

```
BaseBand equ 32
LPF1 equ 33
LPF2 equ 34
LPF3 equ 35
LPF4 equ 36
HPF equ 37
Temp1 equ 38
Temp2 equ 39
IN1 equ 40
IN2 equ 41
PK1 equ 42
PK2 equ 43
mem AP1 1
mem AP2 1
mem AP3 1
mem AP4 1
mem AP5 1
mem AP6 1
mem AP7 1
mem AP8 1
mem AP9 1
mem AP10 1
mem AP11 1
mem AP12 1
;////////////////////////////////////
KVal1 equ 0.9949
KVal2 equ 0.9639
KVal3 equ 0.8714
KVal4 equ 0.5565
;////////////////////////////////////
KVal7 equ 0.0133
KVal8 equ 0.76356
KVal9 equ 0.93085
KVal10 equ 0.9829
;////////////////////////////////////
rdax adcr,1 ;//load ADC into ACC
rdfx HPF,0.04 ;do HPF
wrhx HPF,-1
rdfx LPF1,0.6 ;do LPF
wrax LPF1,1
rdfx LPF2,0.6 ;do LPF
wrax LPF2,1
rdfx LPF3,0.6 ;do LPF
wrax LPF3,1
rdfx LPF4,0.6 ;do LPF
wrax LPF4,1
wrax BaseBand,0.01325 ;write to baseband and attenuate to keep
;////////////////////////////////////
;///
rda AP1+1,KVal1
wrap AP1,-KVal1
rda AP2+1,KVal2
wrap AP2,-KVal2
rda AP3+1,KVal3
wrap AP3,-KVal3
rda AP4+1,KVal4
wrap AP4,-KVal4
sof -2,0 ;only negative coef provides a full 2.0
sof -2,0
sof -2,0
sof -2,0
sof -2,0 ;multiply by 32 to recover signal level
;////////////////////////////////////
;simple agc limiter, -24 dB threshold, peak detecting
```

```
wrax IN1,1 ;input from ACC
maxx PK1,0.99998 ;compare with pkfil*.999 (abs)
wrax PK1,1 ;write peak value back
log -1,-0.25
exp 1,0 ;1/x
mulx IN1
sof 1.8,0
sof -1.8,0 ;restore gain, but avoid output clipping
sof -1.8,0
sof -1.8,0
;////////////////////////////////////
wrax Temp1, 1;//Temp1 = ACC
mulx Temp1 ;//Temp1 * ACC
wrax Temp1, 0;//Temp1 = ACC^2
;////////////////////////////////////
rdax BaseBand,0.01325 ;//load filtered baseband into ACC
rda AP7+1,KVal7
wrap AP7,-KVal7
rda AP8+1,KVal8
wrap AP8,-KVal8
rda AP9+1,KVal9
wrap AP9,-KVal9
rda AP10+1,KVal10
wrap AP10,-KVal10
sof -2,0 ;only negative coef provides a full 2.0
sof -2,0
sof -2,0
sof -2,0
sof -2,0 ;multiply by 32 to recover signal level
;////////////////////////////////////
;simple agc limiter, -24 dB threshold, peak detecting
wrax IN2,1 ;input from ACC
maxx PK2,0.99998 ;compare with pkfil*.999 (abs)
wrax PK2,1 ;write peak value back
log -1,-0.25
exp 1,0 ;1/x
mulx IN2
sof 1.8,0
sof -1.8,0 ;restore gain, but avoid output clipping
sof -1.8,0
sof -1.8,0
;////////////////////////////////////
wrax Temp2, 1 ;//Temp2 = ACC
mulx Temp2 ;//ACC^2
rdax Temp1, 1 ;//ACC1^2 + ACC2^2
LOG 0.5,0
EXP 1,0 ;//sqrt(ACC1^2 +ACC2^2)
;////////////////////////////////////
wrax dacr, 0 ;//load dac from ACC then clr ACC
```

