

HYSTERESIS AT A COAXIAL CABLE AT VHF RANGES

By Igor Grigorov, RK3ZK
antentop@mail.ru

The phenomenon, hysteresis at a coaxial cable, was opened randomly. What is the phenomenon?

We know, when a coaxial cable hangs for a long time at an opened air, losses of the coaxial cable start to increase. For HF- ranges it does not matter, but at VHF ranges the signal starts to fade. However, at those times a SWR in the coaxial cable is not aggravated, and on the contrary, a SWR even is improving. It is obviously the reflected wave cannot reach to the SWR meter because the wave faded in the losses coaxial cable. But a transceiver cannot catch far radio signals.

Such matter was with me, when one service VHF-radio, that was served by me begun to work not properly. I found, that the coaxial cable weaken radio signal more the 10 dB. I just metered the power at the transmitter output, it were 10 Watts, and at end of the coax feedline, it were 2.8 Watts. Then I tried to remove the bad coaxial cable from a cable shaft, but I could not remove the cable, although I very vigorously shook the cable.

So, I could not remove the cable, and I connected the old cable to the transmitter and decided to go

for help. But, before that I tried the transmitter in the air. It impossible, but far radio station heard me! I again metered the power at antenna terminal of the coaxial cable. It was 8 Watts. So, the losses drop from 10 to 2 dB. I cannot explain the phenomenon, I only observed and used it.

I proved the phenomenon in practically way. For this purpose, losses at old coaxial cables, that were enough long time laying in crude places or hanging on opened air, were measured on frequency of 144 MHz. Then the coaxial cables had been vigorous shook and tapped by a wooden hammer. Well, losses in the coaxial cables dropped on to 2- 6 dB.

I have mentioned, at coaxial cables with polyethylene insulator that are at an opened air the phenomenon is observed usually in the middle of winter or in the end of spring. Do you have any idea about it?

It allows me to recommend, for decreasing losses at hanged at an opened air coaxial cables, time to time to shake up the coaxial cables. Before usage of old coaxial cables for construction of feeder systems, the coaxial cables must be vigorously shook and tapped at all of the length by a wooden hammer.

Winter. On a Roof



Russian VHF radio station Mayak



FREE e-RADIO magazine

ANTENTOP

www.antentop.bel.ru