

REMOTE TV HEADPHONES

PRADEEP G.

The circuit described here enables one to listen to sound from a TV set without disturbing others. It uses a transmitter and a receiver. The transmitter is of AM type, working in MW range, which can be kept near the TV set. Output of the audio amplifier (headphone socket) can be connected to the transmitter.

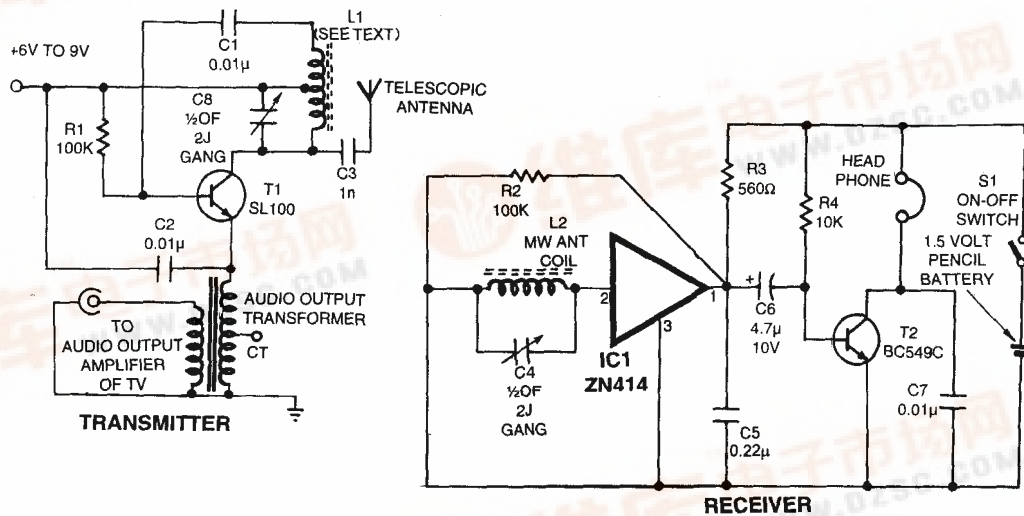
Power supply to the transmitter can be derived from the TV set itself. A separate DC supply can also be used, if desired. The use of a battery gives perfectly distortion-free output.

The receiver is based on 2Z414, a popular RF amplifier-cum-detector

IC, meant for pocket radios. It is a compact receiver with 1.5-volt cell, housed inside a match-box sized plastic cabinet. It has a hole for the headphone socket.

go to VHF range and so no disturbance will be introduced in the TV picture or sound.

In case, you start hearing a programme from a radio station instead,



As the transmitter uses an iron core oscillator coil, the harmonics will never

the frequency of operation of the circuit can be changed.

Readers' Comments:

The circuit of 'Remote TV Headphones' was very interesting. But I have some doubts about assembling this circuit.

1. Please give the correct configuration of IC ZN414.
2. How can I get the complete kit or PCB? Please, mention its cost, etc?
3. What is the maximum range of operation between the transmitter and the receiver?

A.G. Poiya Mozhi
Madras

□ The circuit is very interesting. We can listen to the TV, using this headphone.

IC ZN414 is not available in the market. However, YS414 is available which costs about Rs 35.

I request the author to give internal structure of ZN414 or YS414.

While using YS414, pins 1 and 3 should be interchanged. In the receiver circuit, one end of the MW antenna coil was connected to the negative terminal of the battery. This connection should be disconnected for proper functioning of the receiver.

What is the function of audio output transformer in the transmitter? If we connect the secondary of the transformer in parallel to the TV speaker, then the sound from the speaker de-

creases. How can we avoid the use of this transformer?

MVS Rao
Hyderabad

□ This circuit is very useful for me but how much does the ZN414 IC cost?

I used BF194, instead of SL100. What is the rating of output transformer—3 or 6 volt? What is the range of transmitter?

A.N. Babbu
Rajahmundry

□ The circuit diagrams of the transmitter and receiver have some mistakes. In the circuit for L1, you have marked 'See Text'. But in the text, there



is no mention of L1 and its description.

Allan
Mysore

□ Please clarify the following queries:

1. What is the value of L1 and from which point the coil should be tapped? Please, specify its complete construction method.

2. Specify the type of audio output transformer, used in the circuit.

3. What is the maximum output power of the receiver and the impedance of the headphones?

4. Specify the range of the system.

M. Kumar
Hardwar

□ I have made the circuit, but it failed.

I used the transmitter circuit as usual, but replaced the receiver with a MW pocket radio set. I also powered the transmitter separately through a battery.

While operating, I found noise in the TV. However, on adjustment,

the noise disappeared.

On switching the receiver on, I got a shrill sound. I selected a silent zone in MW band and the sound reduced, but I found that on placing the receiver near (within 3 metres) TV set the sound increased. However, I was able to receive the audio signal, but it was backed by some noise produced by TV set. The background noise was very irritating. Also, the sound quality of transmitter was very poor.

A reader from Calcutta

The author, Pradeep G., replies:

I am thankful to all who have taken keen interest in my circuit idea.

L1 is made of 90 turns with 36SWG copper wire over ferrite rod. The coil is tapped at 75th turn.

Capacitor C4 (0.01 μ) should be connected between MW antenna coil and ground. It should not be connected

directly to the ground.

IC YS414 can be used, instead of ZN414. Pin configuration and internal structure of IC ZN414 have been published on page 104 of Feb '94 issue.

Modulator transformer is a general-purpose audio output transformer. Centre-tap of primary windings is not used. Transformer is 6-volt type.

The circuit can be operated up to 10 metres, without any wire connection to 10 metres and without any wire connection to the TV set. Instead of TV set, a tape recorder can also be used.

IC ZN414 can be obtained from Visha Electronics, Bombay for Rs 30.

Audio transformer is pushpull type, which is serially used in audio receiver and 'bird' bells.

Output power of the receiver is a few milli watts. Any type of headphones or small speaker can be used.

