

RF Signal Generator Command Protocol

The RF signal generator command protocol uses a single-line command format. The communication baud rate is 115200bps. A command is issued by the PC, the machine parses and executes it, and then the result is returned to the PC.

Commands are limited to lowercase letters a–z and numbers 0–9. The terminating character for each command is a newline (hexadecimal 0x0A), and the total length of a command is 15 characters, including the terminating 0x0A.

Commands

There are three types of commands, **r**, **w**, and **c**, as described below.

rid command

Reads the version number

When the PC sends "rid 0x0A", the generator returns its model designation: ADF4350 (or ADF4351). The returned model data is in ASCII character format. There is no need to evaluate the model value. As long as it is returned, it is working correctly.

w command

Writes values to the signal generator. There are three types of w commands.

1. wfc command

Sets the output frequency

The format is: `wfcnnnnnnnnnnnn + 0x0A` (16 bytes, total)

"c" is the channel number:

c=0: write the frequency value to channel 1 (the RF signal generator has only one channel)

"nnnnnnnnnnnnnn" is the frequency value represented by 12 digits

Example: `wf0000123456700`

wf0: writes data to channel 1

000123456700: sets the frequency to 1234567.00 kHz

2. wvc command

Sets the output amplitude level

The format is: `wvcnnn + 0x0A` (7 bytes, total)

"c" is the channel number:

c=0: write the level value to channel 1 (the RF signal generator has only one channel)

"*nnn*" is the level value represented by 3 digits

Examples:

wv0010 sets the channel 1 amplitude to 1.0 dBm

wv0050 sets the channel 1 amplitude to 5.0 dBm

wv0015 sets the channel 1 amplitude to 1.5 dBm

Note: Since the output amplitude resolution is 0.5 dBm, valid values can be in whole or half dBm (e.g., 0.0, 1.0, 0.5, and 2.5 are OK, not 0.1, 1.2, 3.3, etc.).

3. **wpc** command

Sets the sign of the output amplitude level to positive or negative

The format is: `wpcnnn + 0x0A` (7 bytes, total)

"*c*" is the channel number:

c=0: write the sign value to channel 1 (the RF signal generator has only one channel)

"*nnn*" is the sign value represented by 3 digits, where 0 is negative and 1 is positive

Examples:

wp0000 sets the output to the negative value "-00.0 dBm"

wp0001 sets the output to the positive value "+00.0 dBm"