

Dñ { dgg hu#K dp lwrq

Ohw hu#r i#F unglw#Sd | p hqw#P rgxñ

µDSP Û

Wuhdvxu| #J rhv#J unhq
dgg#Wdyhv

O|qgd#P fJ rh |
P dgdj hu#r i#wudgh#dgg#Surnfw#I lqdqfh
R fwrehu#5 ; #533 ; #



JH1#Z kdW#z h#gr#A

Jared #Jhdfk / #Jared #p sdfw

- ~ 633 / 333 . #hp sar | hhv # ruogz lgh
- ~ Jurz lqj #q #h | #p dunhw
- ~ P dqxidfwxulqj #idflwlvhv #q #73 . #frxqwlhv
- ~ R shudwlrqv #q #433 . #frxqwlhv
- ~ ' 4 : 6 #E lqrlrq #q #Jhyhqxhv #q #533 :
- ~ ' 5518 #E lqrlrq #q #Iduqlqjv #q #533 :

JH#ds ldo

- ~ Dylwlrq#lqdqflde#Whuylfhv
- ~ Frp p hufldg#lqdqfh
- ~ Hqhuj | #lqdqflde#Whuylfhv
- ~ JH#P rgh |
- ~ Wuhdvxu |

JH#Hqhuj | #qiudvwxfwuh

- ~ Hqhuj |
- ~ R l#) #d v##
- ~ Z dwhu#) #Surfhvv#Whfkqrærj lhv



QEF#Kqlyhuwdo

- ~ Fdedh
- ~ 1Ikp
- ~ Igwhuqdwlrqdo
- ~ Qhwz run
- ~ Vsruw# #Rqp slfv

JH#Whfkqrarj | #qiudvwuxfwxuh

- ~ Dyldwlrq
- ~ Hqwhusulvh#vroxwlrqv
- ~ Khdawkfduh
- ~ Wudqvsruwdwlrq

JH#rqrqvxp hu# #qgxvwuibo

- ~ Dssddqfhw
- ~ Oljkwkqj
- ~ Igqgxvwuibo



Wudgh#dqg#Surmfw#l b dq fh#A

Vxssruw#JH#Z rugz bh

Ohwhu#r i#fuhg l#hh#sd |p hqw



~ 5335

~ 45#exvlqhv#lhw#53#edqnv#1333#
dfwlyh#qvwxp hqw/#5/833#dqxqdx#
sd|p hqw#srwir#41;E/#zhnd#
sd|p hqw#f|fdh/#5#xowp h#
hp sr|hvh#

~ 533;

~ 94#exvlqhv#lhw#53#edqnv#5633#
dfwlyh#qvwxp hqw/#533#dqxqdx#
sd|p hqw#srwir#;E/#xdwhu#
sd|p hqw#f|fdh/#5#xowp h#
hp sr|hvh#

Krz #fdq#z h#qvxuhB

Ihh#dffxudf|#dffxudwh#sd|p hqw#Eruhfw#kdujh#edfn#wr#kh#exvlqhv#
frqwr#chwkl#ghw#lbg#qirup dwrq#r#hdfk#wdqvd#wr#ru#do#sd|p hqw#
f|fdh#wr#Erp sq#z lk#Erp sdq|Š#3#wdqgdug#

D#z k l#eh#qj#d#j rrg#Erusrudwh#qylurqp hqwde#l#l}hq

Dqvz hu=

DSP 0DOR F#sd|p hqw#p rgxh

Ohwuh#r i#fuhg l#h#s d | p hqw



Sd | p hqw# | fdh=

- ~ Edqnv#dxw0j hqhudwqj #qyr lfhv#g d b | #dxvbj #Erqixvlrq
- ~ Wr#hhs#s#z lk#kh#dujh#yrox h#r i#qyr lfhv#s d | p hqw#z huh#p dgh z hnd

Iruh lj q# { fkdqj h#dwhv=

- ~ 6633#dfwyh#02Fv#dqg#j xdudqwhv#vvhg#q#6 < #g liuhqw#Exuhqf lhv
- ~ 63#edqnv#wid} bj #khl#z q#ydulrxv#qwhudq# [#dwhv#q#d#] lyhq# gd | #edqnv#dxw0j hqhudwqj #qyr lfhv#g d b

P dqxda#surfhvv#p xwls#dwhv#Erqixvlrq

Ohw#hu#r i#fuhg l#h#s d | p hq#w

ǒ DSP



~ Ighq#w|i| #dohuqdwlyh#wr#yhqgru#s d | p hq#w#kurxjk
df#rxq#w#s d | de#h

ǒ Z run#z lk#JH#Edvk#p dgdjhp hq#w#hdp #w#bqn#wr#z he#Edvk#
vh#w#bqj#xs#uxvwhg#rxufh#wdwv#iru#lxwrp dwf#dssuryhg#
sd|p hq#w#r#suh0ghwhup bhg#edqn#p rghov#

ǒ Z run#z lk#qwhuqde#l#bqj#w#hdp #EV##

ǒ Iqfuhdvh#Erqwur#hukls#surfhvv#durxqg#hh#s d | p hq#w#

ǒ H{whqg#s d | p hq#w#E | f#h#urp #: #w#3#g d | v

ǒ Iqvxuh#e#l#edfn#wr#exvbqhv#Erp s#whg#ehiruh#hgjhu#
f#rv#bqj#hdfk#xduwu

Z run#z lk#qwhuqde#l#bqj#w#hdp #EV##

Ohwuhur i#fuhg l#hh#sd | p hqw ō DSP



- YR F#rewlqhg#urp #edqnv#lqg#exvqhvvhv
ō Ghwlv#htxling#ru#ndvh#ri#hfrqflbdwlrq
ō Krz #r#surygh#Erp sdwh#hsrwqj #hdw#p h
ō H{saruhg#elqj#rswlrqv2vroxwlrqv# lk#kdung#huylfhv
ō Krz #r#fkdujh#exvqhvvhv#kurxjk#qwhuqda#elqj#|whp #
#EV#i#z h#dgrsw#z he#fdvk#r#p dnh#yhqgru#sd | p hqw
ō Exlg#dq#EV#dqnr#khr#rrow#dxw#ydogdwh#qwhuqda#
fkdujh#Erghv#dwh#khw#p h#ri#Q2F#lvxdqfh#htxhw#j undwq #
uhgxfqj #qfruhfw#ngjhu#fkdujhv#

Z run# lk#qwhuqda#lqg#{whuqda#exwrrp huv#ru#hvw#hvroyh

Ohwhu#r i#fuhg l#hh#sd | p hqw



- Wdujhw#p hw#lqg#h{fhghg#e | #DSP #Å JHŠ#erowr#r#DOR F#
 - ō Hōp lqdwg#p dqxd#qyr lfh#gdw#qsw
 - ō]hur#sdshu#qyr lfhv/#hur#kfhfv/#hur#srwdjh#
 - ō Dgp lqlwdwyh#hh#dybjv#ru#kh#dqnv#lqg#kh#exvqhvvhv
 - ō Hōp lqdwg#hz run#qyrohg#q#qfruhfw#ru#ofn#r i#sd | p hqw#
uhvroxwlrq
 - ō V|vwhp #fdoxodwhv#dō#hhv#ri#ri#edqnš#elg#hsq #q#DOR F
 - ō Hōp lqdwv#hh#g lvfusdqflhv2g lvsxwhv
- Hqylurqp hqw#ō wkh#6#Jv
 - ō Uhgxfh#hxvh#hf | fō
 - ō]hur#sdshu#qyr lfhv/#hur#kfhfv/#hur#srwdjh
 - ō 4#wuh#@#; /633#shfv#ri#sdshu
 - ō DSP #dybj#9198 wwhv#lqqxdō #

Ohwuhuv#r i#fuhg lw



Edqnhuv#

Rq#DSP #ð μMS# rujdq#v#hu| #ðndvng# lk#hghudc#ðdfwlfš#DSP #|w#p #ð d#erp sðwh#ðffrxq#w#d|dcd#|w#p 1

Wkh#|w#p #v#hu| #hðdeð#ðgg#ðffxudwh#q#surfhvv#qj #hhv#q#ð w#p hq| #ðvk#lrq#hðwhg#v#vkh#wdqge | #ðwuhuv# i#fuhg lw#ðgg#dqn# jxdudqwhv#v#vxhg# | #MS# rujdq1

V#qf#kh#q#wrgx#f#wrg#r i#DSP #|w#p #MS# rujdq#v#qjhg#v#fudwh#qyr#lfhv#p d#lqj#f#r#w#h#nsk#r#h#r#r#z#ks#ðgg#q#lvsxw#h#v#r#x#w#r#q# kdyh#ðhhg#v#rd#ð #ðp lqdwng#ðgg#x#q#yr#lfh#SR#v#kdyh#ðhg#f#ng#e | #ðw#ðndw#63#q#d|v#z#khq#vkh#ð|p#hqw#v#h#f#h#y#g#e | #kh#dqn#v#sury#ghv#x#ð#h#nd#q#r#z#q#i#f#kduj#v#ðgg#r#z#kh#h#v#z#h#h#d#f#x#w#g#

MS# rujdq#v#hu| #ðndvng# lk#kh#DSP #|w#p #ðgg# r#x#q#h#h#r#h#w#q#g#s#h#f#l#d#w#k#d#q#n#v#r#ð|q#g#d#p#f#J#r#h|#p#d#q#d#j#h#v#u#d#h#ðgg# Sum#f#w#l#q#d#q#f#h#ðgg#g#h#h#g#redu#S#o#l#q#v#h#q#r#u#D#q#d#v#ð#w#H#r#rus#rudw#h#u#d#v#x#| #ru#l#q#q#r#y#d#w#y#h#k#l#n#l#j#ðgg#e#u#l#j#l#j#k#l#v#|w#p #q#w#r#h#d#d#w|#ð#p#d#j#l#q#d#w#r#q#ð#w#z#run1

V#d#g#d#w#k#N#k#d#q
MS# rujdq
H{h#f#x#w#y#h#g#l#h#f#w#r#u
J#r#e#d#d#w#u#d#h#h#y#l#f#h#v



J#h#q#h#u#d#c#ð#d#f#w#l#f#š#DSP #|w#p #ðp#l#q#d#w#v#k#h#w#d#q#ge | #ðwuhuv# i#fuhg lw#e#l#q#j#sur#f#h#v#h#u#r#p#ð#l#d#q#n#š#h#u#v#h#f#w#y#h#z#khq#ð#e#l#g#v#s#o#f#h#g# l#q#DOR#F#v#k#h#e#l#g#q#f#r#u#r#u#d#w#v#k#h#h#v#r#f#l#d#w#g#z#lk#k#h#v#v#x#d#q#f#h#i#k#h#w#d#q#ge | #ðwuhuv# i#fuhg lw#R#q#f#h#ð#d#q#n#v#q#r#w#i#l#h#g#k#d#w#k#h|#z#r#q#k#h#e#l#g#v#k#h#w#d#q#ge | #ð2#F#v#v#v#x#h#g#l#q#q#ð#x#d#w#u#q#ð#d#v#l#v#k#h#h#v#r#f#l#d#w#g#z#lk#k#h#v#v#x#d#q#f#h#i#w#d#q#ge | #ðwuhuv# i#fuhg lw#d#h#u#h#p#l#w#h#g#v#r#k#h#e#d#q#n#v#k#h#DSP#sur#f#h#v#v#p#s#ð#p#h#q#w#g#e | #ð#h#q#h#u#d#c#ð#d#f#w#l#f#ð#ð#l#q#d#w#v#e#d#q#n#v#f#r#w#v#r#f#l#d#w#g#z#lk#w#d#q#ge | #ðwuhuv# i#fuhg lw#e#l#q#j#v#d#n#l#j#z#k#d#w#z#d#v#r#q#f#h#ð#y#h#u#l#s#d#s#h#u#l#q#w#g#v#y#h#sur#f#h#v#v#ð#gg#p#d#n#l#j#v#w#f#r#p#s#ð#w#h#q#z#h#e#ð#e#d#v#h#g#v#l#v#h#q#y#l#r#q#p#h#q#w#d#ð#i#l#h#q#g#ð#v#v#l#v#f#r#w#h#g#x#f#l#j#i#i#q#h#r#r#n#v#ð#w#k#h#q#x#p#e#h#i#e#d#q#n#v#r#x#q#g#k#h#z#r#u#g#z#k#r#h#u#y#l#f#h#h#q#h#u#d#c#ð#d#f#w#l#f#w#k#u#r#x#j#k#k#h#DOR#F#v#|w#p#v#k#h#f#r#w#v#d#y#l#j#v#ð#gg#k#h#ð#p#l#q#d#w#r#q#i#s#d#s#h#u#l#k#h#q#x#p#e#h#u#v#p#x#w#e#h#w#d#j#j#h#u#l#j#j#ð#q#h#q#y#l#r#q#p#h#q#w#d#ð#i#l#h#q#g#ð#sur#f#h#v#v#z#k#l#f#k#h#u#ng#x#f#h#v#f#r#w#v#q#r#z#k#k#d#w#s#p#d#j#l#q#d#w#r#q#ð#w#z#run#

Mrkq#p#f#D#w#k#x#u#
Y#l#f#h#s#h#v#l#q#h#q#w#v#u#d#h#h# #x#s#s#ð#f#k#d#l#q#k#K#V#E#F#E#D#Q#N#K#V#D#A#D#1



T#x#r#w#h#v#h#u#r#p#e#x#v#l#q#h#v#v#h#v#h#l#q#g#e#d#q#n#h#u#v



imagination at work