Mr. Saul Marantz discusses his revolutionary new model 10-B FM Stereo Tuner

Q. Mr. Marantz, your new 10-B tuner is quite revolutionary. Do you feel it will obsolete all other tuners?

Mr. Marantz: In one sense, yes. The performance of this tuner is so dramatically superior to conventional tuners that anyone who wants or needs perfect FM reception today has no choice but to use the model 10-B. Its superiority, however, does not necessarily *obsolete* conventional tuners. Rolls Royce, of course, makes superior cars, but they haven't obsoleted Chevrolets.

Q. Is this superior performance discernible to the average listener?

Mr. Marantz: Very much so. The difference is quite dramatic. As you know, conventional tuners have never been able to pick up and reproduce broadcasts which could match the quality of a fine disc or tape playback system. This has often been blamed on *broadcasting* quality. But the new 10-B disproves this theory. It reproduces the *broadcast* of a disc or a tape with the same clarity and separation as if played through a playback system – proving that broadcast quality is generally excellent.

Q. Is this true with weak broadcast signals also?

Mr. Marantz: Yes. In fact the model 10-B will reach 55 db quieting at only 3 microvolts! This is better than most conventional tuners will reach at 1000 microvolts. With a 25 microvolts station the Model 10-B reaches a phenomenal 70 db quieting which is about 20 db better than most conventional tuners can achieve at *any* signal strength. This means that with the Model 10-B there will be excellent reception even in fringe areas, particularly so because of the tuner's high sensitivity, its extremely sharp selectivity and reduced susceptibility to multipath effects, which on other tuners cause distortion.

Q. How are such improvements accomplished?

Mr. Marantz: The answer to that question is very complex, because the 10-B is far more than an improved tuning system; it is a completely new *design concept* with *many* technical innovations developed by Marantz engineers.

Q. Can you give us some examples?

Mr. Marantz: Yes. The RF section, for example, contains a balanced-bridge diode mixer – a technique used in modern sensitive radar designs to eliminate a major source of noise, harmonic distortion and other spurious interference. The whole RF circuit is balanced-tuned, using a precision tuning capacitor with four double sections, for further reduction of spurious images.

For the critical IF strip, we've developed the first commercial application of the "Butterworth," or phase-linear filter. This new concept provides a number of distinct characteristics essential for good results. The passband, for example, is phase-linear for extremely low distortion – especially at high frequencies – and it remains essentially phase-linear at all signal levels.

Cutoff slopes beyond the passband are extremely steep, allowing unprecedented selectivity; it is much less subject to the effects of multipath, and it doesn't require realignment with tube changes or aging. The old standby coupled IF circuits currently in use do not have any of these characteristics.

Q. Are there any innovations designed specifically for multiplex?

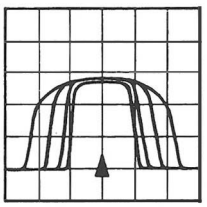
Mr. Marantz: Yes. For multiplex reception we've developed our own unique variation of stereo demodulator, which permits phase correction to maintain a very advanced order of stereo separation throughout the whole audio band.

Q. What is the purpose of the tuning and multipath indicator?

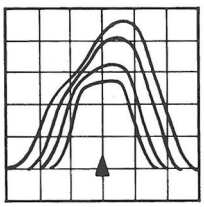
Mr. Marantz: This oscilloscope device is so versatile its single trace tells many easily understood stories. It shows when a station is tuned exactly to the center of the passband. The height of the pattern shows the signal strength. The indicator shows how much multipath is present, making it easy to adjust the antenna for best reception. It shows if the station is creating distortion by overmodulating. Also, technically informed users can check stereo separation of transmissions, discs and other sources.

Q. And how soon will the model 10-B be available in quantities?

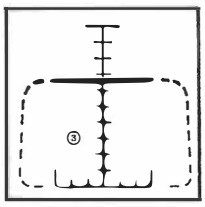
Mr. Marantz: The Model 10-B is a laboratory instrument of extremely high quality which will never be *mass* produced in the usual sense. However, production has been stepped up fourfold and all back-orders are now being filled by Marantz franchised dealers.

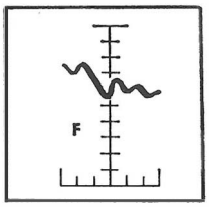


IF Passband retains phase linearity and sharp slopes at any signal strength for low distortion, sharp selectivity.



Conventional mutually-coupled IF circuits change characteristics drastically depending on signal strength.

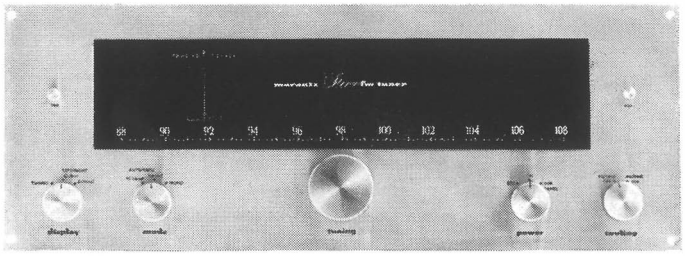




MARANTZ MULTIPATH/TUNING INDICATOR

Station tuning is simply and accurately adjusted by centering the trace.

Multipath (Ghosts) shows up as 'wiggles' on the tuning trace. Antenna is simply rotated until trace is smooth.



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