

On the matter of building high-frequency amplifiers minimally influenced by interstage stray reactances

Friday, 14 October 2016 15:15 (30)

The expedience of building wideband multistage amplifiers, the stages of which are connected with each other so, that there is implemented the “ultimate mode”, that is either the one of voltage matching (the previous stage with low output impedance drives the following one with high input impedance) or the one of current matching (the previous stage with high output impedance drives the following one with low input impedance), is justified.

Those modes allow us to reduce considerably the sensitivity of amplifier transfer factors to the stray (constructional) capacitances and inductances of interstage conductors.

The procedure of synthesizing the schematics of such amplifiers is proposed, the efficiency and clarity of which are provided by using the method of signal graphs.

As examples there are considered some variants of building a wideband amplifier, based on three active elements (transistors). Three examples correspond to the widespread in physical experiments cases of converting the detector current to an output voltage, convenient for further signal processing.

Primary author(s) : Prof. VOLKOV, Yury (NRNU MEPhI)

Presenter(s) : Prof. VOLKOV, Yury (NRNU MEPhI)

Session Classification : Poster session - VI

Track Classification : Methods of experimental physics