How to send and receive UDP / TCP data ?

The following ISaGRAF PAC supports receiving and sending UDP broadcast or normal package data. The package data format can be message (string) .

XP-8xx7-CE6
WP-8xx7
VP-2xW7 (driver version 1.24 or later)
uPAC-7186EG (driver version 1.12 or later)
iP-8xx7 (driver version 1.08 or later)
VP-2117 (driver version 1.01 or later)
and future released WP-5xx7.

Additionally the XP-8xx7-CE6, WP-8xx7, VP-2xW7 and future released WP-5xx7 also support package data which can contain ASCII value 0.
(However the uPAC-7186EG, iP-8xx7 and VP-2117 don't support it) .

If your ISaGRAF driver in your PAC is older than the above version, please visit the following web site to download it and then update it.
http://www.icpdas.com/en/download/show.php?num=368&nation=US&kind1=&model=&kw=isagraf

Please refer to the Chapter 19.2 and 19.3 for more information about using the UDP and TCP to receive or send data.
http://www.icpdas.com/en/download/show.php?num=333&nation=US&kind1=&model=&kw=isagraf .

You can get the “faq133_demo.zip” from https://www.icpdas.com/en/faq/index.php?kind=280#751 > 133. It contains the following ISaGRAF example programs.

UDP receive / send string : Wpdmo19 , Wpdmo19a

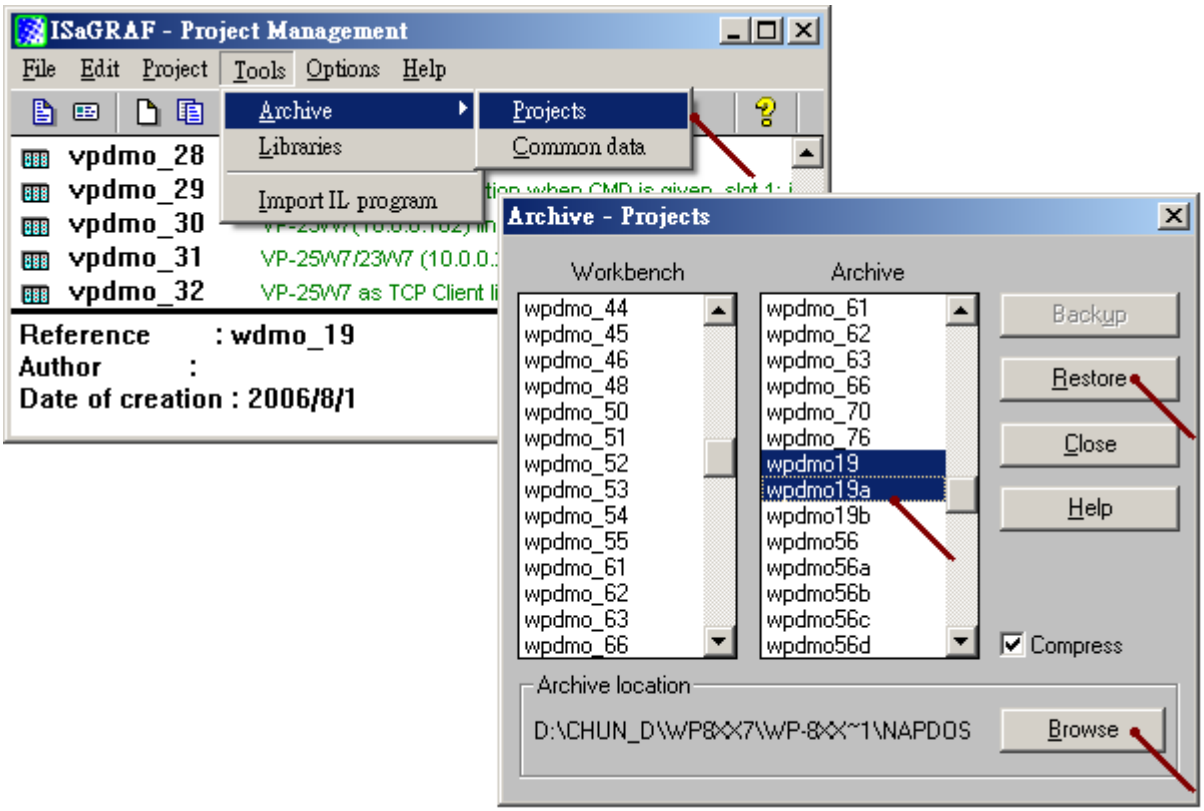
The following are supported only by the XP-8xx7-CE6, WP-8xx7, VP-2xW7 and WP-5xx7
UDP receive / send data which may contain ASCII value 0 : Wpdmo77a
TCP receive / send string : Wpdmo_32 , Wpdmo_33
TCP receive / send data which may contain ASCII value 0 : Wpdmo77b

Please refer to the next page to restore the above programs to your PC / ISaGRAF.

More product information is at the following.
Data Sheet :
http://www.icpdas.com/en/download/index.php?nation=US&kind1=6&kind2=15&model=&kw=isagraf

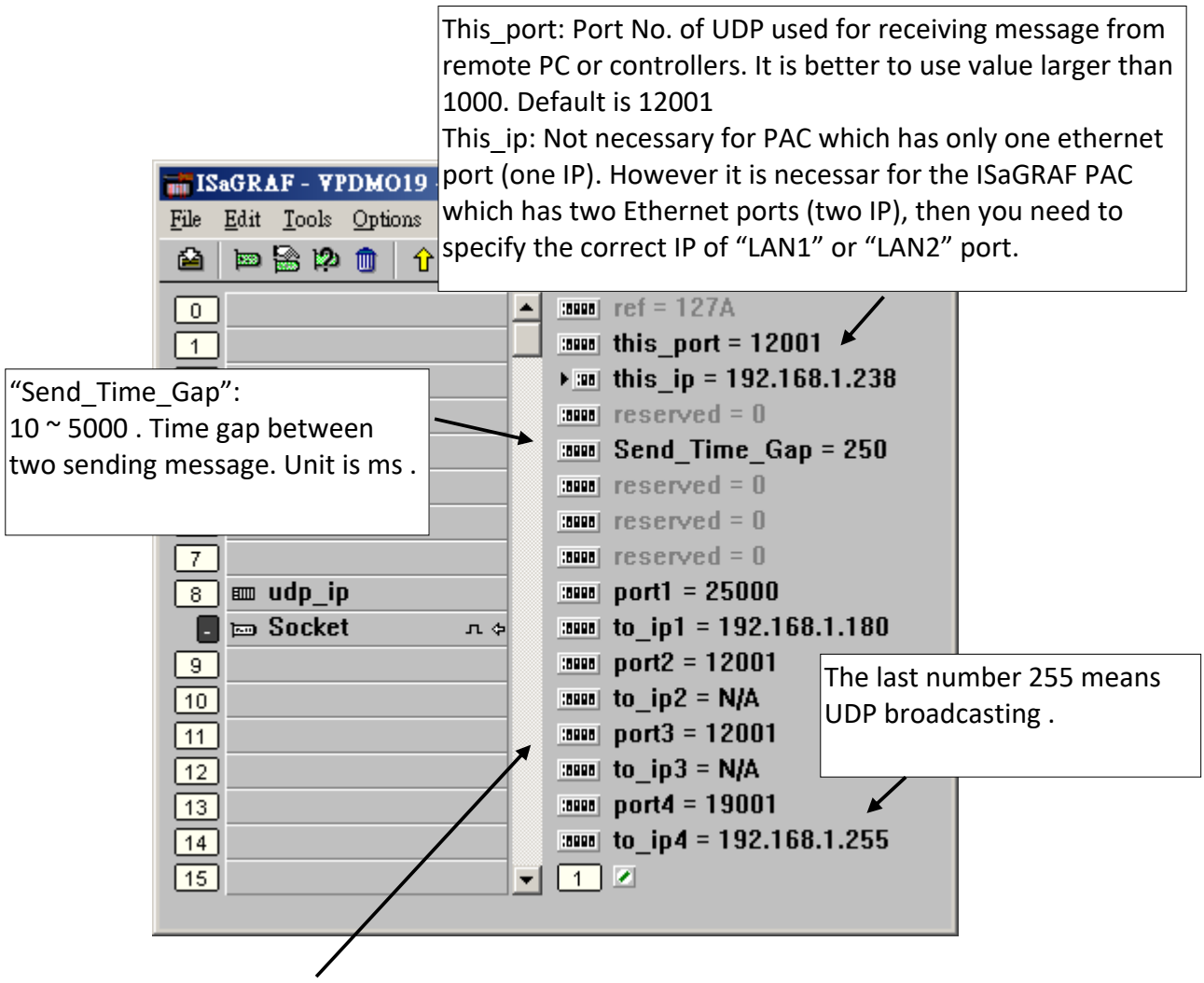
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Restore example programs to the PC / ISaGRAF .



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To use the UDP in the ISaGRAF PAC , first connecting the “udp_ip” in the IO connection.



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Then user may write a ST program similar as below to send UDP message periodly.

```
(* INIT1 is declared as internal Boolean with initial value TRUE , TMP is an internal Boolean.
   TMR1 , TMR1_next and TMR1_interval are declared as internal timers.
   CNT1    is declared as an internal Integer *)
if   INIT1    then
   INIT1 := False;       (* No more *)
   TMR1_interval := T#5s ;
   TMR1 := T#0s ;
   TMR1_next := TMR1_interval ;
   tStart(TMR1);       (* start ticking timer *)
end_if ;

(* send UDP message to 1st connection every 5 seconds *)
if   TMR1 >= TMR1_next    then

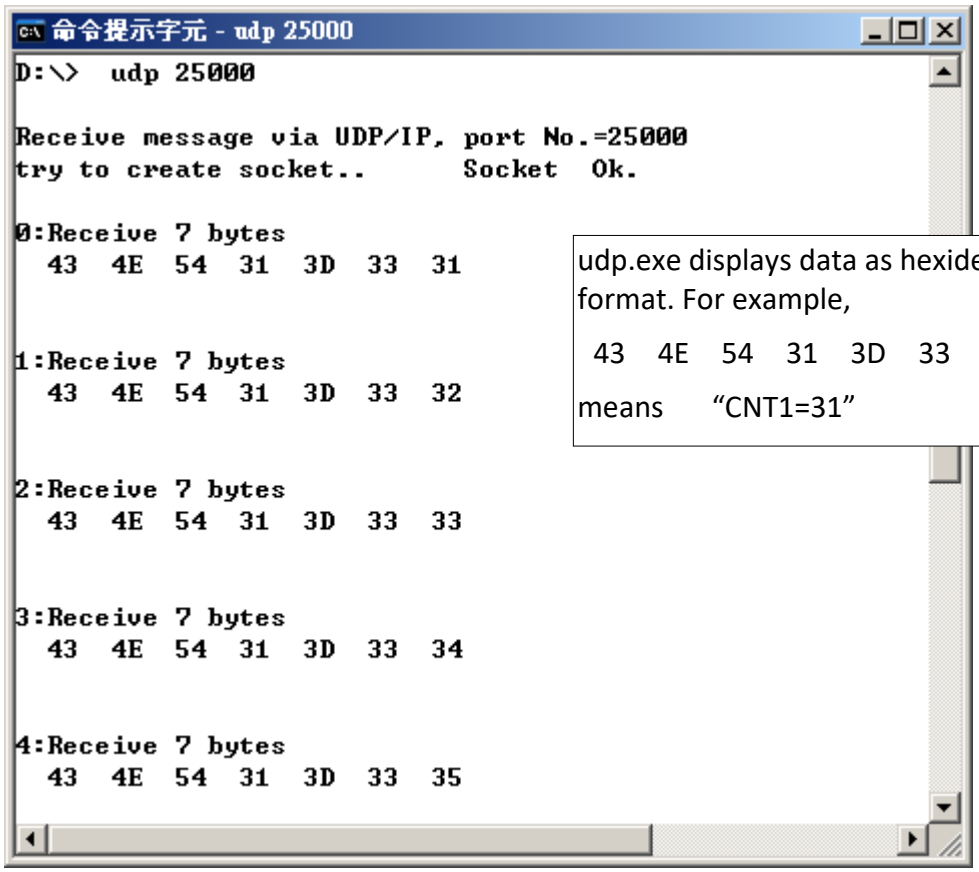
   TMR1_next := TMR1_next + TMR1_interval ;
   if   TMR1 >= T#12h    then         (* reset TMR1 every 12 hour *)
        TMR1 := T#0s ;
        TMR1_next := TMR1_interval ;
   end_if ;
   CNT1 := CNT1 + 1 ;
   if   CNT1 >= 10000    then
        CNT1 := 0 ;
   end_if ;
   (* send UDP message to the 1st connection *)
   TMP := udp_send( 1 , 'CNT1=' + MSG(CNT1) ) ;

end_if ;
```


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There is one utility - “udp.exe” coming with the “faq133_demo.zip” which can run in the PC with Windwos 2000, XP or compatible OS. It can receive the UDP message and display the data. Please open a command console, then for example, to receive data from UDP port 25000, type “udp 25000” .

D:\> udp 25000



udp.exe displays data as hexidecimal format. For example,

43 4E 54 31 3D 33 31

means “CNT1=31”

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