance as series resistance and reactance ($R+jX$) or as magnitude (Z) and phase (degrees). Determine velocity factor, coax cable loss in db, length of coax and distance to a short or open in feet. Measure inductance in uh and capacitance in pf at actual operating frequencies. Tunable Analyzer Filter MFJ New! Exclusive MFJ tunable RF filter allows accurate MFJ SWR and impedance measurements between MHz in presence of strong RF fields. Has virtually no effect on measurements by the analyzer. Works with all SWR Analyzers. Coax Analyzer, Capacitance and Inductance Meter and more! Large easy-to-read two line LCD screen and side-by-side meters clearly display your information. Here s what you can do... Find your antenna s true resonant frequency. Trim dipoles and verticals for lowest SWR at your favorite frequencies. Adjust your Yagi, quad, loop and other antennas, change antenna spacing and height and watch SWR, resistance and reactance change instantly. You ll know exactly what to do by simply watching the displays. Perfectly tune critical HF mobile antennas in seconds for super DX -- without subjecting your transceiver to high SWR. Measure your antenna s 2:1 SWR bandwidth and analyze multiband performance! Check SWR outside ham bands without transmitting and violating FCC rules. Adjust your antenna tuner for a perfect 1:1 match without creating QRM. Take the guesswork out of building and adjusting matching networks and baluns and antennas. Accurately measure distance to short or open in failed coax. Measure coax length in feet, loss in db, velocity factor and impedance. Measure inductance, capacitance. Troubleshoot and measure resonant frequency, Q of traps, stubs, transmission lines, RF chokes, tuned circuits and baluns. Lower band can be

retuned to cover 470 to 940 KHz for maritime and 600 Meter bands. Built-in Ni-MH/Ni-CD charger circuit, battery saver, low battery warning and smooth reduction drive tuning. Use 10 AA or Ni-MH batteries (not included) or VAC with optional MFJ-1312D, Rugged, compact all-aluminum construction, 4Wx6 3/4Hx2D inches. Maritime and 600 Meter Coverage MFJ-259CM, Like MFJ-259C except the bottom band covers KHz for Maritime and 600 Meter bands. MFJ Analyzer Dip Coils MFJ-66C MFJ-66C, Plug these MFJ dip meter coupling coils into your MFJ SWR Analyzer TM and turn it into a sensitive and accurate band switched dip meter. Two coils cover MHz, depending on SWR Analyzer TM Toll-free MFJ-7727, PL-259 to SMA Female Adapter. MFJ-249C SWR Analyzer TM Save a few bucks! MFJ- MFJ-249C 249C is similar to the MFJ-259C, but less analog meters. MFJ-249C reads SWR, true impedance magnitude and frequency only on LCD module. Has nicd/nimh charging circuit, can use MFJ-259C accessories. Analyzer Current Balun This new 1:1 MFJ-917 Current balun lets you use your MFJ SWR and Antenna Analyzers on balanced line antennas and other loads. Covers MHz. 2Wx3 3/4Hx1 1/2D in. SO-239 for analyzer input. MFJ-7702, PL-259 to PL-259 barrel connector.

15 530 KHz-230 MHz plus MHz New! HF/VHF/UHF SWR Analyzer Covers 530 KHz-230 MHz and MHz... SWR... Complex RF Impedance: Resistance(R) and Reactance(X) or Magnitude(Z) and Phase(degrees)... Coax cable loss(db)... Coax cable length and Distance to fault... Return Loss... Reflection Coefficient... Inductance... Capacitance... Battery Voltage. LCD digital readout... frequency counter... side-by-side meters... Ni- MH/Ni-Cad charger circuit... battery saver... low battery warning... smooth reduction drive... MFJ-269C MFJ-269C covers 530 KHz to 230 MHz and 415 to 470 MHz -- an MFJ-269C exclusive! Includes all the features of MFJ-259C, the world's most popular SWR Analyzer plus much more! Large easy-to-read two line LCD display and side-by-side meters clearly display your information. Built-in Ni-Cad/Ni-MH charger circuit, battery saver, low battery warning, smooth reduction drive tuning. Use as signal source for testing/alignment. Built-in CoaxCalculator TM -- calculates coax line length in feet given coax length in electrical degrees and vice versa for any frequency and any velocity factor (great for building matching sections and phasing lines) -- an MFJ-269C exclusive! New 12-bit A/D converter gives much better accuracy and resolution than common 8-bit A/D converters -- an MFJ-269C exclusive! Super easy to use! Just set the bandswitch and tune the dial -- just like your transceiver. 530 KHz to 230 MHz Range Features MFJ-269C gives you a complete picture of your antenna. Read antenna SWR and Complex Impedance 530 KHz to 230 MHz. Built-in frequency counter. Lower band is retuneable to cover KHz for maritime and 600 Meters. Read Complex Impedance as series equivalent resistance and reactance ($R_s + jX_s$) or as magnitude (Z) and phase (degrees). Also reads parallel equivalent resistance and reactance ($R_p + jX_p$) -- MFJ-269C exclusive! Determine velocity factor, coax loss in db, length of coax and distance to short/open in feet. Read SWR, return loss and reflection coefficient at any frequency simultaneously at a single glance. Also reads match efficiency. Also read inductance in uh and capacitance in pf at RF frequencies. Measure SWR and loss of coax with any

characteristic impedance, 10 to over 600 Ohms, including 50, 51, 52, 53, 73, 75, 93, 95, 300, 450 Ohms -- MFJ-269C exclusive! 415 to 470 MHz Range features Just plug in your UHF antenna coax, set the frequency and read SWR, return loss and reflection coefficient simultaneously. You can read coax cable loss in db and match efficiency. You can adjust UHF dipoles, verticals, yagis, quads and other antennas and determine their SWR, resonant frequency and bandwidth. You can test and tune stubs and coax lines. You can manually determine velocity factor and impedances of transmission lines. Adjust and test RF matching networks and RF amplifiers without applying power. Has easy-to-read LCD logarithmic SWR bargraph and SWR meter for quick tuning. Take it anywhere Fully portable, take it anywhere -- on remote sites, up towers, on DX-peditions. Has built-in N-type connector. Includes Free N-to-SO-239 adaptor. Use 10 AA Ni-MH or Ni-Cad or alkaline batteries (not included -- alkalines cannot be charged internally) or VAC with optional MFJ-1312D, Compact 4Wx2Dx6 3 /4H inches. Maritime and 600 Meter Coverage MFJ-269CM, Like MFJ-269C except the bottom band covers KHz for Maritime and 600 Meter bands. MFJ-269C SWR Analyzer Accessories MFJ-39D, Tote your MFJ-269C anywhere with this genuine MFJ custom carrying case. Back pocket with security cover for carrying dip coils, adaptors and accessories. A special foam-filled fabric cushions blows, deflects scrapes, and protects knobs, meters and displays from harm. Wear it around your waist, over your shoulder, or clip it onto the tower while you work -- the fully-adjustable webbed-fabric carrying strap has snap hooks on both ends. Has clear protective window for frequency display and cutouts for knobs/connectors-- use your MFJ Analyzer TM without taking it out of the case. MFJ-269C SWR Analyzer Accessories MFJ-99C, MFJ-259C/269C Power Pack. 10-Pack SuperCell TM Ni-MH batteries, & MFJ-1312D 110/220 VAC Power supply. MFJ-39DAC, MFJ-269C Accessory Pack. Has MFJ-39D custom Carrying Pouch for MFJ-269C, MFJ-1312D power cube, and MFJ-66C dip coils. MFJ-39DABC, Complete accessory pack! Pouch, batteries, coils, power cube. MFJ-92AA10, MFJ 10-Pack AA SuperCell TM Rechargeable Ni-MH Batteries. MFJ-66C, Dip coil set MHz. Turns MFJ-269C into a dip meter. MFJ-5510C, VDC Cigarette lighter adapter cord for using your MFJ SWR Analyzers on-the-road. 18 inches of retracted curly cord, 60 inches fully stretched. MFJ-269 Adaptors for HT Antennas MFJ-7730, (Left). N-Male to SMA Female Adapter. MFJ-7731, (Right). N-Male to BNC Female Adapter. High Capacity 2500mAh AA & 800mAh Ni-MH Batteries MFJ POWERHaus TM Ultra-fast Intelligent Charger MFJ-92AA01, 3.49 each. MFJ-92AA01 Four charging docks charge AA- MFJ-92AAA01, 1.99 each. MFJ-633B 3 49 each AAA-C-D, 9V and Ni-MH, MFJ s super high capacity Ni-Cd, Alkaline and Li-ion batteries. Ni-MH AA and AAA batteries Charge single cell or charge a fullyloaded dock. High-speed intelligent IC provides have twice the power of standard Nicads at about the same MFJ-92AAA each over- charge, over-current, over-voltage, short price! No detrimental memory effect circuit and polarity-reversal protections. Auto that plagues typical Ni-Cad batteries. MFJ-92AA10, Pack of 2500 mah MFJ SuperCells TM, perfect for your MFJ-259B and MFJ-269 SWR Analyzers! MFJ-92AAA01, Pack of 800 mah MFJ SuperCells TM, for MFJ-225 graphical SWR Analyzer. MFJ-269CPRO TM Analyzer MFJ-269CPro, Like MFJ-269C, but has its UHF range coverage 430 to 520 MHz and an extended commercial-style cabinet for

lab work (helps protect knobs and connectors from damage. New! switches to trickle charge upon full charge. Quick/Slow switch with LED indicator. Quick-charge 2 AA batteries in just 1.3 hours. LCD indicates charging status, cell capacity and when a bad cell is detected. USB Charge port VAC adapter included. MFJ... The World Leader in Ham Radio Accessories! 15

16 MFJ HF/VHF/UHF Antenna Analyzer * MHz plus 220 and MHz All the RF-diagnostic functions you need with easy-to-use MFJ-266C digital analyzer! The MFJ-266C covers HF, VHF, plus UHF amateur and commercial frequencies with digital precision. It also displays SWR, Complex Impedance, and Impedance magnitude simultaneously -- all on the same easy-to-read LCD screen. Use it to measure Capacitance, Inductance, Field Strength, Frequency, plus generate test signals. You can also fine tune stubs, analyze coax, test baluns and RF transformers, and perform many other important RF-related tasks around the shack or on the road! When it comes to simplicity and convenience, MFJ-266C is a winner. Not only is it easy-to-use, but MFJ-266C fits comfortably in one hand for on-the-fly measurements on the bench or in the field. Here's the rundown of what this compact powerhouse can deliver: Frequency Coverage The MFJ-266C covers all bases through 6 Meters, the FM broadcast band, Airband, 2 Meters, 220 MHz, 70 cm, plus VHF/UHF commercial 2-way frequencies: Band A: 1.5 to 2.7 MHz Band B: 2.5 to 4.8 MHz Band C: 4.6 to 9.6 MHz Band D: 8.5 to 18.7 MHz Band E: 17.3 to 39 MHz Band F: 33.7 to 65 MHz (gap*) Band V: 105 to 230 MHz 220 MHz! Band U: MHz The velvet-smooth 10:1 vernier drive and solid state varicap makes fine tuning a breeze, Built-in dial lock prevents accidental detuning making measurements. Switched backlighting LCD screen is easy-to-read in any light. SWR, Impedance Magnitude, and Complex Impedance In SWR Mode, MFJ-266C reads SWR 1:1 to 9.9:1, Impedance Magnitude Ohms and Complex Impedance (resistance and reactance). Best of all, it displays all three parameters simultaneously and operating frequency with one quick glance. No other low- cost handheld analyzer offers this! (Note: Z-mag and R+jX not displayed on UHF). Capacitance and Inductance Find values for unknown capacitance in pf or unknown inductance in uh quickly. Measurements are made at RF frequencies rather than at the low audio frequencies used by many handheld L/C meters. Frequency Measurement, Field Strength Readings In Frequency-Counter Mode, MFJ-266C becomes an accurate 500-MHz counter with a choice of 1-kHz or 100-Hz resolution. The counter mode also features a high-resolution digital field-strength meter for measuring the relative intensity of incoming signals. MFJ-213 covers 1-60 MHz with digital precision, see it bright and clear on the nice, green backlit LCD. Together, these functions are extremely useful for checking the operation of oscillators, transmitters, as well as assessing the strength of radiated signals from antenna arrays. Built-in Interference Detection In Frequency-Counter Mode, MFJ tracks down powerful local signals that disrupt accurate SWR measurements. When picked up by an antenna under test, these signals compete with MFJ-266C's internally generated test signal to make SWR readings appear artificially high. Handheld antenna bridges are subject to additive interference, but only

MFJ detects the offending signal, displays severity, and identifies frequency! Powerful Signal Source MFJ-266C also functions as a tunable It also displays SWR, complex impedance, and impedance magnitude simultaneously -- all on the same easy-to-read LCD screen. Use it to measure capacitance, inductance, field strength, frequency, plus generate test signals. You can also fine tune stubs, analyze coax, test baluns and RF transformers, and perform many other important RF-related 16 Toll-free signal source, supplying about 2 Volts peak-to-peak across the entire tuning range. You can use this signal to drive mixers, lowpower amplifier stages, or filters, and use it as a source for checking antenna patterns on a range. Add a step attenuator, (MFJ-762, 89.95) and it becomes a low-level signal source for testing receivers and pre-amps. Take it With You! You'll love the compact size and bantam weight of MFJ-266C when perched on a tower. Also, push-button band switching lets you toggle across the spectrum with ease when tucked into cramped spaces. User-Friendly Layout MFJ-266C is ergonomic, antenna N-connector positioned on top of the case and everything else arranged and clearly marked on front panel -- right in front of your eyes. MFJ-266C s operating manual was professionally written and illustrated to help you understand and master every function quickly. It also includes a guide for ensuring accurate results and getting the most from the unit's advanced features. In the back, you'll find a one-page "Quick Guide" that reviews all controls and functions. Many Instruments in One Having MFJ-266C is like owning several pieces of test equipment. You get a powerful wide-range signal source, Inductance/ Capacitance meter, network analyzer, RF field-strength meter and a 500-MHz frequency counter all-in-one small package. Bullet Proof Construction Features like the rugged aluminum case, solid-state band switching, robust internal construction, and solid-state LCD display ensure that bumps and drops won't faze the unit in the least. Expect it to hold calibration and reliable service for years to come. Vital Statistics Uses 4 internal AA alkaline batteries or optional 12VDC/110 VAC adapter with optional MFJ-1312D, Has built-in Li-ion battery charger. Use optional MFJ-18650, Powerful 3.7V, 3000 mah Li-on battery. Compact 3 3 /4Wx6 1 /2Hx2 3 /4D inches. Weighs 1.32 lbs. Draws 30-mA in counter and 140-mA in analyzer modes. Includes N-to-SO-239 adaptor. MFJ HF SWR Analyzer 1-60 MHz MFJ tasks around the shack or on the road! MFJ-213 has all of the features of the popular MFJ-266C but is for HF use only, covers 1-60 MHz. Protected by MFJ s famous One Year limited No Matter What TM warranty. MFJ will repair or replace (at our option) your analyzer no matter what for one full year.

17 New MFJ-226 introduces the MFJ Times Technology TM series of advanced Antenna Analyzers! This groundbreaking VNA antenna analyzer -- MFJ-226 Antenna Expert TM -- delivers OSL calibration and true reactance including its sign from 1 MHz to 230 MHz with a 1-Hz frequency resolution! Incredibly Powerful MFJ-226 is the first and only lowcost handheld VNA (Vector Network Analyzer) to feature OSL (open/short/ load) calibration for super accuracy and sign of reactance to positively identify inductive or capacitive reactance. These two features, normally only found on lab instruments,

place incredible diagnostic power in the palm of your hand. With it, you'll measure impedance plus many other critical load parameters directly, through feedline or test cable with exceptional accuracy, correcting for line loss and phase angle. Single Frequency Mode Presents an unusually wide range of load information including... SWR Frequency Impedance Magnitude Series and Parallel Impedance ($R \pm jX$) S11 (Rectangular and Polar) Capacitance Inductance Swept-Frequency Mode Generates, displays, captures accurate plots versus frequency of SWR Impedance (Z) Resistance (R) Reactance ($\pm X$) Return Loss (S11) Phase Angle Smith Chart Smith Chart plot shows S11 magnitude and phase angle over any frequency span you specify. 32 Memories 32 memories let you capture screens made in the field for download into your PC via mini USB port for later storage and use. Store OSL Calibrations You can run OSL calibrations through your test cable or feedline or at different frequencies and store them for future use. Antenna Expert TM MFJ VNA Antenna Analyzer covers 1 to 230 MHz, 1Hz resolution. Frequency sweep plots: SWR, Impedance, Resistance, Reactance, Phase Angle, Complex Return Loss, Smith Chart Sign of reac- Fits Your Hand Perfectly Better doesn't mean bigger! The MFJ-226's compact and virtually indestructible molded case fits your hand perfectly with real backlit keys that Smith Chart plot. Moveable cross-hair tracks depress to give you tactile feedback. plot over any frequency span. Displays S11 Easy-to-read Backlit LCD magnitude, phase angle at any frequency. Bright 2 1 / 2 inch LCD backlit screen Swept Impedance plots (Z) displays is easy-to-read, even in direct sunlight. impedance Use two AA batteries magnitude and shows the selected Use disposable Alkaline or rechargeable NiMH AA batteries (not includ- of the graph. frequency at the top ed). Firmware upgradeable via USB Reactance Plot port. Includes N-to-SO-239 adapter shows reactive and 48-inch Shown mini Actual USB to Size curve, but also provides R and X val- USB cable. 3 1 / 4Wx6 1 / 2Hx1D inches. 9.3 ounces. ues numerically at the selected frequency. Looks, Feels, Performs Like a Professional Instrument Return Loss plot MFJ-226 has both the hefty feel and (RL) shows shape of advanced performance of professional curve and presents field-service instruments costing hundreds, even thousands of dollars more. ed frequency. the return loss value in -db at your select- If you've ever wished for accuracy Phase plot also and flexibility of a professional-grade presents RL data S11 VNA without the boat-anchor and phase angle, but the plot depicts the packaging and prohibitive price, your Phase Shift across search ends here. The MFJ-226 pulls the selected frequency span. together the latest advances in RF tech- MFJ... The World Leader in Amateur Radio Accessories! 17 tance Amazing accuracy with OSL (Open-Short-Load) calibration. nology and delivers them to you at a price you can't afford to pass up! Here s a few Screen Shots MFJ New! Main Menu selects these modes: Single Frequency, Swept Frequency, Calibration Screen (manages OSL calibrations), Settings Screen (basic analyzer setup) and PC Mode (dumps data in computer). Single Frequency Mode. First screen shows SWR in BIG 3/4 inch digits and the Frequency reading in a single glance.

18 MFJ-225 HF/VHF Two-Port Graphic Antenna Analyzer Take RF testing to the next level with the new MFJ-225! All the

basic analyzer functions you've come to depend on plus a host of advanced features like builtin LCD graphics, two-port VNA measurement, PC-Interface using IG-miniVNA freeware, precise DDS frequency control, self-calibrating... easy-to-use! MFJ Two Analyzers in One Out in the field, MFJ-225 is a compact completely self-contained handheld analyzer. On the bench it becomes a full-fledged two-port (S21) desktop machine when teamed up with your PC. Using powerful IG-miniVNA freeware, you'll run detailed data analysis and then print out stunning color-graphic plots to document your work! Seeing is Believing Get a big picture every time with MFJ- 225's built-in back-lighted 3-inch LCD graphic display. Make fine circuit adjustments using full-screen easy-to-view SWR bar graph, capture vivid swept displays for SWR, impedance, return loss, phase angle, more! Operation is simple, you can adjust the center frequency, tuning step, and sweep width instantly while viewing your plot, literally shaping it before your eyes. Continuous HF-VHF Coverage Tunes from 1.5 MHz to MHz with rock-solid stability and no gaps. That's because the MFJ-225's VFO is a state-of-the-art programmable DDS (direct digital synthesis) generator with pin-point 1-kHz frequency resolution. DDS control means no mechanical band switches or tuning elements, just a reliable velvet-smooth optical encoder to glide across the spectrum. Powerful Clean Signal Source The MFJ-225 DDS stimulus generator also gives you a leveled -5 dbm signal source for driving mixers, low-power amplifiers, filters, networks, diplexers, and antennas on the test range. And, your test signal is always clean, with over -50 dbc of harmonic and spur suppression. That's better than many precision lab generators costing thousands of dollars! Connect an external step attenuator, and it becomes a highquality signal generator for peaking sensitive receivers and preamplifiers. Information Powerhouse The MFJ-225 simultaneously compiles and displays all important parameters you need on a single screen, giving you a wider range of results at a glance. You'll work faster and smarter without the inconvenience of scrolling through menus or making tedious conversions to get your data. What the MFJ-225 Measures: SWR (1:1 to 9.9:1) Complex Impedance (R+jX) Impedance Magnitude (Z) Return Loss (RL, 0-30dB) Phase (0-180) Capacitance (0-9999pF) Inductance (.1uH-80uH) Cable Length (0.5-45m) Cable Loss (0-30dB) Two-Port Flexibility In addition to traditional single-port (S11) reflected-power measurements, MFJ features an invaluable advantage of making two-port (S21) forward-power measurements, essential for optimizing filters, diplexers, matching networks, etc. It bridges the gap between a simple scalar analyzer and true vector-analysis performance. MFJ-225 s simple 4 selection menu chooses Bar Graph SWR, Cable Test, Swept Antenna Plots or PC interface to run IG-miniVNA. SWR Bar Graph gives more than SWR! Get test frequency, DDS tuning step, digital SWR value, impedance magnitude, complex impedance, return loss, C/L values, battery condition. SWR graph of typical 10-Meter antenna gives big picture plus plot s center frequency, sweep width, DDS tuning step. Additional plots obtained by a switch for impedance magnitude, resistance, reactance, return loss and phase. Ergonomic Operation Advanced features conjure visions of greater complexity and more buttons to push... not true for MFJ-225! The graphic display is "advanced" because it places more information at your fingertips without needless scrolling and searching.

Also, the layout is unique with three large soft-touch selector buttons located on the front panel next to the screen and a large side-mounted 18 frequency control knob conveniently positioned for your right hand. Everything is located where it needs to be for intuitive operating and unobstructed screen view! Easy To Power MFJ-225 can be powered by four AAA alkaline batteries or four AAA Ni-MH rechargeable batteries (batteries not incl.). Optional MFJ-1312D, or any external 12 VDC power is required for the builtin recharging circuit with charge indicator LED. LED will light while charging and turn off when cycle is completed. On the bench, power it through the USB power port using any USB power source. Optional USB cable, MFJ-5430, Self-Calibrating In order to maintain out-of-the box accuracy, all analyzers require periodic calibration checks -- a potentially time-consuming operation that may require special RF loads and step-by-step procedures. However, the MFJ-225 uses built-in firmware to perform its entire calibration routine in less than a second! Simply initiate the "calibrate" command and you're done! Specifications MFJ-225 requires 4 NiMh AAA cells or optional power adapter MFJ-1312D, PC interface requires a USB Type-B cable. Analyzer's OUT port is SO-239. IN port is SMA-female. 3 3 /32Wx6 1 /8Hx1 1 /2D inches. Accessories MFJ-92AAA04, Pack of Ni-MH rechargeable batteries. MFJ-7719, SMA Male to SO-239 adaptor for VNA port. MFJ-1312D, VDC, 300 ma, center positive 2.1 mm plug. Power adaptor for charging Ni-MH batteries internally. MFJ-5430, USB cable for external power from your PC for MFJ-225. MFJ-95, Accessory Package includes all of the above accessories. Save when you purchase the package! NoMatterWhat TM Warranty Protected by MFJ s famous No Matter What TM limited one year warranty.

19 MFJ MHz Color Graphic VNA Analyzer Pocket-Size, Incredible Performance! Truly accurate SWR, R, X and Z! This pocket-sized wonder breaks the mold for analyzer design with user-friendly convenience, top notch accuracy, and a vivid TFT multi-color display. Don't let the size fool you, MFJ-223 is packed with all the VNA features and performance you need! For example, get data for SWR, resistance (R), reactance (X), and impedance magnitude (Z) delivered on a colorcoded high-resolution bar-graph display or sharply defined swept-frequency plots. Get continuous DDS frequency coverage with 100-Hz resolution and a full selection of tuning steps and sweeps. There's a movable marker that calls up alpha-numeric data for any point on any plot -- and a memory to capture current data when you turn the analyzer off. Get other useful features too, like a built in help menu and a field-strength indicator warns when powerful interference is present. Best of all, juggling batteries is a thing of the past -- a long-running lithium-polymer power source is built right in. Recharge via any USB port. Check out these specifications: Single-frequency and sweptfrequency operating modes Truly accurate SWR, R, X, and Z measurements Seamless DDS coverage with 100-Hz resolution from 1-60 MHz Smooth "skip-free" encoder tunes fast or slow without missing a step Powerful +5-dBm stimulus generator The MFJ is perfect New! for IF and HF sensitivity checks, tuning and testing filters, adjusting networks, and much more. Combine with a directional coupler to measure return-loss. Requires 9-V battery for

operation. Has BNC and SO-239 connectors. Tiny aluminum construction, 4 1/4Wx1 3/4Hx2 3/4D inches. Shown actual size overrides local interference Field-strength meter measures local signals, detects potential interference DDS generator precision signal source A 10-K potentiometer and a two-section 300-pF variable capacitor, New! both with calibrated scales, combined into one handy handheld package (capacitors may be paralleled). Insulated terminal posts accept standard test probes and patch cables. 4Wx1 1/2Hx2 5/8D inches. SWR, R, X and Z are simultaneously displayed in vivid color graphs. Vivid 1600-pixel/inch color graphics on a 2x2 inch non-glare TFT screen High-lumen output, easy to read in direct sunlight Easy setup, only four control switches with convenient on-screen soft menus Personalized ID function programs your call or name onto the display Built-in 3.7-V 1800-mAH lithiumpolymer battery charges with Battery Status Indicator and Auto Shut-off. Optional MFJ-5431, 4.95, Micro USB to USB Charge Cable. Charge % always displayed, multicolor LED monitors charge status Built-in clock shows elapsed time when unit is turned on Tiny 2 3/4Wx3 1/2Hx1 3/8D", just 5.1 oz. BNC Male to SO-239 adaptor included. MFJ RF Design Box Variable Inductor/Capacitor Tester This compact device places a wide range of patchable L and C values in your hands to solve virtually any HF tuning and matching problem. MFJ-5904 RF Design Box is one of those rare "must have" units, especially if you have an antenna analyzer! After all, inductors and capacitors are fundamental building blocks for RF design. Imagine being able to build and test virtually any popular HF configuration in minutes without ever lifting a soldering iron! No need for modeled predictions when you can connect a few patch leads and find optimized values for absolute peak performance. Even try different network configurations to see which one is the best! Here are just a few of the circuits you can assemble: L-networks, T-networks, Pi-networks Band-pass filters, Band-stop MFJ White Noise Generator MFJ MFJ New! filters Traps and reject Filters Loading inductors Shunt-L/C shunt-matching elements Load Converters Power Reducers Q meter Antenna-analyzer pre-selector Selective field-strength meter Ant. Tuners MFJ-5904 is built for reliable portability with a compact molded case and high-quality jacks and controls. Best of all, each component is 300-watt ATU rated so you can put your designs to the test using a 100-Watt rig! Two capacitor banks are continuously adjustable 12 pf to 912 pf plus a stepped inductor that is adjustable 0.1 to 11.2 uh. Controls RF-isolated from the aluminum front panel for your safety, and you'll get plenty of guidance from a professionally written and illustrated user's manual. Packed with loads of information and Variable Res/Cap Sub Box MFJ MFJ Multi-bargraph Display: data to erase the "black magic" associated with RF design. This tremendous training tool will help you develop a true hands-on feel for how each type of RF tuned-circuit works. Why spend hours soldering and lashing prototype circuitry together only to discover that something else might work better? Let the RF-Design Box do it all for you in a matter of minutes. 7Wx3Hx5 3/8D inches. Variable Resistor Sub Box MFJ New! New! Six standard-value pots with calibrated scales, universal terminal posts accept test probes and patch cables. Great for design work or service bench! 7Wx3Hx5 3/8D inches. Toll-free

20 HF/VHF/UHF SWR Analyzers for all Your Building Needs MFJ-229 Reads SWR of Any Antenna from MHz MFJ Just plug in your antenna coax, set the frequency and read SWR! Easy-to-read LCD displays frequency and SWR and has a logarithmic SWR bargraph for precision tuning. Two line high-contrast LCD has 32 huge 1/4 inch characters. Select any desired frequency range for tuning. Examples: Tune from 280 to 295 MFJ-219B Econo MFJ-229 MFJ-219B Similar to MFJ-229, less LCD display. The MFJ-219B Antenna SWR Analyzer covers 420 to 450 MHz. Has meter for SWR and jack for external frequency counter. Measures 2 1/2Wx7 1/2 Hx 2 1/4D inches. MFJ-229 and MFJ-219 have N connector with free N-to-SO-239 UHF adapter. Also they have Battery Check and Power Saving feature. For 50 Ohm antenna systems. Use 9-Volt battery or 110 VAC with MFJ-1312D, AA batteries for MFJ-229 or 110 VAC adapter. MFJ Antenna Bridge New & Improved! MFJ-204B Now has AGC for constant readings. No other equipment needed. Take it to your antenna site. Determine if your antenna is too long or too short, measure its resonant frequency, and its resistance to 500 ohms. It s the easiest, most convenient way to determine antenna parameters. Resistance bridge, null meter, tunable oscillator-driver (1.8 to 30MHz). 9 VDC or 110 VAC with MFJ- 1312D, /2Hx2 1/2Wx2 1/4D inches. Back in the vacuum tube days they called these babies grid dip meters and every ham and experimenter either had one or wanted one. The MFJ- 201 solid state (hence no grid) is smaller, lighter, and vastly more versatile than its ancestor. Use it as a traditional dip meter to find a coil s MHz, 320 to 350 MHz or 400 to 450 MHz. Tuning knob has a built-in 10:1 vernier reduction drive for precision tuning. You can use the MFJ-229 to adjust dipoles, verticals, yagis, quads and other antennas and determine their SWR, resonant frequency, and bandwidth. Test and tune stubs and coax lines. You can determine velocity factor, impedances and estimate losses of transmission lines. Adjust and test RF matching networks and RF amplifiers without applying power. Use as signal source for testing and alignment. Requires 15VDC or 110 VAC with optional MFJ-1318, 15.95, wall adapter. Measures 3 3/4Wx6 1/2Hx1 3/4D. MFJ VHF SWR Analyzer TM MFJ-208 VHF SWR Analyzer TM finds the SWR on a calibrated dial of any antenna from MHz -- a must-have for any VHF antenna builder! Has jack for external frequency counter -- helps in testing your VHF handhelds and other gear. Measures 7 1/2Hx2 1/2Wx2 1/4D inches -- super compact so you can carry it to your antenna source. Use 9 Volt battery or 110 VAC with optional MFJ-1312D, wall adapter. MFJ RX Noise Bridge Quickly adjust almost any antenna for maximum performance, 1 to 100 MHz. Lengthen or shorten your antenna for minimum SWR. Measure resonant frequency, feedpoint resistance and reactance. MFJ-202B Works with any receiver or transceiver. Hand-calibrated resistance scale, expanded capacitance range and exclusive built-in range extender. 4 1/4Wx2Hx4D in. Use 9 Volt battery (not included). Economical Dip Meter covers MHz MFJ resonant frequency. Couple it to an antenna, or to coax lines to get their electrical length. Or use it as an absorption wavemeter for measuring transmitter output, neutralizing tank circuits, or a field strength meter. Other traditional dip uses include: crystal oscillator, monitoring audio signal output (it includes a headphone jack), and measuring inductance and capacitance. This solid-state grid dip meter covers MHz in 6 bands, has thumb wheel tuning, color code

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readout, 6 coils, earphone jack and battery check. Uses a 9V battery for operation. Measures a compact 2Wx2 1 /2Dx7H including coils Toll-free 1- Basic HF/VHF SWR Analyzer TM MFJ-209C MFJ Starter SWR Analyzer TM lets you read SWR from 530 KHz to 230 MHz quickly only on a single analog meter. Tune knob, frequency control switch. No LCD module, counter or charging circuit. Use 10 AA cells or 110 VAC with MFJ-1312D, Compact, handheld size: 4x2 1 /2x6 3 /4 inches.

Reference

[Advancing Culturally Responsive Research and Researchers](#)

[Essentials of Existential Phenomenological Research \(Essentials of Qualitative Methods\)](#)