HAM RADIO RFI CHEAT SHEET





RFI Solutions from KHz to GHz

My Station Causes RFI – What do I do?

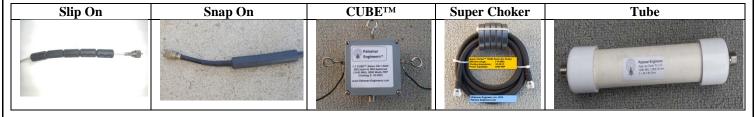
All RFI problems have a SOURCE, a PATH, and a VICTIM. You have to <u>identify the source</u>, <u>choke off the path</u>, and <u>protect the victim</u>. In most cases of mobile/home/portable ham radio operation or commercial broadcast, the transmitter is the source, the path is the "receiving" antenna disguised as the AC/DC wiring, phone lines, cable/satellite feeds of the VICTIM, and the VICTIM(s) are electronic devices that amplify the received signal and create the disturbance in the form of sounds, buzzes, non-operation or scrambled video.

RFI Solution Kits

#1: Clean up the SOURCE OF RFI and Choke the PATH

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Transceiver RFI KITS	Amplifier RFI Kits	Multi Ring+Snap On Combo	
Choke RFI into AC/DC lines,	Choke RFI into AC/DC lines, coax,	Choke RFI into AC/DC lines, coax,	
Coax, interconnecting lines	interconnecting lines	interconnecting lines	
Placed Todayes Manager and Code of Cod	Name requests located steps AC Law Code Code Code Code Code Code Code Code	Multi Ring + Snap On Combo Pack—Mix 31	
		Ring: F240-31(6) 1.4" ID Snap On: 3/8"(6), 1/2"(5) RFI Range 1-300 MHz	

Antenna RFI Kits – feed line chokes configured as <u>baluns</u> (<u>balanced output</u>) or <u>ununs</u> (<u>unbalanced output</u>)



#2: Protect the VICTIM OF RFI (shack, home, neighbor)

Home Theater System RFI Kit – audio, video, speaker, sub-woofer RFI protection

Computer RFI Kits – laptops, desktops, DSL/Routers, network boxes, CAT5 cables, wireless devices

Alarm System RFI Kit – multi sensor, multi alarms, home automation, dimmer light RFI Kits

Garage Door Opener Kit – AC power and sensor protection

Congric RFI Kit for electronic projects and small RFI problems including LFD and garden lighting

Generic RFI Kit for electronic projects and small RFI problems including LED and garden lighting AC/DC Power Line Chokes – kitchen, household appliances, Heating/air conditioning, sprinkler systems Ferrite Snap On's – Mix 31 (1-300 MHz), Mix 61 (200-2000MHz), Mix 77 (150 KHz-10 MHz)

Got a tough RFI problem and need a quick solution? Call RFI Hotline at 760-747-3343 or check out the RFI tutorials on our website at Palomar-Engineers.com

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My Station is a VICTIM of RFI – What do I do?

CAUSE: RFI, or a high noise level, to ham radio receivers can be caused by broadband signal hash or "birdies" from consumer electronic devices including computers, routers, DSL/cable modems, plasma flat screen TV's, HVAC control circuits, switching power supplies (wall warts), battery chargers, and other low power "transmitters" coupling their RFI into your AC power line, speaker cables and RF cables. Common mode noise can also be picked up on coax feed lines, rotor/antenna control lines and equipment interconnect cables.

#1: Clean up the SOURCE, choke the PATH, protect the VICTIM

Determine the primary interfering frequency of the source and <u>select a ferrite mix</u> that is effective at the fundamental <u>interfering frequency</u>. <u>Select a ferrite form</u> (Snap On, Slip On, or toroid ring) with a diameter that will allow <u>one or more turns thru the center</u>. Remember that the choking impedance increases with the SQUARE of the number of turns. If 1 turn = x, 2 turns = 4X, 3 turns = 9X, etc.

Wall Wart Noise Filters	Computer/DSL/Router Noise Suppressors	Appliance Noise filters – AC/DC line chokes
12V Mariana Mariana		

Common Mode Coax Noise Filters – neighborhood noise suppression picked up on coax braid

5	Suppress Common mode RFI in coax	CMNF-500 – 500 Watts PEP .1-150 MHz
Palomar Engineers®	line of transmitter	
Common Mode Noise Filter CMNF-3 soco wars #EP 1 8-60 MHz 16-60 Chaking Imprediate	Install at the proping an amplifier	CMNF-1500 – 1.5KW PEP 1-61 MHz
"Place to case fine of a familiar ordinal to concern a construction of the concernment ordinal to concernment ordinal to construct ordi	Install at transceiver or amplifier output	CMNF-5000 – 5KW PEP 1-61 MHz
	Suppress common mode RFI in	
Palomar Engineers Common Mode Noise Filtor 15-180 MHz Receive Only	coax line to receiver	CMNE TV Cotallite/Coble coor lines
A cur-s	Install at receiver antenna input	CMNF-TV – Satellite/Cable coax lines

Individual Ferrites – <u>Toroids</u>, <u>Slip On</u>, <u>and Snap On</u> – for 1/8" wire to 3" cables available in convenient 10, 25 and 100 packs and combination packs of various mixes and sizes for general RFI troubleshooting.