

MULTIRATE FILTERING:
IMPLEMENTATION ON TI TMS320C54X (-
JAPANESE)*

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Based on *Multirate Filtering: Implementation on TI TMS320C54x*[†] by

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Abstract

You will implement a multirate system that includes three finite impulse response filters. The sample-rate compression and expansion factors can be controlled in real time using a MATLAB graphical user interface.

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1 –œ

Multirate Processing: Introduction¹@08kffΛ2dDΔœœW8H"œ0@ΔFIR1AFIR2Ak008zœ\$bCdk-2dk#ΞZ0W2Θ6G2=GzœG%
 $D = U = 4AÆØ\#GsAkÆC.ÆΘ6GΔ,GkMATLAB-œ~œkj?j0W2Θœk(jΔ,Gk!?\#Æ?Y.ÆΘ$

1.1 œœ

œœ@kΛØ8ZDΔœD"œ(JW)kffΛ0?(9.ÆΘ"œHÆ=sœ%y1d\$k[#0ΔW8Æ=œ"œkffΛ2d8ZDFIR3GDk2d\$k[#2d8ZD!W2Θ
 œ!kffΛ2d8ZDœD=GÆ(=\$HΔadm(add to memory:œD!d)Abc(branch conditional:βMb)@2ΘW8Δbantz(branch
 on auxiliary register not zero:Q%0CbβM)]b(branch:βM)[œD=@0'ØΘ

1.2 ff/œ;ZAMATLAB-œ~œ

#Czœœ-œ~œ(GUI)HΔyœC:@DSPD1\$b10GWk~d%(ser_snd.m² k^2dmrategui.m³ A0?)ai@2Θ,eHff/DsAkj`2d8ZD!W2Θ
 MATLABGDmrateguiAD;,XΔGUIkf0C.ÆΘA%AD-AD&W2ΘΓ-k2dAΔDSPD~be8sA%i;hcW2Θ
 F!be8yœHΔDSP%ho1dA; *be8œGœœ\$b; *1j?ÆdTGWkJ50W2Θ6G8ZΔœC8%6GF!be8œG0Λkj!CÆcΔ,GD#Æ?HΔGUI
 yœ\$bGœX1cAΔyœQGœ~jDX.edREADSERAWRITSER%ΔBKAzTCA1pDΔAR0ΔAR1ΔAR2Δ60?AR3k&2dWD0?Y.ÆΘ6G8ZΔ,
 READSERAWRITSERD12dfH Core File: Serial Port Communication Between MATLAB and TI TMS320C54x⁴DœœW2Θ

¹"Multirate Filtering: Introduction", Figure 1 <<http://cnx.org/content/m10024/latest/#fig1>>
²http://cnx.org/content/m12358/latest/ser_snd.m
³<http://cnx.org/content/m12358/latest/mrategui.m>
⁴"Core File: Serial Port Communication Between MATLAB and TI TMS320C54x"
 <<http://cnx.org/content/m10821/latest/>>