HP VEE

Visual Programming for
## Virtual Instrumentation

ComputerBoards is proud to introduce HP VEE 5.0 in this catalog of important new products. HP VEE is the ideal graphical programming environment and has been field proven by Hewlett-Packard, a name you can trust.

In keeping with the exciting changes in personal computer data acquisition and control, now becoming known as Virtual Instrumentation, ComputerBoards has developed an interface to the premier visual programming environment; HP VEE. With it you can develop virtual instrumentation that gives you a competitive advantage by making product quality an integral part of your organization.

From product development, through production test and on to customer service, HP VEE and ComputerBoards give you the tools to build a totally integrated environment.

Operator Interface

Create operator interfaces in minutes. A complete assortment of user input and data display features. Use pop-up dialog boxes to conserve screen space. Secure your programs from tampering.
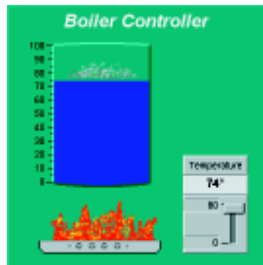
Simulate instrument panels with HP VEE.
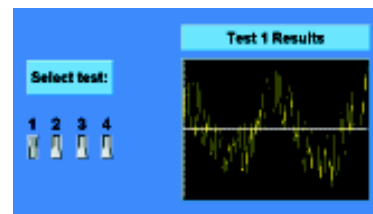
Features for icon alignment make it easy to create a professional look for your programs.
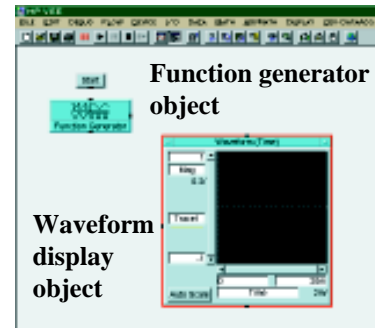
HP VEE shows the current status of three instruments in this test system

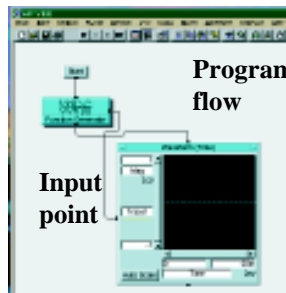**An HP VEE program is constructed by selecting objects from the pull down menus.**

**Device menu holds a function generator object.**

Function generator object

Waveform display object

Placing the objects on the form in a manner that's both pleasing to the eye and logical to view.
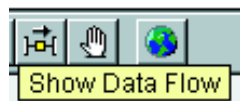
Program flow

Input point

And connecting the objects with wires at input points, output points and controlling program flow by connecting the objects program flow points with wires.

You can define program flow, or you can allow HP VEE to select a logical program flow for the objects in your program.
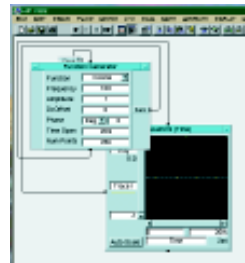
Run your program by pressing the START button.

The function generator creates a wave. The scope displays a trace of the wave.

Show Data Flow

It's easy to select animation of data and execution flow, as shown in these toolbar icons

Using HP VEE's line probe makes it easy to examine data as it changes throughout your program.
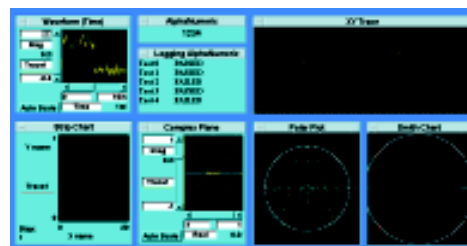
Data Displays Reduce development time with flexible data displays. Choose from a wide selection to suit your needs.

Data Acquisition & Analysis Software

Analysis Capabilities

Find the functions you need in comprehensive analysis libraries.
Extend built in analysis capabilities with math libraries in other languages to suit you needs.
Use your own formulas with HP VEE's Formula object.

Formula Entry
Math
+,-, *, /, ^
mod, div

Relational
==, !=, <, >
<=, >=

Logical
and, or, xor, not

Bitwise
bit(x, n)
bits(str)
setBit(x, n)
clearBit(x, n)
bitOr(x, y)
bitXor(x, y)
bitCmpl(x)
bitShift(x, y)

Real Parts
abs(x), ceil(x)
signof(x)
ordinal(x)
round(x)
floor(x)
intPart(x)
fracPart(x)

Complex Parts
j(x), re(x)
im(x), mag(x)
phase(x), conj(x)
String
charToInt(a)
inToChar(a)
strUp(str)
strDown(str)
strRev(str)
strTrim(str)
strLen(str)
strFromThru(str,
  from, thru)
strFromLen(str,
  from, len)
strPosChar(str,char)
strPosStr(str1, str2)
Power
sq(x), sqrt(x)
cubert(x), recip(x)
log(x), log10(x)
exp(x), exp10(x)

Polynomial
1:poly(x,[a0 a1])
2poly(x,[a0 a1 a2])
3poly(x,[a0 a1 a2 a3])
4poly(x,[a0 a1... aN])

Trig
sin(x), cos(x)
tan(x), cot(x)
asin(x), acos(x)
atan(x), acot(x)
atan2(x, y)

Hyper Trig
sinh(x), cosh(x)
tanh(x), coth(x)
asing(x), acosh(x)
atanh(x), acoth(x)

Time & Date
now()
wday(date)
mday(date)
month(date)
year(date)
dmyToDate(d, m, y)
hmsToSec(h, m, s)

Array
init(x, value)
rotate(x, numElem)
concat(x, y)
sum(x), prod(x)
sort(x), totSize(x)

Matrix
det(x), inverse(x)
transpose(x)
indentify(x)
minor(x, row, col)
cofactor(x, row, col)
matMultiply(x, y)
matDivide(x, y)

Calculus
integral(x), deriv(x, 1)
deriv(x, 2)
deriv(x, order)
defintergral(x, a, b)
derivAt(x, 1, pt)
derivAt(x, 2, pt)
derivAt(x, order, pt)

Regression
linear
logarithmic
exponential
power curve
polynomial

Data Filtering
polySmooth(x)
meanSmooth(x,
numPts)

movingAvg(x, numPts)
clipUpper(x, a)
clipLower(x, a)
minIndex(x)
maxIndex(x)
minX(x)
maxX(X)

Probability
random(low, high)
randomize(x)
randomSeed(seed)
perm(n, r)
comb(n, r)
gamma(x)
beta(x, y)
factorial(n)
binomial(a, b)
erfc(x)
erf(x)

Statistics
min(x), max(x)
median(x), mode(x)
mean(x), sdev(x)
vari(x), rms(x)

Freq. Distribution
linMagDist(x, from,
  thru, linStep)
logMagDist(x, from,
  thru, logStep)

Bessel
j0(x), j1(x), jn(x, n)
y0(x), y1(x)
yn(x, n), Ai(x), Bi(x)

Hyper Bessel
i0(x), i1(x), k0(x),
k1(x)

Signal Processing
fft(x), ifft(x)
convol(a, b)
xcorrelate(a, b)
bartlet(x)
hamming(x)
blackman(x)
rect(x)

Free Start-Up Support

When you buy HP VEE from ComputerBoards you get two sources of world class support: Free support on data acquisition boards and drivers for as long as you own our products and free HP VEE support for the first 90 days of ownership direct from Computer-Boards. After 90 days we suggest the purchase of a Hewlett-Packard support contract. *If* you need it! Hewlett-Packard's world class support starts when you register your new HP VEE. At that time you will receive, at no charge, access to:

-HP VEE WEB site/BBS
-HP VEE Internet Users Group
-HP VEE Monthly Newsletter
-HP VEE 24 hour faxback service

You can contact HP by phone, fax or the Internet to get high-quality service. Enjoy a complimentary 90 day start-up phone support contract with your purchase of HP VEE for Windows. Scan the Internet and bulletin boards for up-to-the-minute information on HP VEE, including current driver lists and application notes. Talk to other HP VEE customers over e-mail to share application ideas.

What About? Support & Training from Hewlett-Packard & ComputerBoards

HP Training

Learn quickly at your own pace with on-line documentation, HP VEE manuals or the Prentice-Hall books mentioned in the table of contents. All provide practical examples to get you up-and-running quickly.

Get classroom instruction from an HP VEE expert at your site or at an HP customer training center near you. To register, contact 1-800-472-5277 in the United States.

Order HP VEE today, or call for a free demonstration system on CD ROM!