Technical Support
Knowledge Center Open

# How Do I Print Out Floating-point Values?

KEYSIGHT TECHNOLOGIES

Generated on : Apr 12, 2021

# Notices



## Restricted Rights Legend

# Contents

VEE uses binary arithmetic, which means that it presents numeric values which are an exact image of the number as it is stored inside the computer. As an example, set a REAL constant to the value 8.9972, and present that value into a To Printer object. The resulting printout will be 8.997199999999999. This printout may be misinterpreted as a numeric error.

This number is the full precision of the number as understood by VEE. It will not be exactly 8.9972 because VEE is approximating a decimal number with a binary number and an exact match will not occur unless the fractional part is an exact sum of quantities which are an inverse power of 2 -- 1/4, 1/8, 1/4 + 1/8, and so on.

The reason it will be printed in this full-precision / no-roundoff format is because the default format on To Printer (and most other transaction objects) is: WRITE TEXT A EOL -- which implies "standard format": a format that will accept any input, text or numeric, and pass it out as best it can.

If you want to print out a specific precision, set this to: WRITE TEXT A REAL STD:6 EOL -- or whatever precision desired.

Some users observe that when they increase the precision of the Real Constant, they cannot input 8.9972 without it being extended to 8.997199. For this case, VEE is simply doing what it is told to do; not a problem, since the precision may be set to whatever is desired by the user.

This issue is not unique to VEE; it is common to any software that uses binary floating-point arithmetic. It is, however, much more visible in VEE than in C, because in VEE we get to see it happen. In C, however, we must print the data first, and that usually involves a formatted output.




www.keysight.com