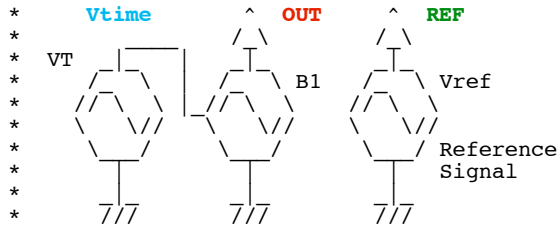


PM_is_FM_Wave

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* www.idea2ic.com

* PM Signal



```
* SFFM(      VO VA      FC      MDI      FS      )
* V(t)=      VO +VA*sin(2π*FC*t +MDI*sin[2π*FS*t])
* spec 2      2k      2      v(out)      spec 2Hz->2kHz @ 2Hz steps
* .tran TSTEP TSTOP TSTART TMAX ?UIC?
.OPTIONS GMIN=1e-12 METHOD=trap ABSTOL=1e-12 TEMP=27 srcsteps = 1 gminsteps = 1
*=====
VT      Vtime 0      PWL      ( 0 0 1 1 )
B1      V_PM 0      V =      sin(6.283185307179*200*v(Vtime) +1*sin(6.283185307179*20*v(Vtime)))
V_FM    V_FM 0      SFFM(.1 1 200 1 20)
.tran   10u .1      0      10u

.control
set      pensize = 1
run
plot     v(v_pm) v(v_fm)
plot     v(v_pm)-v(v_fm)

.endc
.end
```

=====**END_OF_SPICE**=====

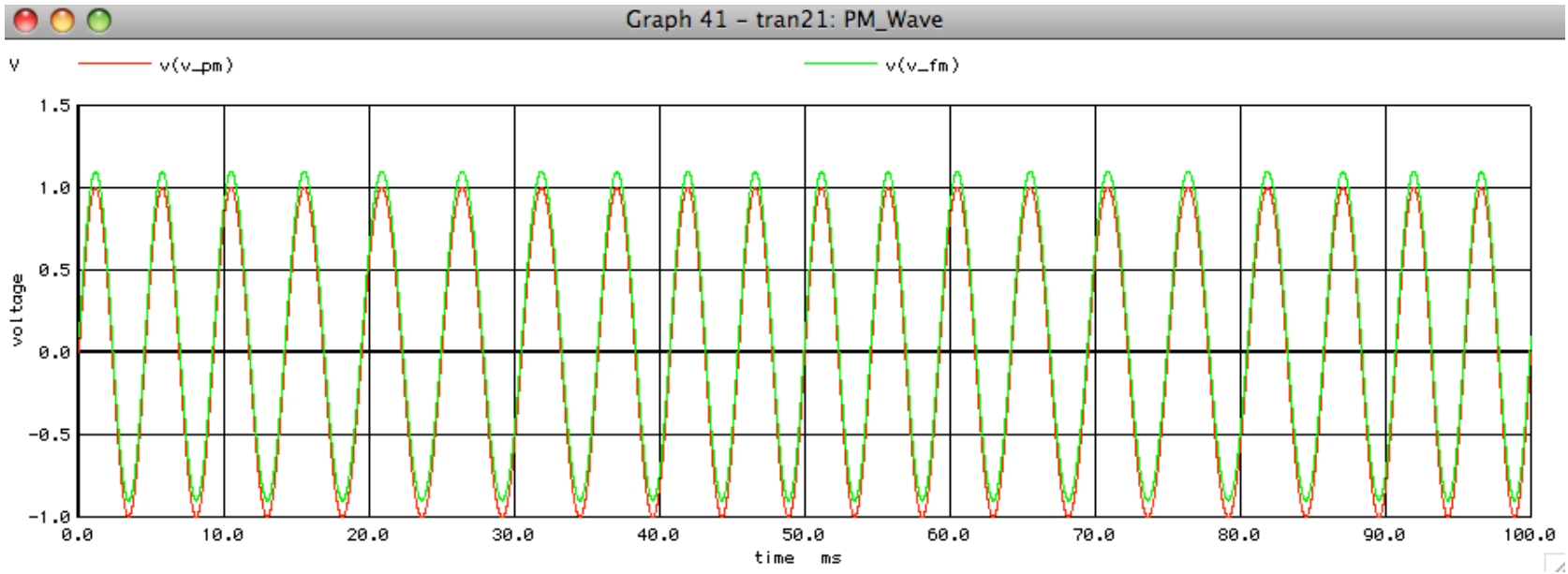
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This example compares the standard FM signal (**V_FM**) to a generated PM signal (**V_PM**) to set the math errors. The FM signal is in the following format.

```
* SFFM(      VO VA      FC      MDI      FS      )
* V(t)=      VO +VA*sin(2π*FC*t +MDI*sin[2π*FS*t])
```

A value for MDI = 1 corresponds to a +/- 1 radian phase modulation.



A 100mV offset was added to the FM signal to be able to see the two waves. Subtracting the two signals reveal the offset and math errors between the two waveforms below.

