

PANADAPTOR FOR THE R-390

Date: Mon, 16 Mar 1998 03:25:40 -0500
From: "Thomas A. Adams" <103360.2133@compuserve.com>
Subject: [R-390] Panadaptors and the R-390

Besides the APA-10 panadaptor you mention, WW2 also produced the BC-1031 panadaptor. I've been using one of these for quite some time with a suitably modified SP-600 with considerable success. I haven't tried to use it with any of my R-390s, because I find the radio to be somewhat awkward for this type of work; you could get carpal tunnel syndrome VERY quickly if you tried a lot of cruising.

This situation will be changing in the future tho; I have two Singer panadaptor heads (from SSB signal analysis consoles) in my garage that are more suitable for the R-390 than the BC-1031. For one thing, the Singers are rack mounted, and the same shade of grey as the R-390. For another, the design of the Singer panadaptor IF is somewhat more sophisticated, and designed to give a much higher resolution than the BC-1031 (VERY narrow crystal filters used for interstage coupling). The only problem is that I have to change the IF input on them (they're meant for 1.5 MHz), and I need to build a suitable power supply (unfortunately, the supplies weren't available when I got them).

The BC-1031 is for a 455 KHz IF, and is designed for a maximum spread of +/- 50 KHz. There is a Navy version of the unit, listed under their own peculiar nomenclature system, which is virtually identical but rather amazingly is calibrated for +/- 100 KHz! Given the constraints of receiver front end bandwidths, I have to take the Navy version with a grain of salt; a receiver that will pass usable signals for the panadaptor would be pretty miserable for any OTHER purpose!

The panadaptor is (to me, anyway) a very useful gadget. Besides watching large band segments for activity, analysis of individual signals in narrow bandwidth sweeps is quite informative. Multiplex / kineplex transmissions are easily picked apart (useful to me because I monitor RTTY and similar modes, and it's useful to know exactly which channels in a given multiplex stack are active, and which are just idling).

Something I've found VERY interesting is using the panadaptor to pick apart the jamming signals that are common on the international broadcast bands. Looking at how they're put together, and making educated assumptions about who is doing the jamming, it's possible to get a handle on just what schemes various international powers use; this gives you a knowledge basis for figuring out who the unknown jammers are in cases you encounter later. The assortment of jamming signal compositions is amazing; AM versus FM versus suppressed carrier systems, random noise versus repetitive pattern noise modulation, fixed frequency versus limited bandwidth frequency hopping or sliding modes, etc.

BTW, FYI.... The WW2 vintage APA10 that you mention, like the BC-1031, was intended to be used with a number of different receiving sets; I know for a fact that it was intended for airborne use with the Hallicrafters built ARR-7, a repackaged and modified version of the SX-28 Super Skyrider, which includes UHF series connectors on the front panel for panadaptor connection. Tom, W9LBB

Date: Mon, 16 Mar 1998 08:04:20 -0500 (EST)
From: "P. J. Rovero" <provero@connix.com>
Subject: Re: [R-390] Panadaptors and the R-390

The navy version was RBU-1 for various receivers.... It was designed for the RBA/RBB/RBC series with 400 KHz intermediate frequency. Uses inverse filtering to equalize the pan display for the receiver filtering. And the RBA/B/C on broad are pretty darn broad....

Date: Thu, 26 Aug 1999 10:28:21 +1000
From: Morris Odell <morriso@vifp.monash.edu.au>
Subject: Re: [R-390] Panadapters

You can't see a full 1 MHz at 455 KHz so if you're using a 455 KHz panadaptor you'll only get 30-50 KHz or so. Just wrap a little bit of wire around the plate pin of the 3rd 6C4 mixer (the one that feeds the IF strip, I don't have the tube designation handy). Put a 0.01 600V blocking cap and 47K resistor in series with it and feed it out through coax to your panadaptor. I use a Singer SA-8B and it works very well. Panadaptors have their own specs regarding capacitance at the input - it's usually part of a tuning network so the length of coax may be important. From the point of view of the R-390A you want to isolate it and keep the effect of cable capacitance as low as possible, hence the resistor.

If you want to look at a full 1 MHz you'll have to get the 2-3 MHz signal before the 3rd mixer (ie: before the PTO signal is mixed with it) and use either a special panadaptor (I don't know if such a beast exists for the R-390A - the RA-66 panadaptor for the Racal RA-17 works that way but it's more complicated than the receiver itself!) or a spectrum analyzer.

Date: Thu, 26 Aug 1999 11:27:58 +1000
From: Morris Odell <morriso@vifp.monash.edu.au>
Subject: Re: [R-390] Racal receivers

>As much as I love my R390A, I'm very impressed with the ease and beauty >of bandscanning with the Racal receiver.

Just so - the R-390A is ideal if you know where you want to be and want to stay there. It's more sensitive than the RA-17 and less noisy - the RA-17 uses the world's noisiest mixer tube (6BE6) for the 3rd mixer and E180F pentodes for the first two which are not much quieter. The RA-17 is a great bandcruiser though, and looks nice. It's matching panadaptor is an anchorite's dream.

That's quite true, and especially in the light of the understated manual. Typically they give a laconic instruction "...remove the 2nd VFO..." which translates to half a day of cussing, unsoldering and contortions. In addition, the "Hunts" brand of capacitors in the RA-17 make Black Beauties look like mil-spec space rated lab standards in comparison.

Date: Mon, 13 Dec 1999 19:28:15 -0600

From: "Jon & Valerie Oldenburg" <jonandvalerieoldenburg@worldnet.att.net>

Subject: Re: [R-390] Panoramic adapter hookup question

I have this response from the group a while back Jon KB9VFD: You can't see a full 1 MHz at 455 KHz so if you're using a 455 KHz panadaptor you'll only get 30-50 KHz or so. Just wrap a little bit of wire around the plate pin of the 3rd 6C4 mixer (the one that feeds the IF strip, I don't have the tube designation handy). Put a 0.01 600V blocking cap and 47K resistor in series with it and feed it out through coax to your panadaptor. I use a Singer SA-8B and it works very well. Panadaptors have their own specs regarding capacitance at the input - it's usually part of a tuning network so the length of coax may be important. From the point of view of the R-390A you want to isolate it and keep the effect of cable capacitance as low as possible, hence the resistor.

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Date: Mon, 20 Mar 2000 10:38:06 +0000

From: "B.L.Williams" <B.L.WILLIAMS@prodigy.net>

Subject: [R-390] panadapter problems

I found a **Heathkit SB-620** a few weeks ago and bought it. Very nice looking with very good work done on the chassis. I think it is wired for 455 kHz and have checked out the manual pretty closely. There is at least one change on the scope from the manual in the coil wiring but basically it has to be 455 kHz. The only problem was something rolling around inside the scope when I unpacked it. Took out the chassis and found a Motorola 0.1 MFD/1000v cap rolling around. It sure looked dirty and grungy with the worst soldering job I've ever seen on the leads. The parts in the scope looked new and shiny. I checked all the caps and none are Motorola and none are wax sealed like this spare cap. The cap really looks filthy. So, after going over the manual a lot of times searching for where this cap would go I found nothing. The parts list does not have this cap listed. And, all of the solders are very good, shiny, and done quite well as opposed to the crusty blobs on the spare cap. I just couldn't find any point on the scope where the cap could have been tacked on. After many hours of searching around the manual and board I became confident that it was either a mod or a cap tossed in for a spare. I've done that myself but I tape the parts down good with notes as to what they are for. Judging the cruddy solder job I decided that maybe some careless person was being careless again. I finally took a deep breath and gave the scope the smoke

test. It powers up fine and the controls all work as they should. No problems. I sure was happy to play around with it.

I dug out a letter from Reid Wheeler on panadapters and read through HSN 22 on hooking up SB-620's to the R-390A via pin 1 on V204. I made a short test wire (unshielded for the time being) with two 4.7pf caps in parallel since I couldn't find a 7pf anywhere in town. The HSN method uses the 7pf cap and the manual suggests a 12pf. So, I was hoping that 9.4pf would be in the ballpark for a temp connection. I have just gone back through some of the saved messages from the list on hooking up panadapters and found that I had overlooked comments recommending a **0.01ufd/600v blocking cap** from several people. This is the point where it could be coincidence or attributed to my hookup, but I lost all audio at some point of fiddling with the panadapter trying to get a good signal on the scope. I got some sort of signal, but nothing like expected. What little audio I heard sounded like crossover bleeding through and when the RF is up all the way on a killer station the distortion was terrible. I swapped out the audio module and the problem was fixed. I found that R-263 had burned the bottom of the circuit board black. I'm kinda glad to replace that audio module as I also found V601 and V602 bad again. It now seems to go through those tubes regularly.

So, the radio is out of the rack for the time being and working fine now. I took the opportunity to De-oxit connectors and tube pins as well as do some other minor things that I have been saving up for when it came out of the rack. It recieves better than it ever has and I picked up a pirate station on 6955 last night with only 10' of wire that sounded like it was next door. I am going to leave it out of the rack until I figure out something to do with hooking up the SB-620. Any advice or suggestions is very much needed right now. I'm not hooking anything up again until I know more and hear from more experienced people. Thanks for any help you might send this way.

Date: Sun, 28 May 2000 16:01:21 -0700
From: "Gene G. Beckwith" <jtone@sssnet.com>
Subject: [R-390] panadapter - connection to R-390A -

It's raining all day here so am about to do a re-cap job on the filter deck of my number two ST Julian's Creek...It's re-paneled, cleaned and aligned, and mostly recapped now with the filter deck yet to do...added soft start varistor, and lots of clean-up in the gears...Can say now this machine looks good and runs great! It's even been multi-soaked in WD-40, alochol, deoxit, simple and not so simple green, and other nasty things to get the sand and grimmy stuff out of it...frankly the goooy grease and junk that came out might have been a blessing, 'cause there was 'zero' corrosion on this "Sandy Blue Beast from Fair."

So, it's an opportune time to think about bringing out a tap for my Panadapter...at 455 kc...the panadapter is a BC-1031C. I'm thinking about a small coupling cap, say 10 to 15 pf, some place just befor the mechanical filters...

Has anyone made such a tap for a Panadapter? Where is the best place to go in there and get some full width sig? What's the best approach and pitfalls if

any...would do this with minimal surgery to the deck, with a tap brought to back panel...and a bnc...similar to the 'IF' bnc...will add a dry transfer label to the bnc, so's it looks professional... and will confuse the be-stinkers out of the purists when they tries to exploin it...might even doctor up the order number just to watch the fun when they sees it...(Yuk, yuk, yuk). Wonder why the R-390's weren't set up for this originally? Odd, since they were used in such a wide variety of service...somebody musta done it and wonder why its not been seen, or did I just miss it here on the list?

Date: Sun, 28 May 2000 18:32:00 +0000
From: "B.L.Williams" <B.L.WILLIAMS@prodigy.net>
Subject: Re: [R-390] panadaptor - connection to R-390A -

I have a Heathkit SB-620 that I am getting signals to, but the horizontal width has problems. There is one cap to replace according to the manual and I'll order it this weekend. I get pretty good shapes but the width is very narrow.

I got my connection info from Hollow States Newsletter. I tapped into pin 1 of V204 which excludes the mechanic filters. I can't tell you yet how wide of a signal I can get on the panadapter due to the horizontal width problems of the unit. You can get the center wire of coax through the hole of the tube shield base, but it is some work. I filed down the wire very thin until my tube standoff arrived from Fair Radio. Now, it is simply inserted right into pin 1 and the tube pin fits okay. I grounded chassis to chassis. I've read varying amounts of capacitance, and will order a 0-15 pf trimmer capacitor from Mouser with the cap I need. I had around 9 pf when I was testing the unit, but will install the trimmer when I finish up. Barry

p.s. Where do I get a decent supply of spaghetti for my recapping job?

Date: Sun, 28 May 2000 21:53:55 -0700
From: "Gene G. Beckwith" <jtone@sssnet.com>
Subject: Re: [R-390] panadaptor - connection to R-390A -

Thanks for the info...I ""presuem"" my panadaptor is working ok, but it too is showing a very narrow display by just testing via the IF output on the rear panel..I knew that was not the way to go, but was just a test of the panadapter...

Will take a look at V204 and see what room there is to get at pin one... thanks for the info...and I do recall something about the Heath unit and the rough 10 to 15 pf coupling...too much is not good, but got to get enough sig for Pan...btw, I recall something about using RG-147 coax...its very small but can be worked...not sure abt its capacitance per unit length...will check it our...but as usual I don't have any on hand...8>(for an experiment...any way will take a bit of time to get recapped and ready for some trials... Hope to hear of your experience with the Heath unit...never saw one work, so can't add much..

Date: Mon, 29 May 2000 10:35:56 +0000
From: "B.L.Williams" <B.L.WILLIAMS@prodigy.net>
Subject: Re: [R-390] panadaptor - connection to R-390A -

From the narrow bandwidth that I saw it was neat. You can see the modulation and side bands on AM signals. The manual shows some examples of adjacent station shapes. I think you could use a panadapter for center tuning with good results. Each type of signal has its own shape and characteristics.

I park on frequencies a lot while I wait for some target to come on the air. Sometimes, this is in the pirate band, or waiting for a clandestine station that I am interested in, or trying to pick out European pirates out of the ham traffic. You can waste a lot of time trying to figure out what is going on with a weak signal between a powerhouse or two, and a panadapter will show you the signals right away. I've heard my R-390A do some amazing things on crowded bands and now I would like to see what it is doing.

I can remember getting two powerful pirate stations on top of each other on the 4th of July perfectly. I was chasing QSLs at the time, so I was logging program info for both stations. I have gotten a few FM broadcasts too and would like to see what that looks like. FM is a real bear to tune in and lock on to, but it can be done. It will drive you nuts if you don't know it is a FM broadcast beforehand. Also, some clandestine stations jump around to avoid jammers. A panadapter is perfect to catch all that frequency changing. It seems to me that it would be interesting to watch those mysterious signals that sort of roll across the dial as they go up and down for whatever reason. Catching numbers stations would be easier with a panadapter too. Yeah, yeah, yeah, weird stuff to listen to, but variety keeps me interested.

Date: Sat, 22 Jul 2000 18:06:19 -0500
From: "Benjamin D. Hall" <kd5byb@wt.net>
Subject: Re: [R-390] Panoramic adapter tap point

Most panadaptors will give instructions and comments on where to feed the panadapter, and often, they will suggest components to use. If I could find my manual for my BC-1031-C, I'd post it's method of hookup... You definately don't want to feed it with the stock IF OUT jack - - the IF filters cramp your bandwidth...

Date: Sat, 22 Jul 2000 20:03:39 -0400
From: "Mort Denison" <mdenison@blazenet.net>
Subject: FW: [R-390] Panadapters

Here's from my archived mail...
- -----Original Message-----
From: On Behalf Of Morris Odell
Sent: Wednesday, August 25, 1999 8:28 PM
Subject: Re: [R-390] Panadapters

Barry Williams wrote:

> Also, there was a very interesting post from either this group or
> Boatanchors about which point to tap into on the 390A for a 1 mHz wide
> signal to a panadapter, and advice on capacitance on the input line to the

> analyzer.

You can't see a full 1 MHz at 455 KHz so if you're using a 455 KHz panadaptor you'll only get 30-50 Khz or so. Just wrap a little bit of wire around the plate pin of the 3rd 6C4 mixer (the one that feeds the IF strip, I don't have the tube designation handy). Put a 0.01 600V blocking cap and 47K resistor in series with it and feed it out through coax to your panadaptor. I use a Singer SA-8B and it works very well. Panadaptors have their own specs regarding capacitance at the input - it's usually part of a tuning network so the length of coax may be important. From the point of view of the R-390A you want to isolate it and keep the effect of cable capacitance as low as possible, hence the resistor. If you want to look at a full 1 MHz you'll have to get the 2-3 MHz signal before the 3rd mixer (ie: before the PTO signal is mixed with it) and use either a special panadaptor (I don't know if such a beast exists for the R-390A - the RA-66 panadaptor for the Racal RA-17 works that way but it's more complicated than the receiver itself!) or a spectrum analyzer.

Date: Sun, 04 Mar 2001 13:41:50 -0600
From: "J. G. Kincade" <w5kp@swbell.net>
Subject: [R-390] BC-1031A Panoramic Adapter

Happened to come into possession of one of these in pretty decent condition. Does anybody know any details on it? I saw a website photo with one sitting on top of an R-390A, which according to the site owner worked great with it. Another bit of web info, however, claimed it used an IF input of 400 kHz, which makes me wonder about the first website. Interesting and businesslike looking piece of equipment, has "MFP 1953" stamped in a red triangle on the front panel, CRT engravings show 200 khz bandwidth, but maybe that's adjustable. Single SO-239 on the back. Does anybody know the straight skinny on this thing, particularly what IF's it will and won't work with?

Date: Tue, 10 Jun 2003 08:05:39 -0400
From: Jim Brannigan <jbrannig@optonline.net>
Subject: [R-390] Coil forms

I have a Heath SB-620 panadaptor set up for a 3395 kc IF. I finally found a description for the coils needed for a 455kc. IF. conversion. Does anyone know of a source for 1/4 inch slug tuned coil forms?

Date: Tue, 10 Jun 2003 09:14:48 -0700
From: Dan Merz <djmerz@3-cities.com>
Subject: Re: [R-390] Coil forms

Jim, I have one of these coils - it may be the one you want or it may be the 3395 KC type - I'm pretty sure it goes with the 620 - it was left over from one I had for awhile. But the amount of wire on it makes me think it's the 3395. How bulky is the actual coil on the 455 - mine looks like it has about 100 turns fairly level and more or less a single layer, Dan.

Date: Tue, 10 Jun 2003 12:53:22 -0500

Subject: Re: [R-390] Coil forms
From: blw <ba.williams@charter.net>

Will you guys keep me updated on how this project goes? I have one 455 kHz SB-620 that is kaput right now. I may end up buying another for repair and parts. Also, there is one resistor up on the top that is IF dependent, located on one of the CRT controls. Don't overlook that as the wrong one will squish the display horizontally.

Date: Wed, 11 Jun 2003 07:45:51 -0400
From: Jim Brannigan <jbrannig@optonline.net>
Subject: [R-390] Coil forms and more

Thanks to all for the suggestion and help with my SB-620. After many years the 455 kc. conversion project might get off the ground. Does anyone know the mixer oscillator injection frequency? It is not stipulated in the manual or on-line sources. Here is my guess: The IF of the Heath "Scanalyzer" is 350kc. To convert 455kc., the oscillator may be either 805 or 105kc. The "high" injection of 805kc produces first order products of 350 and 1260kc. "low injection of 105kc produces 350 and 560kc.

The "High" injection products are further apart and it would be easier to filter the unwanted sum frequency. So my "guess" is 805kc. I know the value of the parallel capacitance. If the oscillator frequency is known, I can calculate the coil inductance. Any help or ideas greatly appreciated.

Date: Thu, 12 Jun 2003 19:39:29 -0500
Subject: Re: [R-390] Coil forms and more
From: blw <ba.williams@charter.net>

A HSN states that the greatest width you can get from the R-390A is 100 kHz. I'm pretty sure that is the limitation. I can't check my issues right now. There is an inherent limitation in the SB-620 with the 455 kHz IF, but I forget what it is at this moment. I think it is 1 MHz. Still useful in crowded situations, beacon DXing, and looking for clandestines that jump around to avoid jamming, etc.

From: "Kenneth G. Gordon" <keng@moscow.com>
Date: Thu, 12 Jun 2003 23:04:28 -0700
Subject: Re: [R-390] Coil forms and more...SB-620, etc...

You fellows might want to take a look at Kees Talen's web site. He has info on winding coils for the SB-620 for the other frequencies and service data.

<http://www.qsl.net/k5bcq/>

Date: Fri, 13 Jun 2003 08:01:18 -0700 (PDT)
From: <jlap1939@yahoo.com>
Subject: [R-390] SSB on the 390 series

A few have asked about the item I sent a few years ago, relating to reasonable SSB on a unit not intended for SSB. They wanted the method again.

We have so many experts on this list...I hesitate to write up the method taught me long ago. I got it straight from Cpl. Stone when I was young and viable...(?) But you don't have to be highly sentient to do this..The ability to listen is the most important requirement.. First of all, while pitch discrimination ranges from perfect pitch, to tone deaf, my understanding is that all can generally detect a very small change in pitch.As a result, the best, (or lowest, in case of the 390), point for the osc, (usually called BFO..)can be determined easily. The change detected by most people is 4 to 5 cents, or 4 to 5 / 100 of a half step in music pitch, a very small ammount indeed. It is, by the way, this ability that allows highly experienced persons to align w/ amazing sucess, with only the ear. (That is, "manually", as is often said). In mil. practice, I saw alignment done to near perfection with this method.. On the above, I refer you to an enormous amount that is available just using the term "sound"..on the internet...Add "music", or "physics" and you could not read it in less than a lifetime..I will not continue on acoustics, but suggest you might want to read, if you never have..(By the way, my minor was Acoustics. I once thought I was bright enough to be an engineer..) It is important to remember that you will always hear a harmonic content in any sound, and you have to listen carefully. It is of interest that the result for all radio SSB transmissions, is sometimes as good as the best converter..It will depend upon being very careful to find the correct settings, and on your filters.

The Method for the 390 series Is...:

1 Remove ant. and go to a very quiet point (rel. to the internal noise). Remove BFO knob, and with BFO switch on, tune BFO to find point where the pitch, or the harmonic complement is at the lowest pitch. (In other words, the "hiss"...). Check several times, then you will tighten the knob at "zero". All this assumes that alignment and BFO neut. and so on, has been done already.

2 When you calibrate for a band, turn the BFO value, to + 1 for LSB, or - 1 for USB, and then run your calibration at the nearest point for your radio. In other words, you will calibrate with the BFO at + or - 1, not at 0. At + 1, you will place that low point, near over the point where the USB complement of any signal would be..(+ or - a little...) In use I vary from 1 to 1.5 with the BFO position. This will result in your LSB component appearing at "0", on the BFO scale..Don't get mixed up about upper and lower..BFO positive is lower, and neg. is upper... Some find 1.5 a more reasonable starting figure for setting up the BFO. bandwidth for signals does vary, after all..

3 In calibration, the accepted method is to find the highest meter reading, but for SSB, tend toward 0, rather than the highest reading..In other words, compromise, and seek zero, if you wish an accurate freq. indication.

4 Select a filter position of 1 or 2, for the 390, and 2 or greater for the 390A, (as the mech. filters will not allow the harmonic complement as well, and you have to allow more room, (as the skirts are so sharp...))

5 On the 390 use the medium setting on the response. (A position that, it turns out does have a value on this radio...)

6 Set your RF and Local gains around 6 to 7 to start with. Be aware that the most common mistake made is setting the RF wide open...The smaller gain you can use with success, the better will be your signal.

7 It will now be necessary to play your controls against one another, and the signal. Note that your indicated freq. is right on, with the correct sound to the vocal if you have followed the list above. I find the miscue in freq. smaller than can well be resolved by the eye...However you may remove a bit more at times, to avoid interference. (And I assume you can tell human speech, from "Donald..")

I use the following example:

Do all the calibration for LSB, and do it at 3900.00. Now tune 3898.5, and listen to the chicken farmer and friends..check out by using ONLY your main tuning, (not BFO..Leave it set at about + 1 to 1.5). You will note that the "excellent" and "useful" digital readout of the 390 series is right on 3898.5...! (depending on align)..Yes.It is much closer than you can resolve on most dials like the, for ex, HQ 180...!! Well Well.. Try 20 meters, follow a few contests...you will be "right on", in freq., or try a few nets...They are usually "at or about.." so you will be closer than you might expect..or than the net actually is..(Try Hurricane net at 3935.) In other words, its' darn near as good as some of your electronic digital...and this in a unit dating back to the late forties.. May I add at this point; It seems that some are not willing to become used to the sound. Others are not keeping the gain of the unit low..or don't stop to realize where the signal for a given sideband actually falls. I also add, that the 600 works very well...just no decent read-out.. And.. I want to point out that I have done this since a child, and got excellent results with the most economical Nat. and Halli. radios..even the 38 series...In those days there was almost no SSB, and you really had to look to find some...Of course, you have to change the method a bit for different radios, according to filters and controls.. It only remains for me to offer my apology for the long-winded post, in the event you have no interest. In addition, I realize that many may find fault with my method, or some may be kind enough to correct me where I have made a mistake. Please feel free to comment, whatever it may be..For those who think I am full of strong wine...try it..you might be surprised...
Regards, John (JLAP)

Date: Mon, 29 Aug 2005 16:02:24 -0400
From: "Gary Mosure" <N8LKA1@peoplepc.com>
Subject: [R-390] monitor scope

Ok here is the deal,I just got a R390A and would like to hook up a monitor scope to it so I can look at the incoming signals, the scope is a Yaesu YO-301. thanks

Date: Mon, 29 Aug 2005 17:25:49 -0400
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] monitor scope

Most straightforward way is probably to hook the IF out to the Y-axis.

To the X-axis you can hook up either a 60Hz source (I think the yo 301 has this as one of the X-axis selections) or hook it to the 600 ohm line output. Not sure exactly why you'd want to do the latter but you ought to see the modulation trapezoid if you do. There's probably some way to hook up a sweep generator and detector to turn the yo-301 into a spectrum scope at the IF frequency but it takes some electronics. Hooking the R-390A, a sweep generator, and the scope together would be a handy way to do IF and some RF alignments.

Date: Tue, 30 Aug 2005 21:17:11 -0700
From: John Kolb <jlkolb@jlkolb.cts.com>
Subject: Re: [R-390] monitor scope

The problem with using the IF output is that it has already been filtered by the mechanical filter and thus the panadapter will only show signals within the 16/8/4/2 kHz bandwidth. What's needed is to tap into the IF chain before the filters.

Date: Thu, 01 Sep 2005 08:56:41 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] monitor scope

> The problem with using the IF output ... <snip>

True, but a YO-301 is not a panadapter, it's a monitor scope. It is true that we're already doing the apples-and-oranges thing by getting asked how to hook a transmitter's monitor scope to a receiver :-).
