# sExtensionPo rtf or1 108withEx tend edProce ssor Option(C PE)Initia llyrel eased

:

17Sept1984MichaelHer ringA user
-design eddevice

## c

anbeattachedtoa n1108with Ex tendedPr oc es sorO ptio n(CPE)th roughthes amecon necto rthatXe rox ’sPC -busandMultib usadapt ersuse .Th isdocume ntdescri best hepr otocolfo rthisconn ect or,andba sic Inte rlisp-Dfun cti onsfo raccessingi t.TheBusExte nder(BX)conn

ect ora llowsthe Dand yTigertor ead&/orwr ite16-bitw or dsat anyo f32re gister -addr es ses on th eexternaldevice.Fo ur 1-b itstatus linesca nals oberead.Aninterr upt line is reser ve dforusewithfu ture microc ode.Th emaximumda tatransfer

rat ewhenth edev iceisacc esse dfro mtheInter li sp-Dfunc tions bel owis150Kwo rds/secon d.Bur st tran sferratesof2M words/secondcanbeach ie vedwithspeci ali ze dmicroco de.T heBXconnec toristheDan

dyT ig erCPEboar d’slo werD-37con nec torJ1(f emale ).It isnotcabl ed totheouts id eofth e1108. Descr iptiono fs ign alson

## connectorBX0.- 15Data.Bi direction

| | |
|---|---|
| a<br>l.BX.15 | least significant.SU A.4-7 Addr ss(withfY.1) |
| .SUA.7l | eastsig nific ant.fY .0Dir ectio n.1=fromdevi |
| ceto | processor. fY .1Ad dress( withSUA.4-7) |
| .fY. | 2-3Devi cesel ect(withS |
| elFP’) | .SelFP ’Devicesele ct(withf |
| Y.2-3) | .Activ elow.FPCLKClock.Nor mallyh igh( |
| 98msm | in),39 nslow,ri sing edgea ctive .A lw aysh ighwhenSel FP’=1.FPI.0-3 Stat usli nes.Async |
| hronous | inputt oprocessor.Interru pt’In te rrupt.Asyn |
| chronousin | puttoproce ssor.Activel ow.Thec urrentmicr ocodev ersi ond oesnots upportthi sextern alin ter rupt,so Inte rrupt’mu stnotbeass er ted(pulled *down).S* ig nalsareT TLactiv ehighe |

xceptas sta ted .Since thes earehi gh-speedi ntra- proce sso rbussignal s,thecablemustb esh ort,e.g. 2fe et.Th eext er nalBXdevice issel

ect edwhenfY2 =fY.3=SelFP’=0.Writi ngtotheregisterwith

address SUA.4-7=fY.1=0mustnothav eanysignifican teff ect .Suc hwr itesaregene ratedby thec entral pro cessorasa si dee ffectof otheroper at i ons. Withspec ialca bling,theus

erde vicecouldsharet heBXcon nector withXerox’ sPC-b usorMulti busa dapters .Thent he register -addresse swit hSUA.4-7=2and3arereserved fortheX e r oxb u sad apters,a sis the statu sli neFPI.1.Timin gre quirements ontheB

Xdevic ewillbeinclu de din la terver sion so fthisdoc umentat ion.Thewri te-t o-devicecyclei sst raightforward.T heDandyTigermicrocodeassum esthatread sfromtheB Xdevice arep ipeli nedo ver tw oBXcyc les ;thatis,t hatt hed at umretur nedfromtheBXdeviced uringare adcy cle is thatad dresse d inth eprev io usBXcycle.

Pio
2

w
**erD-37co**nnetor J1 (fe male).1 SUA.711FP I.221BX.1 431BX.52SUA.6
2

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| F | PI.12 | 2B | X.133 | 2B | X.43S | UA | .513 |
| F | PI.02 | 3B | X.123 | 3B | X.34S | UA | .414 |
| 5 | volt( | 1a | mp)24 | BX | .1134 | BX | .25f |
| Y | .3155 | vo | lt(1a mp)25B | X. | 1035B | X. | 16fY |
| . | 216F | PC | LK26BX. 936B | X. | 07fY. | 11 | 7GND |
| 2 | 7BX. | 83 | 7GND8 | fY | .018 | GN | D28S |
| e | lFP’ | 9I | nte | rr | upt’ | 19 | GND |
| 2 | 9BX. | 71 | 0FP | I. | 320BX. | | |
| 1 | 530BX.6(Th | ep | inn | um | bers | | |
| on | page3 | 8o | ftheC | PE | -FPs | | |

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**integer,takenasthe**
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iv *ebitsSU* A.4, .. ,S UA.7,fY1(lea st sig nifi cant).(BX.INPUTaddress) readsa16-bitdatumfr

omtheaddre ss,*retur* ningit a sanint eger. (BX. OUT*PUTdatum*address)w ri te st heleasts ignificant1 6*bitso fdatumto*theaddres s.(BXREADSTAT)FUSur ns *thefo* ur sta *tusbits* F PI.0,..,FPI.3(l eastsigni fic ant) asanintege r.NotethatBX.READSTATUSaccessesthe Pa rallelPo
rt.