Hitachi FT5500 MkII

This trend-setting little tuner is now even better, and it's more than just a doddle to use/David Prakel

Hitachi's original FT5500 was launched as the 'tuner that will set standards for years to come'. Undoubtedly it was one of the leaders of a new generation of digitally synthesised tuners that genuinely bettered conventional analogue designs and didn't merely score points on usability.

The trump card that the FT5500 had up its sleeve was a circuit called FCCS (Field Condition Computer System). FCCS — and don't be put off here by the Japanese desire to create acronyms for every feature on their equipment — was a powerful circuit that detected broadcast interference and set up the reception conditions in the tuner to minimise, or if possible eliminate, the distortion. The FCCS looked up and down the bandwidth 2.5MHz on either side of the received frequency to investigate the sources of intermodulation distortion. Depending on what was found the FCCS set the bandwidth of both the RF and IF stages, and RF attentuation.

Suffice it to say that here was a product which automated the setting of features normally seen only on high-end, specialised DX-ing tuners. Hitachi's attempt to create a tuner which could be used by a novice yet which could pull in the best possible signals from a wide range of transmitters received under a similarly wide range of conditions, was an undoubted success with reviewers and public alike. The original FT5500 offered real value for money *and* state-of-the-art performance.

The FT5500, around since the back end of 1981, went through a couple of revisions, brought about mainly by criticisms of the tuner's initial poor performance in the presence of radio frequency muck put out by computers and similar digital devices. The problem, the solution and even Hitachi's reaction, proved most interesting.

The low pass (pilot tone) filter used in the original FT5500 produced a steep notch at 19kHz, and although it attenuated frequencies above this notch the response did rise beyond it. In the new radio environment where tuners share the airwaves with dirt thrown out by microcomputers, the FT5500 produced a hash of high frequency noise in the high teens of kilohertz, which proved annoying to some listeners. Hitachi's reaction to Angus McKenzie's radio breakthrough findings on the FT5500 was not to bury its corporate head in the sand but to go out and build a new low pass filter for the tuner which it incorporated in production models, bringing about a 24dB decrease in the HF noise problem. It was obvious from Hitachi's reaction that the FT5500 was no fly-by-night quick-bucks product, but here to stay.

February this year saw the release of the MkII version of the tuner. The basic recipe stays much the same: a slim-line unit with presets and automatic adjustment according to reception conditions. Ergonomic changes have been made, but more importantly Hitachi has become the first manufacturer to offer examples of a new generation of low distortion semiconductors in a consumer product. These new components, Gallium Arsenide Field Effect Transistors (GaAs FETs to the initiated), further improve the tuner's performance in conditions of high interference.

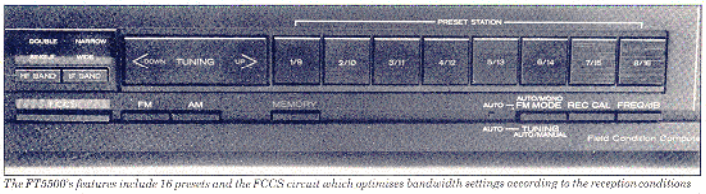
The styling, control layout and features of the MkII are much improved. The three separate LED displays of the 5500 have been replaced by one customised fluorescent panel on the right of the facia. The ten tiny preset buttons of the 5500 have gone, replaced by a row of eight two-position preset buttons. These operate in conjunction with the shift key to their right to give up to 16 preset stations. The great advantage of the new preset arrangement is that the optimised reception conditions set up by the FCCS circuitry are memorised along with the desired frequency, so there is no need to re-optimise reception every time a preset is chosen. The Memory 'write' key is used to enter stations and FCCS settings when the memory legend is flashing in the main display. The 16 presets will each remember received frequency, a channel number, the tuning mode (Auto/Manual), the IF bandwidth (Narrow or Wide) and the RF band mode, Single or Double.

Manual tuning is selected with the confusingly labelled Auto FM Mode Auto Mono/Manual (!) switch. When the tuner is switched to FM reception this button offers the alternatives of automatic scanning and tuning with automatic switching for mono broadcasts and interstation muting, or manual tuning in 50kHz steps in mono only with no interstation mute. This does have the benefit that when tuning manually you can get the best reception in mono without having to contend with stereo tuning, but I can imagine many users finding switching to manual tuning too confusing with the present layout.

When the tuner is switched to the AM mode the auto-scan and manual tune functions operate in the same way as on FM. There is also a note to the effect that, as with FM, if you wish to receive very weak signals from distant stations you must tune manually otherwise the low-level signals will be muted.

There are two most useful features of the FT5500 operated by the buttons next to the Auto/Manual switch. These are the Record Calibration tone and the Frequency/Level facilities. Record calibration tones are often found on up-market tuners, and are used to set the recording levels on a cassette or tape recorder for unattended recording from the tuner. The Record Calibration button merely passes a signal (in this case a 330Hz tone) to the line out sockets on the tuner. Hitachi have published suggested level settings for cassette and reel-to-reel decks when using this level-setting tone, which for once makes the feature something more than a useless gimmick.

Remember if you do have recourse to this



The FT5500's features include 16 presets and the FCCS circuit which optimises bandwidth settings according to the reception conditions

setting that this tone is a midrange signal and will not necessarily save you from tape squash or distortion if the programme you are recording has exceptional levels of high frequency energy. Looking at Hitachi's suggested levels, however, I feel that they have made conservative suggestions to avoid this kind of problem.

The second feature, the Frequency/Input level switching key, when pressed shows the input level display in dB, a most useful feature for aerial alignment and one which does away with the need for a conventional signal strength meter of the bar graph or needle variety.

The tuner's rear panel is moderately well equipped. Aerial connection is by 75ohm unbalanced (co-axial) jack socket or by screw-clamp terminals for a 300ohm balanced dipole. (Not recommended with a tuner of this potential, for while the FT5500 MkII will make the best of even a bad aerial signal it can do so much better if fed with a decent one.) AM aerial connections are made via screw-clamp terminals but for AM Hitachi provide an excellent AM loop aerial and a clip bracket which can be screwed to the back of a hi-fi cabinet or in some equally convenient position. The aerial can then be swung to get the best reception conditions for different stations. One pair of fixed level output jacks are fitted; a variable level output is perhaps the only feature missing from the FT5500 MkII.

Which leaves only the FCCS operation to discuss. The FCCS panel comprises the main FCCS control, two double indicators for RF and IF bandwidth, and two manual selector buttons to override the FCCS setting. Once a station has been tuned the user simply has to press the FCCS button for the tuner to take over optimisation of the reception conditions. Scanning the waveband 2.5MHz above and below the desired frequency the FT5500 looks for interference. The upper portion of the FCCS display will light in the order IF, IM1, IM2 if any such distortions are found; if there is no interference they will not light and the FCCS will set the RF and IF bandwidths to Single and Wide respectively.

If interference is found the FCCS microprocessor will assess the best way to minimise the problem and set the bandwidths accordingly. At this point the memory indicator will light for 5 seconds during which it is possible to store the optimised settings for that channel. With manual tuning the IF band is set to Narrow until the tuning is complete, when depending on the reception conditions the bandwidth will either open up to Wide or will remain set to Narrow if the signal strength is too low. (Selectivity is improved in the Narrow position.)

My own aerial arrangements meant that the FCCS was well nigh redundant. The aerial to which I have access is situated on the roof of one of the tallest residential blocks in Europe and has a mast head amplifier which shifts the distributed frequency away from the broadcast frequency, to minimise ghosting in the downlead. The community FM aerial was installed by Visionhire using very high quality components and it does bring in an enormously strong and clean signal for the six channels it frequency shifts.

To test FCCS I had to rig a purposely poor aerial or try to receive very distant stations on the community feed. The FCCS worked to minimise reception hiss and breakup, and can certainly be said to offer fuss-free optimisation of reception. There's absolutely no need to understand how it works except to know that once you've hit the button you've got the best reception you're going to get!

So what does the FT5500 MkII sound like? Tuners aren't the easiest items of hi-fi equipment to get to grips with subjectively as so much depends on the listener having some idea of the quality of the broadcast material, or having a known reference against which to audition the tuner on test. My own tuner is a Marantz St-7, one of the last all-analogue tuners and capable of the very finest sound quality. The Marantz has switchable IF bandwidth and taking care to use the same wide setting for reception and using the same aerial feed (not a splitter which can cause the two tuners on test to interact), I was able to make straight comparisons as well as general observations on the Hitachi.

The most noticeable quality of the FT5500 MkII is the exceptionally clean top end. The tuner seems to have an absolutely flat response bang up to the very limit of the low pass filtering, at which the response is chopped clean away. You would never describe the top end of the Hitachi's sound as sweet, but then that in itself is a distortion. The FT5500 is absolutely crystal clear, with no hardness and no warmth.

Radio drama showed up the stereo separation and crisp dynamic ability of the Hitachi to perfection. The focus and dynamic clarity of the tuner are to my ears exceptional, which indicates that the audio circuitry is as good as the RF sections. Like a CD player with a well-sorted power supply, the FT5500 really kicks home the bass lines and provides a tight grip on low bass dynamics and detail which all too often simply slop about beneath the music.

The most critical test to which I subject tuners is simply listening to the Radio 4 news desk between 7.30 and 9.00am weekday mornings. Here you find everything from live, high quality voice to cassette and reel-to-reel tapes, from interviews in hotel rooms to those in radio cars. The voices of familiar newsreaders show up the slightest hints of coloration. Not only that, but I'm always in a bad mood in the mornings — ask my wife!

In its month-long sojourn with the Prakels the FT5500 has been in use every day and has never provided anything less than the finest sound quality. The FCCS feature makes you confident of having set up the tuner for the best possible receptions; the tuner for the best possible reception; the both general hiss/noise levels and in breakup on really bad signals makes it more than a talismanic feature.

The only criticisms I would make of this tuner are its slow acting mute which lifts so-slowly when a station is manually tuned, and the confusing Auto Mono/Auto Manual switch.

Perhaps best of all is the FT5500 MkII's price — £179.95. Considering it seriously, this is the single cheapest way of getting your hands on the highest possible quality front-end. You don't get much in the way of an audiophile cassette deck, CD player or turntable for 180 notes, do you? □

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