

## Yaesu Parametric EQ

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### INITIAL SETTING OF THE FT 950 and HEIL microphone

First, you need to set the transmit bandwidth. I would try 200 - 2800 first. This will roll off some of the extreme low frequency response. You may be able to adjust to 100 as long as it doesn't overload and sound too bassy.

Press the Menu and rotate the SELECT knob so it reads "TX BPF" (Transmit Band Pass Filter). Turn the Clarify/VFO knob to set this bandwidth of 2-28 (200-2800). ALWAYS remember to hold the MENU button for about 3 seconds to save any of these needed items. Set to 400-2600 Hz for DX/Contest work, 300-2700 Hz for everyday operation, 100-2900 Hz for more fidelity. Note that power output meter will show "lower" power as bandwidth is increased; this is normal, reflecting lower power density per Hertz of passband.

**Now we move onto the Parametric.** You can follow this on Page 61 of the FT 950 manual. A Parametric EQ is just as the term implies. You can adjust the parameters of the microphone audio. You do not need 8, 10 15, or for heavens sake a 31 band EQ when we are only dealing with a 3,000 Hz wide signal ! A Parametric EQ usually has only 3 filters. If you have more than three frequencies which need 'attention' you have more problems than an equalizer is going to fix! Wrong microphone, not addressing (speaking into) the microphone correctly, too far away from the microphone, too much room echo and a host of other situations. You can adjust the frequency, the bandwidth and tell those parameters to either notch (-) or boost (+).

The first thing to set is the frequency that you need to affect. There will be three important frequencies to attend to. Low end, Mid Range and Highs. For SSB you will want to 'massage' that low end. For most, roll off the low end by setting the first filter at 200 Hz. You then will tell the filter to roll that off or notch that 200 Hz. You want some big boomy low end? Boost it with that adjustment. The second adjustment is the Bandwidth which is set in the traditional audio nomenclature of octaves. In the amateur radio field we aren't dealing with music material but the adjustment affects voice the same way. If you set this first filter frequency to 200Hz. and have the parametric 'Bandwidth' control set to a wider setting (say 10), the filter will encompass the audio frequencies from about 100 Hz to 400 Hz. If you set the Bandwidth control of the Parametric to 1 or 2, the notch or boost you have set will only affect about 150 to 250 Hz. It affects just a small 'slice' of the audio if the bandwidth is set to a narrow number or setting. You would want to start by keeping that bandwidth to the half way point. The third control of the filter is either - or +. Notch or Boost. If you want to cut some low end, you notch -20 dB at 100 Hz. You want to boost that frequency, you adjust it to + 10dB. We have explained one filter. There are three and that is all you will need to make your transmitter sound terrific. You simply select the needed frequency, boost or notch that frequency and set the bandwidth as to how wide you need to affect. You can listen through headphones through the monitor but I have always found it better to listen through headphones through a second receiver while transmitting into a dummy load. You then know exactly how you sound to the outside world.

Let's get started !

Press the (PROC) button momentarily so MIC EQ shows up in the display. This HAS to be shown as it turns the parametric EQ on.

There are three audio filters that you can change their PARAMETERS (thus 'Parametric' EQ). You set the frequency of the filter. You then set the Bandwidth of that filter and finally you tell the filter if it notches (cuts, reduces) or boosts that filter frequency.

Using the Heil Sound wide frequency range microphones such as the PR 781, PR 30 or PR 40 you will want to roll off the low end as the pre amp of the 950 does not handle a lot of bass response. You will perhaps want to change the frequencies of the first two filters if you are using an HC 4 or HC 5 element which is much narrower in response than the above microphones but start hear and see how this affects your transmitted signal. Again YOU have to make the final decision by listening to your own signal. Now one else can make the adjustments. You.

Set filter one to 200 Hz.	Menu 091	Frequency
CUT that filter -15 dB	Menu 092	Notch or Boost
Bandwidth of 5	Menu 093	Bandwidth
Second Filter 400 Hz	Menu 094	Frequency
CUT -6 dB	Menu 095	Notch or Boost
Bandwidth Q 5	Menu 096	Bandwidth
Third filter 2400 Hz	Menu 097	Frequency
BOOST + 8 dB	Menu 098	Notch or Boost
Bandwidth 5	Menu 099	Bandwidth

NOW - DO NOT FORGET TO SAVE these by holding the menu button for 3 seconds. If you don't do that, all of these settings go back to zero. Save your settings each time.

Now, I am not telling you that this is the end all. Since I can't actually HEAR your transmitted signal, these are just starting points. We have notched some low end out by setting the transmit bandwidth in the beginning then with the EQ, we reduced some low end (menu 091) and this is always a major problem. Sometimes, you will have too much low end audio from the microphone that actually overloads the mic pre amp and 'sounds' like RF but it may not be. It is clipping the mic pre amp.

The first low frequency filter removes all of that low end bass that destroys so many signals. They have lots of bass, no mids, no articulate highs so they end up sounding like mush. The mid frequency is very important. There is usually some craziness that happens around 400 Hz. That is usually notched a bit but there are voices that need some energy around 1000Hz attended to and your just have to make that decision by listening and select the mid range parameters. The all important issue is the third filter where you achieve speech articulation. SO SO important and this + 8 dB boost at 2400 – 3000 HZ is the good starting point for that.

Yaesu has recently had several reports that the 950 is VERY sensitive to RF. No apparent reason but it is true. Many calls a day come through the Heil Sound facility with RF issues. We have recently come up with the perfect 'fix' for that. Use one of our PR series professional balanced output microphones with the 3 pin XLR. All of the new Yaesu series 9000, 5000,2000 and the FT 950 have a balanced audio input on the audio board but they do not use it. They unbalance that 8 pin round mic connector input with their typical Pin 8, pin 7 connections. Sad. Our new cable CC-1 XLR-BAL (with an ORANGE, not traditional Yellow boot) connects our balanced output microphone into the balanced input and has solved 100% of the RF issue for so many FT 950 as well as other new model Yaesu users.

Don't give up on this incredible piece of technology. Once you learn how to adjust and use a parametric equalizer you will never go on the air without properly adjusting.