

**DIAGNOSE THE SOURCE OF RF ON A PHONE SYSTEM**

YOU NEED FILTERS ON THE LINES IN FRONT OF THE SYSTEM (CHECK WITH A BUTT-SET OR SINGLE LINE PHONE).  
...  
EVEN IF YOU DON'T HEAR IT WITH THE BUTT-SET, IT STILL MAY BE THERE ENOUGH TO BE DEMODULATED BY THE TRUNK CARDS  
...  
IT'S POSSIBLE TO HEAR RF ON SOME TRUNKS AND NOT OTHERS, SINCE THE LINES COULD TAKE DIFFERENT PATHS FROM THE TELCO.

YOU STILL HEAR RF

YOU MAY HAVE A BAD TRUNK CARD, WITH A BAD PART OR SOLDER JOINT DEMODULATING THE RF.  
...  
TRY ANOTHER TRUNK CARD.

YOU STILL HEAR RF

CHECK THE GROUNDING ON THE KSU.  
...  
YOU PROBABLY MISSED SOMETHING!

**NOTES:**

SHIELDED CABLE GENERALLY MAKES RF WORSE (THE SHIELD CARRIES THE RF EVEN IF GROUNDED! USE CAT 5 CABLE... THE MANY TWISTS PER FOOT REJECTS INDUCED SIGNALS.  
...  
"JAKE" (Jk/IW) CABLE WITH THE RED - GREEN - YELLOW - BLACK WIRES DOES NOT HAVE TWISTS, AND CAUSES REAL PROBLEMS WITH RF!  
...  
FOR WELDING NOISE, YOU NEED TO STRING 3 FREQUENCIES TOGETHER (AM, CB & SEALING). YOU MAY NEED HANDSET, BASE CORD OR BOTH.

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DO YOU HEAR RF ON THE INTERCOM?  
YES  
NO

CHECK FREQ.

CHECK THE GROUND ON THE KSU.  
...  
PUT THE COVERS ON THE KSU.

YOU STILL HEAR RF

ONE OR MORE STATION CABLES ARE PROBABLY BRINGING THE RF INTO THE KSU.  
...  
TRY GROUNDING THE SPARE PAIRS FOR THESE CABLES AT THE KSU END ONLY.

YOU STILL HEAR RF

PUT A PHONE AT THE FRAME, AND DISCONNECT ALL OF THE STATION CABLES TO SEE IF THE PROBLEM CLEARS.  
...  
PUT THE CABLES BACK ONE AT A TIME UNTIL THE RF RETURNS (IT MAY BE ON MORE THAN ONE CABLE).

PUT A FILTER ON THAT CABLE(S) AT THE KSU END. YOU MAY EVEN NEED A FILTER ON EACH CABLE.

YOU STILL HEAR RF

YOU MAY HAVE A BAD CARD IN THE KSU (OR A BAD KSU).  
...  
DO SOME SUBSTITUTION.

IF THE PHONE IS PICKING UP BOTH AM & FM (PRETTY RARE EXCEPT AT RADIO STATIONS), JUST STRING THE FILTERS IN SERIES WITH EACH OTHER.  
...  
FOR WELDING NOISE, YOU'LL NEED 3 FILTERS IN A ROW!

I DON'T KNOW

STOP WASTING YOUR TIME AND FIND OUT!  
...  
RF IS ABOUT THE HARDEST PROBLEM TO DIAGNOSE, SINCE YOU CAN'T SEE OR FEEL IT.  
...  
THERE IS NO "MAGIC BULLET" TO FIXING RF, ALTHOUGH OUR FILTERS ARE AS CLOSE AS YOU CAN COME.  
...  
YOU NEED TO FIND OUT WHERE THE RF IS GETTING INTO THE SYSTEM OR PHONE, SO YOU KNOW WHERE TO PUT THE FILTER(S).  
...  
WE SELL ABOUT A 50-50 MIX OF HANDSET AND BASE CORD FILTERS, WHICH SHOWS THAT YOU CAN'T JUST GUESS WHICH ONE YOU'LL NEED

**DETERMINE FREQUENCY OF RF:**

YOU MUST DETERMINE THE FREQUENCY OF THE RF!  
...  
LISTEN TO THE STATION UNTIL YOU HEAR THE CALL LETTERS / FREQUENCY (USUALLY ON THE HOUR) TO DETERMINE IF IT'S AN AM OR FM STATION.

CHECK FREQ.

OUR FILTERS ARE TUNED TO THE PARTICULAR FREQUENCY BAND, SO YOU MUST USE THE CORRECT FILTER. AN AM (.5 MHz) FILTER WOULD HAVE NO EFFECT ON FM (100 MHz), AND VICE VERSA.

IF YOU REALLY CAN'T TELL, YOU'LL HAVE TO ORDER BOTH AND RETURN WHAT YOU DON'T USE.  
...  
GENERALLY SPEAKING, RF IN A DOWNTOWN AREA WITH HIGH BUILDINGS IS FM (SHORT WAVELENGTH=SHORT ANTENNA ON TOP OF HIGH BUILDING), AND RF IN THE SUBURBS IS AM (LONG WAVELENGTH=TALL ANTENNA).  
...  
SOME STATIONS SIMULCAST THE SAME PROGRAMMING ON AM & FM, MAKING IT VERY HARD TO TELL WHICH IS CAUSING THE PROBLEM.

REMEMBER THAT YOU MUST TAKE EACH PHONE AS ITS OWN CASE OF TROUBLE!  
...  
EVEN PHONES 3 FEET APART COULD NEED A DIFFERENT FIX FOR THE RF!

SOMETHING MUST ACT LIKE AN ANTENNA, TO BRING THE RF INTO THE PHONE.  
...  
THE WAY TO ELIMINATE THE RF IS TO ELIMINATE THE ANTENNA.  
...  
EITHER THE BASE CORD, OR THE HANDSET CORD IS ACTING LIKE THE ANTENNA ON THE PHONE.

DOES THE RF CHANGE IF YOU SCRUNCH UP THE HANDSET CORD, OR STRETCH IT OUT?

NO

PUT THE CALL ON SPEAKER PHONE WITH THE HANDSET HUNG UP (IT HELPS TO MUTE THE MIC), AND SEE IF YOU HAVE RF?

YES

THE RF IS COMING IN THRU THE BASE CORD.  
...  
YOU CAN TRY GROUNDING THE SPARE PAIRS.  
...  
PLUG A FILTER INTO THE MOD JACK IN THE BACK OF THE PHONE (NOT AT THE WALL).

YOU STILL HEAR RF

YOU MAY NEED A FILTER AT THE KSU END IN ADDITION TO, OR INSTEAD OF AT PHONE.  
...  
IF IT'S A LONG CABLE RUN, YOU MAY NEED TO BREAK UP THE LENGTH OF THE RUN BY PUTTING A FILTER IN THE MIDDLE (POSSIBLE AT A SUB-FRAME OR HOUSE BOX).

YOU NEED A FILTER ON THE HANDSET CORD.  
...  
PLUG THE FILTER INTO THE MOD HANDSET JACK ON THE PHONE, THEN PLUG THE HANDSET CORD INTO THE FILTER.  
...  
NOTE: IF YOU ONLY HEAR THE RF ON A HEADSET, NOT THE HANDSET, YOU DEFINATELY NEED A HANDSET FILTER (PLUGGED INTO THE HANDSET JACK ON THE PHONE).

YOU STILL HEAR RF

THE RF IS ALSO COMING IN THROUGH THE BASE CORD  
...  
BOTH THE BASE AND HANDSET CORD FILTERS ARE NEEDED ABOUT 10% OF THE TIME.

CHECK FREQ.

At some AM & FM radio stations, you may need to cascade two RF Eliminators together, to get both offending frequencies. These are **TWOCASES OF TROUBLE!** Fix the AM, then the FM. You can't fix both problems at the same time!

**RF is the most difficult problem to diagnose!**  
You must use the proper diagnostic techniques to fix it... or you can buy a whole bunch of filters and throw them at the system until you fix it.