Signal Generation Using the

TMS320F243 DSK / TMS320LF2407 DSK

The schematic on the following page gives a simple circuit for using the TMS320F243 DSK or the TMS320LF2407 DSK for generating waveforms.

Application for the TMS320LF2407 DSK: Sine

Uses tables to generate a sine and cosine waveforms.

Digital to analog conversion is implemented using pulse-width modulation (PWM). The outputs of General Purpose Timers GPT1 and GPT2 are used for this purpose.

The resistor/capacitor networks provide a 1 kHz low-pass filter. This means we can generate output waveforms up 1 kHz.

For experimentation, the following modifications could be made to the code:

1. Generate the sum of 2 waveforms e.g. (sine + cosine)/2
2. Generate difference between two waveforms e.g. (sine – cosine)/2
3. Change the values in the table to generate a triangular output.
4. Generate irregular waveforms – put some random values into the table.

The sample C code is to be found in the directory `sine`.

References

SLAA116 Application Report on using PWM from a timer as a DAC.

Click To View

Template……．A basic project for the TMS320LF2407 DSK. Configures an analog-to-digital converter and generates a pulse width modulation (PWM) output.
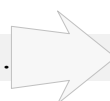

To View Applications Please Click

Signal Generation………..TMS320LF2407 DSK: Sine

Audio Interface……..……TMS320LF2407 DSK: FIR
TMS320LF2407DSK: IIR
TMS320LF2407 DSK: FFT

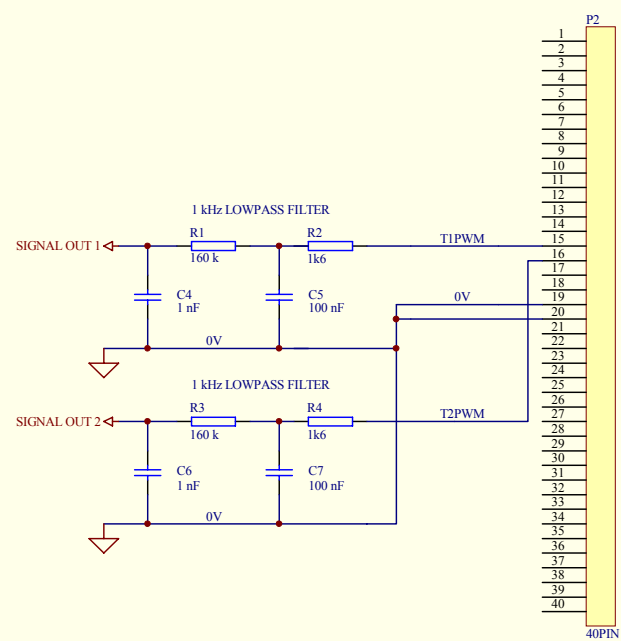Motor Control……………...TMS320LF2407 DSK: Stepper Motor
TMS320LF2407 DSK: DC Motor

Click here to view……….⟹ **Route Map**

Schematic 1 Below ↓

SIGNAL GENERATION USING THE TMS320F243 DSK / TMS320LF2407 DSK

P2

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40

40PIN

1 kHz LOWPASS FILTER

SIGNAL OUT 1

R1
160 k

R2
1k6

T1PWM

C4
1 nF

C5
100 nF

0V

0V

1 kHz LOWPASS FILTER

SIGNAL OUT 2

R3
160 k

R4
1k6

T2PWM

C6
1 nF

C7
100 nF

0V

Title		
SIGNAL GENERATION USING THE TMS320F243 DSK / TMS320LF2407 DSK		
Size	Number	Revision
A4		1
Date:	19-Jun-2001	Sheet of
File:	C:\CLIENT\SCH3\SIGNAL.SCH	Drawn By: RICHARD SIKORA