



STEREOPHONIC BROADCASTING

Test Tone Transmissions – Radio 3 Vhf Stereophonic Transmitters

MONDAYS AND SATURDAYS

After the close of Radio 3 programmes each Monday and Saturday evening, the Radio 3 vhf stereophonic transmitters carry test tone transmissions to assist in the setting-up and checking of stereophonic receivers. The table and notes below describe the tests and their purposes.

It is emphasized that the use of these tests for the adjustment of decoders requires test instruments, technical knowledge, and experience. Listeners lacking any of these are advised to ignore all tests after the first.

Test No.	Time	Left Channel (A)	Right Channel (B)	Purpose
1	T*	250 Hz at zero level	440 Hz at zero level	Identification of left and right channels and setting of reference level
2	T + 2'	900 Hz at + 7 dB	900 Hz at + 7 dB, antiphase to left channel	Adjustment of phase of regenerated subcarrier (see Note 4) and check of distortion with signal wholly in the (A - B), i.e. S, channel
3	T + 6'	900 Hz at + 7 dB	900 Hz at + 7 dB, in phase with left channel	Check of distortion with signal wholly in the (A + B), i.e. M, channel
4	T + 7'	900 Hz at + 7 dB	No modulation	Check of A to B cross-talk
5	T + 8'	No modulation	900 Hz at + 7 dB	Check of B to A cross-talk
6	T + 9'20"	Tone sequence at - 4 dB: 60 Hz 900 Hz 5 kHz 10 kHz This sequence is repeated	No modulation	Check of A-channel frequency response and A to B cross-talk at high and low frequencies
7	T + 10'20"	No modulation	Tone sequences as for left channel on Test 6	Check of B-channel frequency response and B to A cross-talk at high and low frequencies
8	T + 11'20"	No modulation	No modulation	Check of noise level in the presence of pilot tone
	T + 13'	Reversion to monophonic transmission		

* T is approximately 4 minutes after the end of Radio 3 programmes (see *Radio Times*)

NOTES

1. The schedule overleaf is subject to variation or cancellation to accord with programme requirements and essential transmission tests.
2. The zero level reference corresponds to 40% of the maximum level of modulation applied to either stereophonic channel before pre-emphasis. All tests are transmitted with pre-emphasis.
3. Periods of tone lasting several minutes are interrupted momentarily at one-minute intervals.
4. With receivers having separate controls of subcarrier phase and cross-talk, the correct order of alignment is to adjust first the subcarrier phase to produce maximum output from either the A or the B channel during Test 2 and then to adjust the cross-talk (or 'separation') control on Tests 4 and 5 for minimum cross-talk between channels.
5. With receivers in which the only control of cross-talk is by adjustment of subcarrier phase, this adjustment should be made on Tests 4 and 5.
6. Adjustment of the 'balance' control to produce equal loudness from the A and B loudspeakers, is best carried out when listening to the announcements during a stereophonic transmission, which are always made from a centre-stage position. If this adjustment is attempted during the tone transmissions, the results may be confused because of the occurrence of standing-wave patterns in the listening room.
7. The outputs of most receivers include significant levels of the 19-kHz tone and its harmonics. These components do not interfere with normal listening but do affect most signal-level meters. It is essential, therefore, to provide filters with adequate loss at these frequencies if instruments are to be used for the above tests.

SUNDAYS, TUESDAYS, WEDNESDAYS, THURSDAYS AND FRIDAYS

To facilitate channel identification and adjustment of channel cross-talk, 250-Hz tone is transmitted in the left channel only from about four minutes after the end of Radio 3 for twenty minutes. This test may be interrupted from time to time.