



Meridian II *IRU*

Rtgekukqp"Vko gDcug"Wugt"Ocpwcn

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Standard Features

*Rcpgn"Flurnc{"cpf" Mg{rcf."Ejcrvgt"5"/"Eqpvtqn"cpf"Uvcvwu"Eqo o cpfu." Ejcrvgt"35"/"Htqpv/
Ejcrvgt"9"/"PVR*

Secure Network Interface

Ejcrvgt"4"/"Dcuke"Kpuvcncvkap

/"UPOR Ejcrvgt"7

Ejcrvgt"8"

Where to Use It

Client / Slave Software

Meridian II Physical
Description

Ej crvgt"32"/"Tgct/Rcpgn"KlQ
Crrgpfkz"M"/"Urgekkecvkqpu

†

dqvpqutdpogjh

Ejcrvgt"32"/"Tgct/Rcpgn"klQ Crrgpfkz"M"/"Urgekhhkecvkqpu0

Ejcrvgt"32"/"Tgct/Rcpgn"klQ

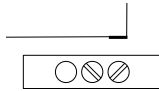
**Qrvkqpu+" " "*

Ejcrvgt"32"/"Tgct/Rcpgn"klQ

Ejcrvgt"32"/"Tgct/Rcpgn"klQ" Crrgpfkz"M"/"Urgekhhkecvkqpu

**Qrvkqp+*

Ejcrvgt"32"/"Tgct/Rcpgn"klQ Crrgpfkz"M"/"Urgekhhkecvkqpu0



++++
+!7121.1177.111!Mjovy!Cpumpbefs!w2/11!Kbo!!2!3124!32;35;27!+
++++

Efgbvmu!lfsofm;!GBDUPSZ

UpQwZsGtHkE!CpmpuFlDQhSfRv!GtJp)1# &' XGTU#KQSKFG B@n %`p0-ð@ 72vG T@ ð G...0MP 'cð

ufmofu tti

Using netconfig to Set Up Your IP

NOTE

NOTE
ofudpogjh

ofudpogjh

+++++
+++++!Nfsjejbo!JJ!HQT!JQW50JQW7!Ofuxpsl!Dpogjhvsbu!jpo!+++++
+++++
+!!!Uijt!tdsjqu!xjmm!dpogjhvsf!uif!UDQ0JQW50JQW7!ofuxpsl!qbsbnfufst!gps!zpv!+
+!!!Nfsjejbo!JJ!HQT/!!Xf!xjmm!gjstu!dpogjhvsf!JQW5!boe!uifo!JQW7/!!Zpvs!+
+!!!Nfsjejbo!JJ!HQT!ibt!uxp!Fui!fsofu!joufsgbdf!-!dbmmfe!fui1!boe!fui2/!!Gps!+
+!!!fbdi!pg!JQW5!boe!JQW7-!xf!xjmm!gjstu!dpogjhvsf!fui1!boe!uifo!fui2/!+
+!!!Zpv!dbo!dipptf!up!lffq!uif!fyjtu!joh!dpogjhvsbu!jpo!pg!fjuifs!joufsgbdf!boe!+
+!!!sfdpogjhvsf!uif!pui!fs/!!Zpv!dbo!bmt!p!dipptf!up!vodpogjhvsf!fjuifs!pg!+
+!!!uif!uxp!joufsgbdf!jg!cpui!bsf!opu!offefe!jo!zpv!bqqm!jdbu!jpo/!+
+!!!Zpv!xjmm!cf!bcmf!up!sfdpogjhvsf!zpv!tztufn!bu!boz!ujnf!cz!uzq!joh;+
+!!!ofudpogjh!+
+!!!Uif!tfuujoh!t!zpv!nblf!opx!xjmm!opu!ublf!fgg!fdu!voujm!zpv!sfcppu!zpv!+
+!!!Nfsjejbo!JJ!HQT-!tp!jg!zpv!nblf!b!njtublf!-!kvtu!sf.svo!uijt!tdsjqu!cf!gps!+
+!!!sfcppujoh/!+
+!!!Zpv!xjmm!cf!qspnqu

Using Telnet

ufmofu

tqv

ufmofu

+++++
+!!!!!!Xfmdpnf!up!Nfsjejb!JJ!HQT!ufmofu!dpotpmf!po;!!iptu/zpvs/epnbjo
+++++

iptu!mphjo;

Qbttxpse;

Nfsjejb!JJ!HQT!7121.1178.111!w!2/11!Tbu!Kbo!2:!25;28;55!VUD!3124
Nfsjejb!JJ!HQT!)sppuANfsjejb!JJ;!*.*?

!qbttxe

tqv

Nfsjejb!JJ!HQT)sppuANfsjejb!JJ;!*.*?!tv!sppu

tqv

fyju

fyju

ufmofu

Using SSH

tqi

tqv

tqv tqi

+++++
+!!Xfmdpnf!up!uif!Nfsjejb!JJ!HQT!TTI!dpotpmf!po;!!iptu/zpvs/epnbjo
+++++

sppuAN2:3/279/2/231 t!qbttxpse;

qbttxe

fyju

Ejcrvgt"32"/"Tgct/Rcpgn"KlQ" Crrgpfkz"M"/"Urgekhkecvkqpu

Available User Commands

EQOOCPF	HWPEVKQP
	<code>ufmofu.tti tonqe</code> <i>lgveljqwu0ck</i>

<i>*qrvkqpcn+</i>	<i>Ejcrvgt";/"RVRI</i> <i>KGGG/37::</i>
<i>*qrvkqpcn+</i>	<i>Ejcrvgt";/"RVRIKGGG/37::</i>
<i>*qrvkqpcn+</i>	<i>Ejcrvgt"32"/"Tgct/Rcpgn"KIQ."</i> <i>Rqygt"Uwrrn{"Qrvkqpu</i>
	<i>Crrgpfkz"L"/"Qrgtcvkqp"</i> <i>ykvj"c"IRU"Uk o wncvqt</i>
	<i>Crrgpfkz"L"/"Qrgtcvkqp"</i> <i>ykvj"c"IRU"Uk o wncvqt</i>
<i>*qrvkqpcn+</i>	<i>Ejcrvgt"33"/"Tgen/Vkog"Kppqurjgtke"Eqttgevkqpu</i>
	<i>bougmunbt1</i>
	<i>dbmefmbz</i>
	<i>hqtezonpef</i>
	<i>hqtsfgqpt</i>
	<i>joi jcupvuqvutnpef</i>
<i>*qrvkqpcn+</i>	<i>Ejcrvgt"32"/"Tgct/Rcpgn"KIQ."Rqygt"Uwrrn{"</i> <i>Qrvkqpu</i>
<i>*qrvkqpcn+</i>	<i>Ejcrvgt"33"/"Tgen/Vkog"Kppqurjgtke"Eqttgevkqpu</i>
	<i>tjhgmunbt1</i>
	<i>tfutjhgmunbt1</i>

	tztujfnpefdpogjh
	tztujfnpef
*grvkpcn+	<i>Ejcrvgt"32"</i> <i>/"Tgct/Rcpgn"KlQ."Rtqitc o o cdng"Rwnug"Qwvrvv"*RRQ+"Qrvkqp</i>
	mpdlpvulq lqmpdltubu

	<i>Crrgpfkz"K"/"Uqhw/</i>
	<i>yctg"Qrvkqpu</i>

Detailed Command Descriptions

accessconfig

```

ufmofu tti    tonq
                ufmofu tti    tonq
                                ufmofu    tti

                lgveljqvu0cmqy    lgveljqvu0fgp{
ldqqvlgve

                bddfttdpogjh
    
```

antfltmask

```

bougmunbt1
Boufoob!Gbvmu!jt!FOBCMFE
    
```

caldelay

```

Cpygppc."Ecnkdtcyg"[qwt"Tgegkxgt
                                Crrgpfkz"G"/"Kpuvcnkp i"vjg"IRU"

                dbmefmbz
                ,1!oboptfdpoet
    
```

clearalmanac

```

ncvqt"
                                Crrgpfkz"L"/"Qrgtcvkqp"ykvj"c"IRU"Ukow/
    
```

cpuio

```

Rcpgn"KlQ."Uvcpctf"KlQ"    ERW"Oqfwng"Qrvkqpu"
                                Ejcrvgt"32"/"Tgct/
    
```



```

+++++!Xffl!29:1!bmnobd!gps!QSO.12!+++++
JE;!!!!!!!!!!!!!!!!!!!!!!!!!!!!12
Ifbmu;!!!!!!!!!!!!!!!!!!!!!!!!!!!!111
Fddfousjdzuz;!!!!!!!!!!!!!!!!!!!!6/328185993f.14
Ujnf!pg!Bqqmjdbcmjuz)t*;!!!6/149191111f,16
Pscjubm!Jodmjobujpo)sbe*;!!!:/748:28987f.12
Sbuf!pg!Sjhiu!Btdfo)s0t*;!!8/9399:9529f.1:
TRSU)B*!!)n!203*;!!!!!!!!!!!!6/264714138f,14
Sjhiu!Btdfo!bu!Xffl)sbe*;!!2/269877:96f,11
Bshvnfou!pg!Qfsjhff)sbe*;!!5/626141197f.12
Nfbo!Bopn)sbe*;!!!!!!!!!!!!.3/196791:73f,11
Bg1)t*;!!!!!!!!!!!!!!!!!!!!!!!!!!!!,2/732356:85f.16
Bg2)t0t*;!!!!!!!!!!!!!!!!!!!!!!!!!!!!,1/11111111f,11
xffl;!!!!!!!!!!!!!!!!!!!!!!!!!!!!2/9:1111111f,14

```

dumpephemeris

evnqfqifnfsjt

```

H12!3127!14!41!31!11!11!1!,2/69854:43954f.16!,2/24797948833f.23!,1/1111111111f,11
!!!!,9/1111111111f,12!.2/24548611111f,12!,5/41557612364f.1:!.3/239:4863178f,11
!!!!.6/:1569623417f.18!,6/3187:559596f.14!,9/89:93356:33f.17!,6/26475933:71f,14
!!!!,4/4231111111f,16!.2/3776:981259f.18!.2/26849:21244f,11!.6/698:465587:f.1:
!!!!,:/74899279614f.12!,3/23954861111f,13!,5/61975148551f.12!.8/931436858:7f.1:
!!!!,4/38624753369f.21!,2/1111111111f,11!,2/9:111111111f,14!,1/1111111111f,11
!!!!,3/1111111111f,11!,1/1111111111f,11!,6/2333852714:f.1:!,9/1111111111f,12
!!!!,4/3536911111f,16!,5/1111111111f,11!,1/1111111111f,11!,1/1111111111f,11

```

faultstat

Crrgpfkz" I"/"U{wgo "Hcwnvu

gbvmutubu

```

Tztufn!Gbvmu!Tubvut;
!!!      !      !!Tztufn!Ptdjmmbups!EBD.....?!PL
! !      !      !!HQT!Tjhobm.....?!PL
! !      !      !!HQT!Tvctztufn!GQHB!Dpogjhvsbujpo.....?!PL
! !      !      !!HQT!Tvctzufn!GMBTI!Xsjuft.....?!PL
! !      !      !!HQT!Sfdfjwfs!Dpnnvojdbujpo.....?!PL
! !      !      !!HQT!Sfgfsfodf!Ujnf.....?!PL
! !      !      !!Tvctztufn!Dpnnvojdbujpo.....?!PL
! !      !      !!HQT!Sfdfjwfs.....?!+GBVMU+
! !      !      !!Tztufn!Ptdjmmbups!QMM.....?!PL
! !      !      !!HQT!Boufoob.....?!+GBVMU+
! !      !      !!Qmvh.Jo!Pqujpot.....?!PL
! !      !      !!Tztufn!Qpxfs0Dpogjhvsbujpo.....?!PL

! !      !      HQT!Sfdfjwfs!Gbvmu!Tubvut;
! !      !      !!HQT!Sfdfjwfs!Ptdjmmbups!EBD.....?!PL
! !      !      !!HQT!Tjhobm.....?!PL
! !      !      !!HQT!Sfdfjwfs!GQHB!Dpogjhvsbujpo.....?!PL
! !      !      !!HQT!Sfdfjwfs!GMBTI!Xsjuft.....?!PL

```


gpslastfix

tfuhqtsfgqpt

hqtmbtugjy

MBTU!QPTJUJPO!GJY!>!O49e35n65/44t!X233e56n21/::t!,11114/6!nfufst!

hqtusltubu

```
Di!TW!B{jnvui!!!Fmfw!D0Op
! ! ! !2!34!.219/52!,26/81!52/8
! ! ! !3!22!.229/32!,56/69!57/:
! ! ! !4!33!,218/52!,32/15!48/:
! ! ! !5!25!!,63/21!,3:/87!51/5
! ! ! !6!43!!.51/47!,69/29!56/3
! ! ! !7!12!!.8:/25!,66/64!57/7
! ! ! !8!42!,238/98!,73/71!58/4
! ! ! !9!11!!!,1/11!!!,1/11!!!1/1
! ! ! !:!!!1!!!,1/11!!!,1/11!!!1/1
! ! ! !21!!!1!!!,1/11!!!,1/11!!!1/1
! ! ! !22!!!1!!!,1/11!!!,1/11!!!1/1
! ! ! !23!!!1!!!,1/11!!!,1/11!!!1/1
```

gpsutcinfo

kplockstat

```
mpdlpvulq  vompdllq
            lqmpdltubu
            Lfzqbe!jt!VOMPDLFE
```

lockoutkp

```
vompdllq!                                     lqmpdltubu
                                                mpdlpvulq
                                                Lfzqbe!jt!MPDLFE
```

logrinex

ljqogltkpgzltkpgz0nqi

pluginoptsconfig

Ejcrvgt"32"/"Tgct/Rcpn"KlQ."Rnwi/Kp"Oqfwng"Qrvkqpu

qmvhjopqutdpogjh

ptpconfig0 and ptpconfig1 (Optional)

Ejcrvgt";"/"RVRIKGGG/37:."

ptpstat0 and ptpstat1 (Optional)

Ejcrvgt";"/"RVRIKGGG/37:."

pwrfltmask (Optional)

Ejcrvgt"32"/"Tgct/Rcpn"KlQ."Ocumpi"Fwcn"Rqygt"Uwrrn{"Hcwv"Cictou

rcvrserialnumber

sdwstfsjbmovncfs

26191167

rcvrstat

sdwstubu

31261733/34;46;61!9!236!56/1

rcvrversion

sdswfstjpo

G0X!7121.1192.111!wfs!2/11!.!GQHB!7131.1125.111!wfs!12!.!NBS!35!26;16;47!3126

setsigfltmask

sysosctype

tztptduzqf
Jotubmmfe!Ptdjmmbups!jt!UDYP/

sysrootfs

tztspugt
CPPUFE!SPPU!GJMF!TztUFN!JNBHF!>!2!)Vqhsbef*

sysstat

lxctlnqilrtceku2loqpkvqt

! MLTUBU!UP!HQT-!Pggtfu!>!,T/tttttttttt-!MJ!>!@-!UGPN!>!@!A!ZFBS!EPZ!II;NN;TT!MT

tztujfnpef

```
Ujnf!Npef!>!MPDBM
! Mpdbm!Ujnf![pof!Pggtfu!gspn!VUD! )Epft!Opu!Jodmvef!ETU*!>!.27!)ibmg!ipvst*
! ETU!Tubsu!Npoui!>!Nbs!Tvoebz!>!3oe!!Ips!>!3
```


vqhsbefsdws

upgradercvrfpga

lvorltexthricldkp

Crrgpfkz

D"/"Writcfkpi"vjg"Hkto yctg."Rgthqokpi"vjg"IRU"Tgegkxgt"HRIC"Writcfg

vqhsbefsdwsgqhb

upgraderootfs

tqqvhu0i/

lvor

"lvorltqqvhu0i/

GrSgHtQ"GWritcfkpi"vjg"STU/ VPXdGtd

yctg."Rgthqokpi"vjg"Nkpwz"THU"Writcfg

vqhsbefspugt

0HULGLDQ,V \RX WR\ 6KRZV h, UHQ VPXdRU

upgradesubsys

lvorluwdufu0dkp



HTTPS Interface
Description

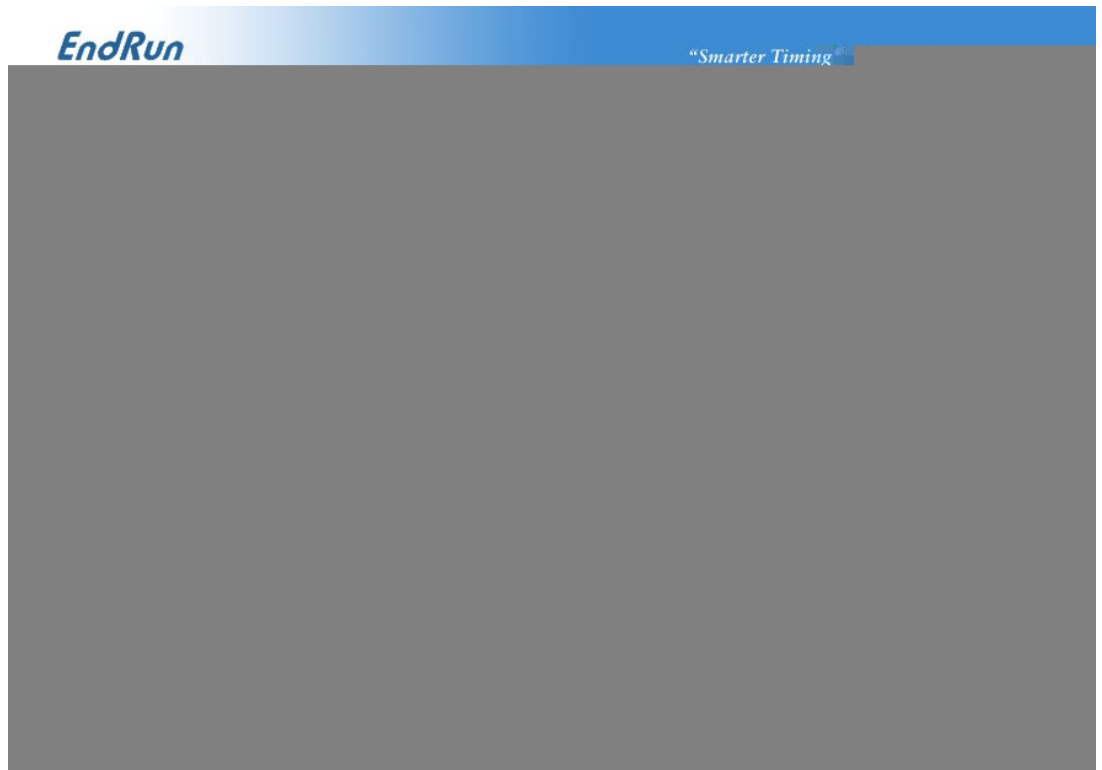
NOTE

Ejcrvgt"7"/"Ugewtkv{."JVVRU"

EndRun

"Smarter Timing"

Navigation



Page Descriptions

Home: Overall Status Page

Plots Page

Receiver: Receiver Page

Crrgpfkz"C"/"VHQO

" " " *kpuvcnkp i"vjg"IRU"Cpvppc."Cdqwv"YIU/:6* *Crrgpfkz"F"/"*

tfuhqtsfgqpt

Ejcrvgt"32"/"Tgct"Rcpgn"klQ."Ocunmpi"Fwcn"Rqygt"
" *Uwrrn{"Hcwnv"Cnctou*

Faults: TFOM Fault Level Page

Ogtkv

Crrgpfkz"C"/"Vkog"Hkiwtg"qh"
tfuugpngmumwm

Faults: Receiver Faults Page

Crrgpfkz"I"/"Ufwgo"Hcwnvu

Network: IPv4 Page

ofudpogjh

ofudpogjh

Network: IPv6 Page

Ejcrvgt":"/"kRx8"Kphqtocvkqp

Network: DNS Page

Network: MAC Address Page

fui1 fui2

NTP Page

PTP: Status and Configuration Pages (Optional)

37::

"Ejcrvgt"6"/"RVRlkGGG/

Firmware: Firmware Status Page

Firmware: Linux RFS Upgrade Page

yctg

Crrgpfkz"D"/"Writcfkpi"Vjg"Hkto/

Firmware: Linux Kernel Upgrade

- `tqqv`
- `tdq`
- `Ceeguu"/JVVRU Fkucdng"UPOR"UUJ"cpf"JVVRU Tgwtkev"`
- `Ceeguu"/Vgnpgv."UUJ"cpf"UPOR" Fkucdng"UPOR"UUJ"cpf"JVVRU Ejcrygt"8"/"UPOR" "Tgwtkev"`
- `jo/ufmofue- tonqe ttie lgveljqvu0cmqy lgveljqvu0fgp{ ! !bddfttdpogjh/! Tgwtkev"Ceeguu"/Vgnpgv."UUJ"cpf"UPOR`
- `jofue jofuedpogjh Fkucdng"Vgnpgv."Vkog" cpf"Fc{vkog`

Restrict Access

Restrict Access - Telnet, SSH and SNMP

```

bddfttdpogjh
bddfttdpogjh          lgveljqvu0cmqy  lgveljqvu0fgp{          udqe
                      tonqe      ttie
                                jo/ufmofue. ttie      tonqe
                                bddfttdpogjh
                                lgveljqvu0fgp{
jo/ufmofue;!!BMM
ttie;!!BMM
tonqe;!!BMM

```


udqe jo/ufmofue-!ttie tonqe lgvel
jqvu0cmqy tonqe ttie
jo/ufmofue."ttie
tonqe lgveljqvu0cmqy
jo/ufmofue;!!2:3/279/2/3-!2:3/279/2/4
ttie;!!2:3/279/2/3-!2:3/279/2/4
tonqe;!!2:3/279/2/3-!2:3/m79/2/4

ldqqvlgve Crrgpfkz"E"/"Jgnrhwn"Nkpwz"Kphqto cvkqp."Wukpi"Gfkvqtu
dq!.q

Restrict Access - HTTPS

lgveljvwrfljvwrfl0eqph

=Ejsfdupsz! tsw0iuuqe0dhj.cjo ?
! BmmpxPwfssjef!Opof
! Pqujpot!Opof
! Sfrvjsf!bmm!hsboufe
=0Ejsfdupsz?

=Ejsfdupsz! tsw0iuuqe0dhj.cjo ?
! BmmpxPwfssjef!Opof
! Pqujpot!Opof
! Sfrvjsf!jq!yyy/yyy/yyy/yyy
\$! Sfrvjsf!bmm!hsboufe
=0Ejsfdupsz?

dq!.q!0fud0iuuqe0iuuqe/dpog!0cppu0fud0iuuqe!
sfcppu

Restrict Query Access - NTP

Is the Protocol Disabled?

gjh

jofuedpo.

mt!.m!0cppu0fud0sd/e

.sx.s..s..!2!sppu!sppu!2255!Gfc!2:!12;63!sd/iuuqe
.sx.s..s..!2!sppu!sppu!2279!Pdu!37!3123!!sd/tonqe
.sx.s..s..!2!sppu!sppu!3795!Gfc!29!13;27!sd/ttie

.sxs.y.s.y!2!sppu!sppu!2279!Pdu!37!3123!!sd/tonqe+

OpenSSH

" UJJ."Vjg"Ugewtg"Ujgm

Fkucdng"UPOR"UUJ"cpf"JVVRU
Tgwtkev"Ceegu"/"Vgppg."UUJ"cpf"UPOR

Configure Keys

lgvelte

O

de!0cppu0fud0iuuqe
pqfottm!sfr!.ofx!.y61:!.opeft!.pvu!tfswws/dsu!.lfzpvu!tfswws/lfz

ldqqvlgveljvrf

" *Rtqhgaukqpcn"Crcejg*

NTP

Rncvht ou<"OF7"Cwvjgpkcevgf"PVR"Enkgn"Ugvwr *Ejcrvgt"9"/"PVR"Wpkz/nkng"*
ecvgf"PVR"Enkgn"Ugvwr *Ejcrvgt"9"/"PVR"Ykpfqyu<"OF7"Cwvjgpk/*
Tgwtkev"Swgt{"Ceegu"/"PVR

Enterprise Management Information Base (MIB)

lwutlnqecnlujctgluporl okdulOGTKFKCP4/OKD0vzv
lwutlnqecnlujctgluporl okdulOGTKFKCP44W/OKD0vzv

-
-
-
-

Invocation of the SNMP daemon

uporf

lgvelte0flte0uporf

Change Default Community Strings (Passwords)

lgveluporf0eqph

```
sxdpnnvojuz!!foesvo`2
spdpnnvojuz!!Nfsjejbo3
```

Configuring SNMPv1 Trap Generation

lgveluporf0eqph

```
usbqtjol!!!!yy/yy/yy/yy!usbqdpnnvojuz!usbqqpsu
```

```
usbqdpnnvojuz
```

```
yy/yy/yy/yy
```

```
usbqqpsu
```

```
usbqtjol
```

```
"lgveluporf0eqph"
```

```
usbqtjol"
```

Configuring SNMPv2c Notifications and Informs

lgveluporf0eqph

```
usbq3tjol!!!!yy/yy/yy/yy!usbq3dpnnvojuz!usbq3qpsu!!
jogpsntjol!!!!yy/yy/yy/yy!jogpsndpnnvojuz!jogpsnqpsu
```

```
usbq3dpnnvojuz jogpsndpnnvojuz
yy/yy/yy/yy
```

```
usbq3qpsuÁ Ájogpsnqpsu
```

```
tonqe
```

```
usbq3tjol jogpsntjol
```

lgveluporf0eqph

Ogtkfkcp4

Ogtkfkcp4a2

okpkowo

IMPORTANT

tonqe

tonqe

!0fud0sd/e0sd/tonqe!tupq

tonqe

!qt!.f

ldqqvlpqv/upo rlupo rf0eqph
dsfbufVtfs
vtnVtfs

IMPORTANT

!tonqe!

!vtnVtfs!

!dsfbufVtfs!

lgvelupo rf0eqph

Configuring SNMPv3 Notifications and Informs

Eqphkiwtcvkqp"qh"UPORx5

usbq3tj01 jogpsntj01 lgvelupo rf0eqph
tonqusbq

ldqqvlpqv/upo rlupo rf0eqph

tonqusbq

NETWORK TIME PROTOCOL (NTP)

Foufs!uif!lfz!)2.42!BTDJJ!dibsbdufst*!!

Unix-like Platforms: Basic NTP Client Setup

Configure NTP

pvr0eqph

ouqe

lgve

tfswfs!2:3/279/2/231

ouqe

pvr0eqph

ouqe

ouqr

ouqe

ouqr

ouqr

ouqr?

qffst

JXQLQJ 17pHC°€ À Op...PO'€ • à 0 € 0@€đ €P•'PpÀ€ Cđ €p

bttdjbuipot

lgvlpvr0mgfu

!guq tda
"lgvlpvr0eqph

Setting Up NTP Clients on Windows

Eqphkiwtki"vjg"PVUgtxgt

eqo r0rtqvqeqnu0vk o g0pvr

Windows: W32Time

x43un/fyF

NTP

ouqe

lgvelprleqph

ldqq!gve

joufsgbdf

joufsgbdf!jhopsf!jqw7

joufsgbdf

IPv4-Only Protocols

guq eidqde

ufmofu guq

ufmofu

Two Gigabit Ports

`quqdpogjhy`

`fui1*`

`fui2*`

`quqtubuy!`

	Fcg o qp	Uvcwu	EqpŁiwtkqp
	quqe1 quqe2	quqtubu1 quqtubu2	quqdpogjh1 quqdpogjh2

`fui1`

`fui1`

`fui2`

`quqtubu1`

`quqdpogjh1`

`fui1`

`fui2`

PTP Configuration
and Status

```
jotubmmfe`tx`pqut
Uif!QUQ1!Ebfnpo!Pqujpo!jt!Jotubmmfe/!
! ! ! Uif!QUQ2!Ebfnpo!Pqujpo!jt!Jotubmmfe/
Crrgpfkz"K"/"Uqhvyctg"Qrvkqpu
```

Default PTP Configuration Settings

PTP Configuration and Status Using the Keypad / Display

PTP Configuration Using the Network or Serial Port

`quqdpogjh1 quqdpogjh2`

`lgvelrvr20eqph fui1 lgvelrvr30eqph fui2`

```

+++++
+++++
...QUQ!Tzod!Joufswbm!Dpogjhvsbujpo
Tfu!uif!QUQ!Tzod!Joufswbm!jo!qbdlfut!qfs!tfdpoe!)2-!3-!5-!9-!27-!43-!75-!239*!2
...QUQ!boopvodf!joufswbm!Dpogjhvsbujpo
Tfu!uif!QUQ!Boopvodf!Joufswbm!jo!tfdpoet!)2-!3-!5-!9-!27*!27
...QUQ!Qsjpsjuz2!Dpogjhvsbujpo
Tfu!uif!QUQ!Qsjpsjuz2!wbmvf!)1.366*!238
...QUQ!Qsjpsjuz3!Dpogjhvsbujpo
Tfu!uif!QUQ!Qsjpsjuz3!wbmvf!)1.366*!239
...QUQ!Efmzb!Nfdibojtn!F3F!ps!Q3Q
Tfu!uif!QUQ!Efmzb!Nfdibojtn!)F3F!ps!Q3Q*!Q3Q
...QUQ!Epnbjjo!Dpogjhvsbujpo
Tfu!uif!QUQ!Epnbjjo!wbmvf!)1.366*!1
...QUQ!Ujnf!Npef!Dpogjhvsbujpo
Tfu!uif!QUQ!Ujnf!Npef!)VUD!ps!QUQ*!QUQ
...QUQ!UUM!Dpogjhvsbujpo
Tfu!uif!QUQ!UUM!wbmvf!)2.366*!2
Tfu!uif!QUQ!Usbotnjttjpo!Npef!)Nvmujdbtu!ps!Izcsje*!Nvmujdbtu
+++++
+++++
+!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!+
+!!Uif!Qsfdjtjpo!Ujnf!Qspupdpm!JFFF.2699!W3!dpogjhvsbujpo!ibt!cffo!vqebufe/!!!+
+!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!+
+!!!!!!!!!!!!!!!!!!Qmfbtf!sf.cppu!opx!gps!uif!dibohft!up!ublf!fggfdu/!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!+
+!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!+
+++++
+++++
+++++

```

sfcppu

PTP Status Using the Network or Serial Port
 quqtubu1 quqtubu2

PTP Second

UTC Time

Multiport PTP

fui1 fui2 fui1

fui1 fui2 fui1 fui2

Disable the
PTP Protocol

Qrvkqp fui1

NOTE

Serial I/O Port

*Ejcrvgt"5"/"Eqpuqig"Rqtv"Eqvrtq"cpf"Uvcvwu"
Crrgpfkz"M"/"Urgekhhkecvkqpu."Ugtkcn"Rqtv"klQ*

1 PPS Output

Crrgpfkz"M"/"Urgekhhkecvkqpu."3"RRU"Qwv/

rww

View the 1 PPS Connector

*dqvjp
DQV!J0P!C!..!2!QQT!PVUQVU!jt!Jotubmmfe
!!! ! !Dvssfou!Tfuujoh!>!)Tff!tztufnjp!dpnnboe**

Change the 1 PPS Pulse Width

*tztufnjp
Tztufn!J0P!Tjhobm!2!QQT!PVUQVU!jt!Jotubmmfe
! ! !Dvssfou!Tfuujoh!>!2!Njmmjtdfpoet!Qvmtf!Xjeui

tztufnjpgdpogjh*

Programmable Pulse Output (PPO) Option

! ifmq!usjhfsqqp

Direct Digital Synthesizer (DDS) Option

Crrgpfkz "M"/"Urgekhecvkqpu."Qrvkqpcn" Fktgev" Fkikvcn" U{p}jguk/gt"
***FFU+"Qwvrvw"qp"ERW"Oqfwng**

View the DDS Connector

dqvjp
DQV!J0P!D! .!EJSFDU!EJHJUBM!TZOUIFTJ[FS!PVUQVU!jt!Jotubmmfe
! ! ! Dvssfou!Tfuujoh!>!)Tff!tztufnjp!dpnnboe*

Change the DDS Rate

tztufnjp
Tztufn!J0P!Tjhobm!EJSFDU!EJHJUBM!TZOUIFTJ[FS!PVUQVU!Jotubmmfe
! ! ! Dvssfou!Tfuujoh!>!1!I{

tztufnjpgdpogjh

10 MPPS Output Option

Crrgpfkz "M"/"Urgekhecvkqpu."Qrvkqpcn"32"ORRU"Qwvrvw"qp"ERW"Oqfwng

View the 10 MPPS Output Connector

dqvjp
DQV!JOP!D!..!21!NQQT!PVUQVU!jt!Jotubmmfe

Alarm Output Option

rgpfkz"I"/U{wgo"Hcwnvu

Cr/

"Crrgpfkz"M"/Urgekhhcevkqpu."Qrvkqpcn"Cict o"Qwrvwv"qp"ERW"Oqfwng

View the Alarm Output Connector

dqvjp
DQV!JOP!D!..!PQFO!DPMMFDUPS!BMBSN!PVUQVU!jt!Jotubmmfe

Serial Time Output Option

Oqfwng *Crrgpfkz"M"/Urgekhhcevkqpu."Qrvkqpcn"Ugtkcn"Vko g"Qwrvwv"qp"ERW"*

Truetime Format

EndRun Format

/"Eqpuqng"Rqtv"Eqpvtqn"cpf"Uvcvwu **tztujnfnpefdpogjh" "Ejcrvgt";"**

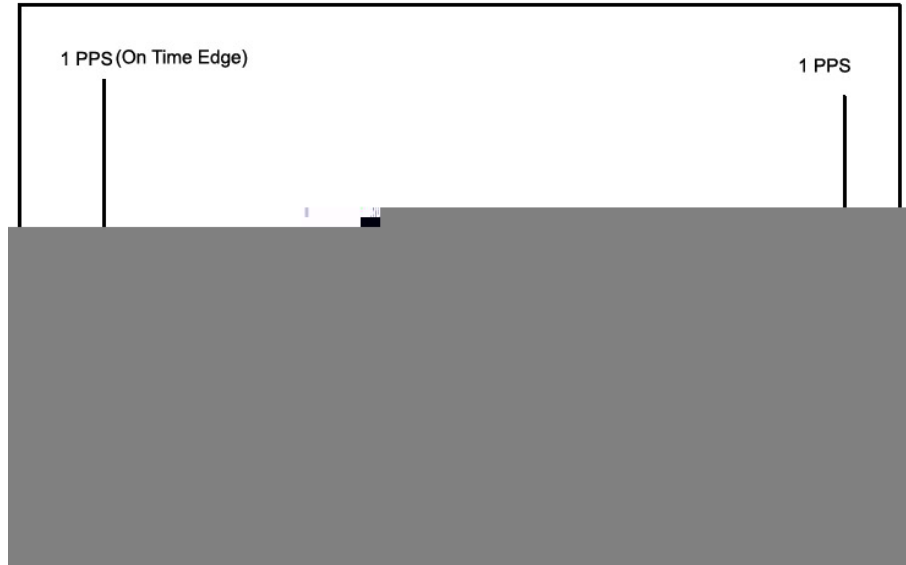
Crrgpfkz"C"/"VHQO

EndRunX (Extended) Format

PGPC3"

PGPC:

NMEA Format



1 PPS (On Time Edge)

1 PPS

TOE"*Tgeq o ogpfgf"Olpk o wo "UrgekLe" IRU"Fcvc+

* 3 '!cV` 0 @ 5hfH "2!h5hfA UH '!cV` P p { \$ ñ ^) 5a& 0 p p p€
1 ° @ Đ € 0 P € h 5h P p { \$ ñ ^ Ž P p @ "2!h / @ Q´ H O• p0 q

Plug-In Module Options

NOTE

qmvhjopqut

Digital Output Module

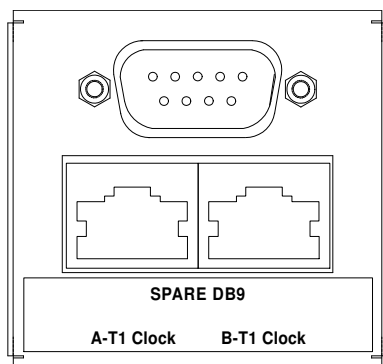
d s" S~P" S fIPBa BS• P €pB\$'s&x\$s6 S"D•€b\$% a #A& ,6•€Y6#1,,gVB7• b I V9 V " & Y,u• p CX –

vtqn ("Uvcrwu

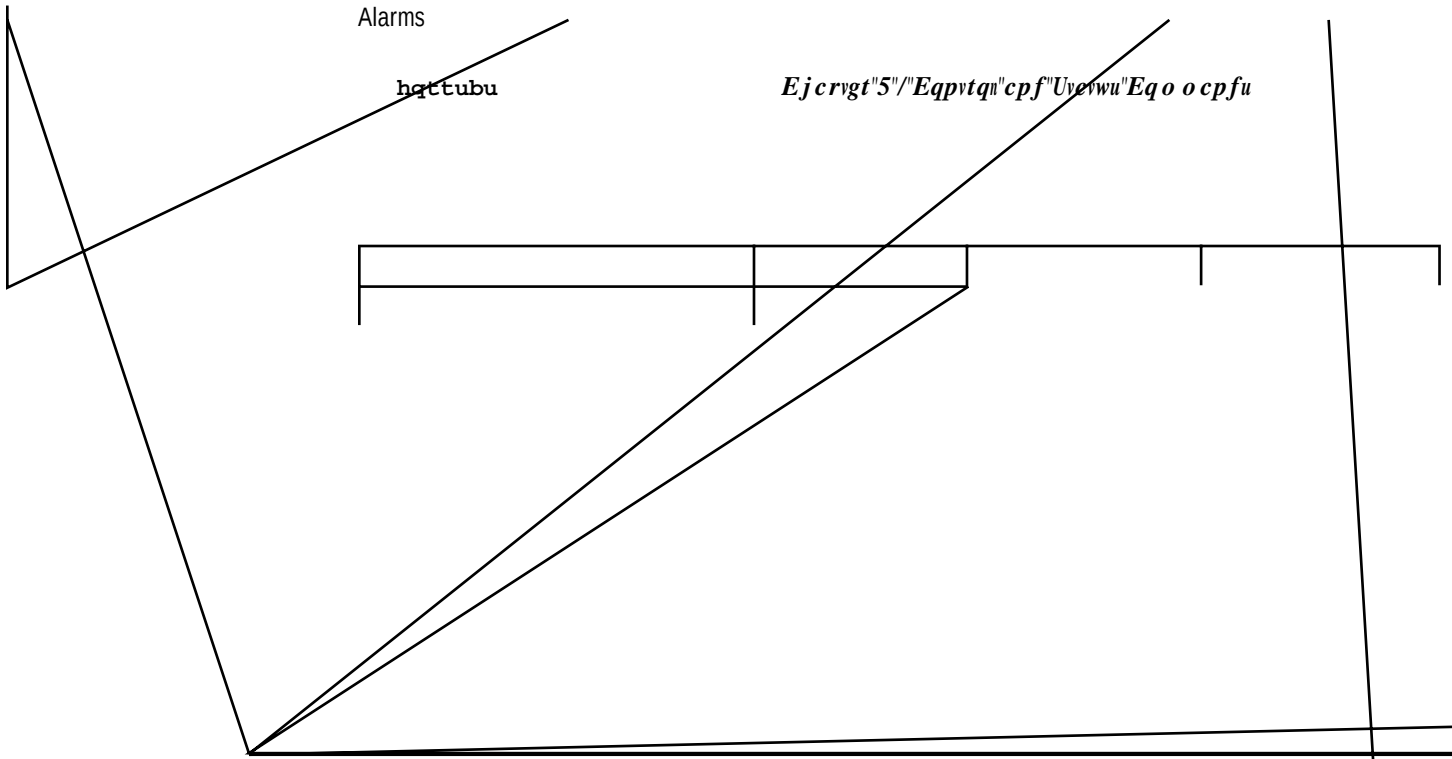
qmvhjopqut *Ejcrvgt"5"/"Eqpuqng"Rqtv"Eqp/*

Direct Digital Synthesizer (DDS) Sine Wave Module

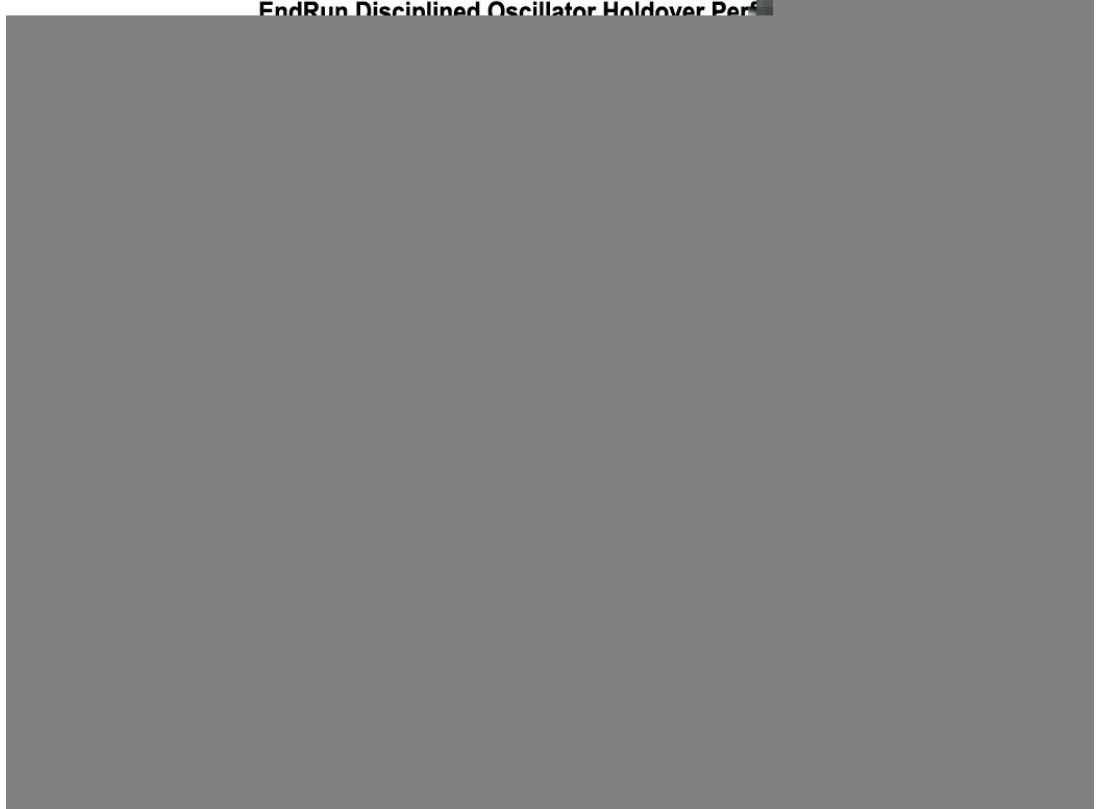
Ejcrvgt"35"/"Htqpv/Rcpgn" Mg{rcf1Fkurnc{ *tztufnjpdpo.*
gjh Ejcrvgt"5"/"Eqpuqng"Rqtv"Eqpvtn" ("Uvcvwu *Crrgpfkz"M"/"Urgekhhkecvkqpu."Qrvkqpcn"FFU"*
Ukpg"Ycxg"Oqfwng



User Settings



EndRun Disciplined Oscillator Holdover Perf



Connectors and Cables

RJ48C Pinouts

RJ48C CONNECTOR SI

5071A Cesium Control Module

u{wkwgoqfgeqphki

Ejcrvgt"5"/"Eqpvtqn"cpf"Uvcvww"Eqo o cpf u."u{wkwgoqfg

Theory of Operation

Operation

!!!!ST.343`DPNN`GBVMU

!!Uif!Rvftujpobcmf!Eubub!jt!bmtpl!tvnnbsj{fe!jo!b!27!cju!sfhjtufs-!pg!xijdi!
! pomz!4!cjut!bsf!vtfe!up!joejdbuf!uiftf!dpoejujpo;
!!!!UJNF!!!!!!!)ujnf.pg.ebz!dmpdl!jt!opu!tfu*
!!!!GSFRVFODZ!!!!)pvu.pg.mpd1*
!!!!QIBTF!!!!!!!)tqvsjpvt!cvstut*

!!Bmtpl!sfqpsufe!bsf!uif;
?!~~unifigzskufhpgsfjfofba!ou?~~

Power Supply Options

Performance Verified at National Institute of Standards and Technology (NIST)

setrticmode

sujdnpef

tfusujdnpef!PO

Sfbm.Ujnf!Jpoptqifsjd!Dpssfdujpot!Npef!jt!PO

RTIC Performance Plots Using the HTTP Interface



! dq!.q!0fud0sd/e0sd/tzodfe1!0cppu0fud0sd/e

sfcppu

tzodftubul

Re-Enable SyncE

fui1*

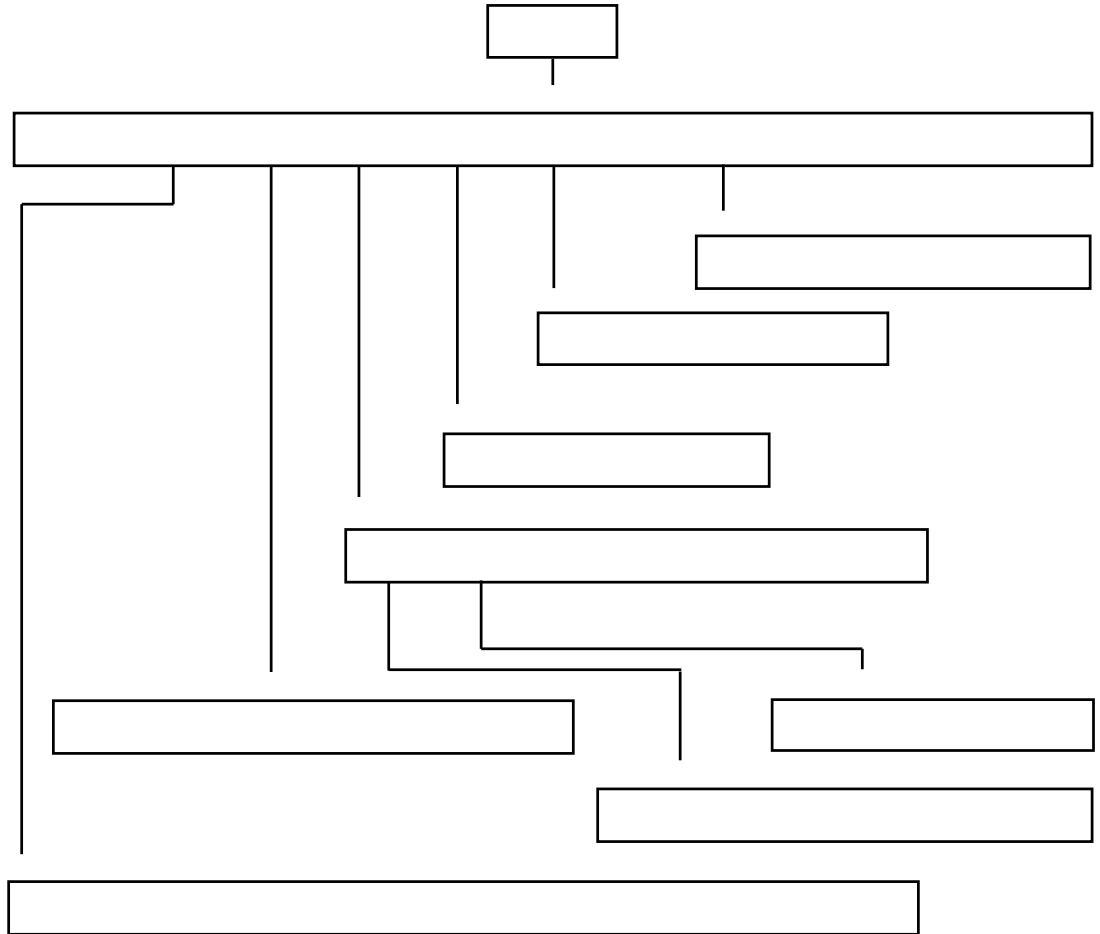
te0u{pegf2

ldqqv!gvelte0f

! sn!0cppu0fud0sd/e0sd/tzodfe1

! sfcppu

Display and Keypad Operation



Traversing the Display Structure

Editing

Keypad EDIT Lockout

mpdlpvulq

Ejcrvgt"5"/"Eqpuqng"Rqtv"Eqpvtq"cpf"Uvcvru

Using Help

Shortcut Menu

Network: REBOOT

NTP Menu

NTP: Status

NTP: I/O Statistics (I/O_Stats)

NTP: Setup

ufmofu tti

ouqdpogjh

pvrleqph

ldqqvlgveI

pvrleqph

PTP Menu (Optional)

KGGG/37: :"

Ejcrvgt";"/RVRl

Clock Menu

Clock: Time Mode

Clock: Time Zone



Upgrade via the Console Port

Performing the Linux RFS Upgrade

NOTE TO LINUX GEEKS

[Empty box for note content]

CAUTION

[Empty box for caution content]

Transfer File to Meridian II

```

guq tda guq
dkpct{
""lvorltqqvhu0i/
8232/2289/222a50220i/
8232/2289/222a50220i/

guq!sfnpuf`iptu |rgthqto" hvr"nqikp"qp"tgoqvg"jquvc
cjo" " " " " }ugv"vtcpuhgt"oqfg"vq"dkpct{;
hfu!7121.1178.111`4/11/h{!0unq0sppugt/h{! }vtcpuhgt"vjg"ing;
rvjuÁÁÁÁÁÁÁÁÁÁÁÁÁÁ Á Á |enqug"vjg" hvr" uguukqp" chvgt"vtcpuhgtÁc

```


Recovering from a Failed RFS Upgrade

Ejcrvgt"4"ó"Dcuke"Kpuvcn/

ncvkqp."Eqppgev"vjg"Ugtkc"KlQ"Rqtv"cpf"Vguv"vjg"Ugtkc"KlQ"Rqtv

Efgbvmu!lfsofm;!GBDUPSZ
Up!pwfssjef!boe!cppu!uif!VQHSBEF!wfstjpo!pg!uif!lfsofm-!
uzqf!VQHSBEF!xjuijo!6!tfdpoet
/////

Efgbvmu!Sppu!Gjmf!Tztufn;!VQHSBEF
Up!pwfssjef!boe!cppu!uif!GBDUPSZ!wfstjpo!pg!uif!Sppu!Gjmf!Tztufn-!
uzqf!GBDUPSZ!xjuijo!6!tfdpoet

"

vqhsbeflfsfm

vqebuflfsfmgbh!2

Efgbvmu!Lfsfm!opx!tfu!up;!VQHSBEF

sfcppu

ufmofu" "tti

lfsfmwfstjpo

tztlfsofm

CPPUFE!LFSOFM!JNBHF!>!2!)Vqhsbef*

Efgbvmu!lfsofm;!VQHSBEF
Up!pwfssjef!boe!cppu!uif!GBDUPSZ!wfstjpo!pg!uif!lfsofm-!
uzqf!GBDUPSZ!xjuijo!6!tfdpoet

"

Performing the GPS Subsystem Upgrade

Rgthqto kpi"vjg"IRU" Tgegkxgt" Writcfg

CAUTION

hqtwfstjpo

P À P À

guq tdq

guq

vqhsbefsdws

tdq! q!7131.1125.111`13/scg!sppuAiptu/zpvs/epnbjo;0unq0sdwsgqhb/scg

vqhsbefsdwsgqhb

tvctztsftfu

sdswfstjpo

G0X!7121.1192.111!Wfs!2/15!..!GQHB!7131.1125.111!Wfs!13!..!PDU!22!24;19;63!3126!


```
! ouq!\^!!!!!!!!!!!!!!)2*!!.!lfzhfo!.!Dsfbuf!b!OUQ!iptu!lfz
! ouqe!\^!!!!!!!!!!!!!!)2*!!.!OUQ!ebfnpo!qsphsbn
! ouqed!\^!!!!!!!!!!!!!!)2*!!.!wfoeps.tqfdjgjd!OUQ!rvfsz!qsphsbn
! ouqr!\^!!!!!!!!!!!!!!)2*!!.!tuboebse!OUQ!rvfsz!qsphsbn
! ouqtongq!\^!!!!!!!!!!!!!!)2*!!.!OUQ!TONQ!NJC!bhfou
! touq!\^!!!!!!!!!!!!!!)2*!!.!tuboebse!TOUQ!qsphsbn
```

nbo

Change Password

```
qbttxe
```

List Active Processes

```
qt!.f
```

NTP Monitoring and Troubleshooting

```
ouqr!.o!.d!nsvmjtu
```

```
ouqr!.qffst
```


Query and Change
Ethernet Ports

fuiuppm **fui1**

fui2

fuiuppm!fui1

! fuiuppm!.t!fui1!tqffe!2111!evqmfy!gvmm!bvupofh!pgg

telO

:

\$

PTP Software License

Long Cable Runs

Recommended Cable

IMPORTANT

Using GPS Low-Noise Amplifiers (LNAs)

Ecdng"Ngpivj	Ecdng" V{rg	Pw o dgt"qh" NPCu

Using Two or Three LNAs

IMPORTANT

Calibrate Your Receiver

Ejcrvgt"35"/"Htqp/Rcpgn"Mg{rcflFkurnc{."Tgegkxgt<"Ecnkdtcvg **dbmefmbz**
tfudbme fmbz *Ejcrvgt"5"/"Eqpuqng"Rqtv"Eqpvtqn" ("Uvcvwu+*

Mounting On
A Rooftop



Obtaining A
Reference Position

About WGS-84
Height







IRU"Uwdu{uvgo "HRIC"EqpLiwtcvkqp"*HRIC+

IRU"Uwdu{uvgo "HNCUJ"Ytkvgu"*HNUJ+

IRU"Tgegkxgt"Eqo o wplecvkqp"*TEXE+

IRU"Tghgtgpeg"Vko g"*TGH+

Uwdu{uvgo "Eqo o wplecvkqp"*RQNN+

IRU"Tgegkxgt"*TEXH+

Tgegkxgt"Hcwnvu

"

U{uvgo "Quekmcvqt"RNN"*Rjcug/Nqem/Nqqr+

IRU"Cpvgppe"*CPV+

tfubougmunbt1

Rnwi/kp"Qrvkqp"*QRV+

Rtko ct{"Rqygt"Uwrrn{"*RTKRU+"/"Qrvkqp

I RU" Tghgtgpeg" Vk o g" *TGH+

I RU" Tgegkxgt" Quekncvqt" *QUE+

Cpvgppc" Ujqtv" *UJ TV+

Cpvgppc" Qrgp" *QRGP+

I RU" Tgegkxgt" Quekncvqt" RNN" *Rj cug/Nqem/Nqqr+

get_sw_opts

jotubmmfe`tx`pqujpot

hfu`tx`pqt

hfu`tx`pqt

111111111111111111111111111111111111

hfu`tx`pqt

11111111111111111111111111111111112

Software Option Bit Definitions

resetleaphistory

Vjs"ukowncvqt"ujqwnf"dg"ugv"ykvj"tgcnkuke"WVE"ngcr"ugeqpf"xcnwgud

sftfumbqijtupsz

SUMMARY

sftfumbqijtupsz



Cnr jcpw ogtke" Fkurnc{1Mg{rcf<" "
Fkurnc{<"
Mg{rcf<

U{uyg o "Uvcvwu"NGFu<
U{pe"NGF<
Cncto"NGF<"

Pgvy qtm"klQ<

PVR"Ugtxgt"Rgthqt o cpeg<
VR"Vko gwcor"Ceewtcef<

Uwrrqtvgf"KRx6"Rtqvqequ<

Uqhv yctg"Qrvkqpu
Uqhv yctg"Qrvkqpu

Uwrrqtvgf"KRx8"Rtqvqequ<

Pqvg< Ejcrvgt":/"KRx8"Kphqt o cvkqp

Ugtken"Rqtv"klQ<
Ukipcn<"
Rctcogvgtu<"
Eqppgevqt<

Pqvg< Ejcrvgt"5"/"Eqpuqng"Rqtv"Eqpu "c f" ce u

Uk|g<

Qrvkqpcn"U{peG<

Plug-In Module Options

Qrvkqpcn"Nqy"Rjcug"Pqkug"Oqfwng<
Swcpvkv{<"
 wvrw"Htgswgpe{<
 wvrw"Ngxgn<
Jctoqpkeu<
Ejcppgn/vq/Ejcppgn"Kuqncvkap<
*Uvcdknkv{< U{fwgo"Quekncvqt"Uvcdknkv{*Cnncp"FGxkcvkap+"Vcdng*
Rjcug"Pqkug< U{fwgo"Quekncvqt"Rjcug"Pqkug"Vcdng
Cnkipo gpv<
Eqppgevqt<
Pqv g<" Ejcrgvt"32"/"Tgct/Rcp gn"klQ."Nqy"Rjcug"Pqkug"Oqfwng

Qrvkqpcn"7293C"Egukw o"Eqpvtqn"Oqfwng<
Swcpvkv{<"
 wvrw"Htgswgpe{<
 wvrw"Ngxgn<
Jctoqpkeu<
Ejcppgn/vq/Ejcppgn"Kuqncvkap<
*Uvcdknkv{< U{fwgo"Quekncvqt"Uvcdknkv{*Cnncp"FGxkcvkap+"Vcdng*
Rjcug"Pqkug<

Qrvkqpcn"Cpcnqi"Vko g"Eqfg"Qwvrvw"Oqfwng<

Swcpvkv{<

Ftkxg<

Htgswgpef{<

Cnkipo gpv<"

Wugt/Ugngevc dng"Hqto cvu<"

Eqppgevt<"

Pqvg<" **Ejcrvgt"32"/"Tgct/Rcpgn"klQ."Cpcnqi"Vko g"Eqfg"Qwvrvw"Oqfwng**

Qrvkqpcn"Fkikvcn"Qwvrvw"Oqfwng<

Swcpvkv{<"

Ukipcn<"

Ω

V{rg"qh"qwvrvw<

Tkug"Vko g<

Eqppgevt"*VVN+<

Eqppgevt"*TU/454|TU/644+<

Rkpqwy"*TU/454+<

Rkpqwy"*TU/644+<

Pqvg<" **Ejcrvgt"32"/"Tgct/Rcpgn"klQ."Fkikvcn"Qwvrvw"Oqfwng**

Rtqitc o o cdng"Rwnug"Qwvrvw<"

Tcvg<

Fwvf"Efeng<

Cnkipo gpv<

" Uvc dknkv{<" τ

σ

" Cnkipo gpv"*VVN|TU/644+<

" Cnkipo gpv"*TU/454+<

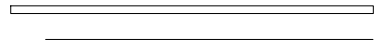
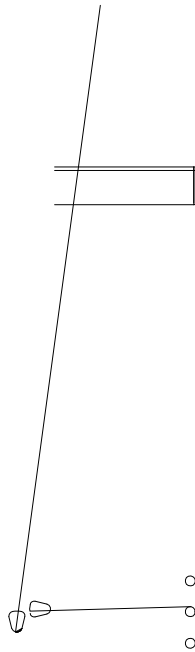
V3"Enqem"Qwvrvv<



Cnct o "Tgnc{"Qwvrvvu<

Compliance

Uwr r ng o gpvct {"Eq o rnkpeg"Fcvc<



2270 Northpoint Parkway
Santa Rosa, CA 95407