

PRELIMINARY COMMAND STRUCTURE FOR THE PFAHUB UNIT AND OTHER PFxxxxx I/O BOARDS
(UPDATED 01-04-04)

IMPORTANT NOTE: WE WILL BE CHANGING THE END CHARACTER (* TO #) FOR RESPONSE
STRINGS

STARTING WITH VERSION 1.4A-20031031.

COMMAND	RESPONSE (X=NIBBLE)	NOTES
*LOC (0FH)	LUNIT (0FH) -ffff#<CR><LF> NOTE: 3-BIT FLAGS FOR NOW	ffff=BIT FLAGS MSB=1=WIEGAND CARD MSB-1=1=MAG CARD
*GET (0FH)	GUNIT (0FH) -ffff-IIII-O000-JJJJJJ#<CR><LF>	f=FLAGS, I=INPUTS O=OUTPUTS, J=JUMPERS
*RDW (0FH)	W (BCH) -XXXXXXXXXXXXXXXXXX#<CR><LF>	BC=BIT COUNTER (HEX) X=16-CHARACTER WIEGAND
*CLW (0FH)	WCLEAR<CR><LF>	CLEAR WIEGAND FLAG/BUF
*RDM (0FH)	M (CCH) -XXXXXXXXXXXXX.....XXXX#<CR><LF>	CC=CHAR COUNTER (HEX) X=32-CHARACTER MAG CARD
*CLM (0FH)	MCLEAR<CR><LF>	CLEAR MAG CARD FLAG/BUF
*DEN (0FH, 05H)	DISP-EN<CR><LF>	ENABLE DISPLAY PASSTHRU ADDRESS, CHAR COUNT
*VER (0FH)	VER-2.1A-20030921<CR><LF>	VERSION AND DATE CODE
*TYP (0FH)	TYPE-PFAHUB-REV-A<CR><LF>	TYPE AND REVISION
*HLP (0FH)	DISPLAY HELP PAGE<CR><LF>	DISPLAY HELP PAGE
*RDK (0FH)	KEY=XXH-ffff#<CR><LF>	GET KEY VALUE XXH ffff=BIT FLAGS MSB=1=WIEGAND CARD MSB-1=1=MAG CARD MSB-2=1=KEY FLAG

NOTE: IF NO DISPLAY FFH IS RETURNED

----- I/O BOARD COMMANDS -----

*KXX (0FH, AAH, XXXXH)	KALL-XXXX<CR><LF>	XXXX=BIT PATTERN (HEX) NOTE: TERMINATE ALL TIMERS
(ADDRESS, ALL RELAYS, MASK VALUE)		
*KXX (0FH, 01H, XXXXH)	K01-DDDD<CR><LF>	DDDD=TIME (HEX) 0.1SEC.
(ADDRESS, RELAY#, TIMER)		0000H=OFF, FFFFH=ON
*KXX (0FH, 01H, XXXH)	"	"
*KXX (0FH, 01H, XXH)	"	"
*KXX (0FH, 01H, XH)	"	"

*TMR(0FH)	TIMERS(0FH)-	Read the status of all the timers
	1:0000 (.0 Sec.)	
	2:0000 (.0 Sec.)	
	3:0000 (.0 Sec.)	
	4:0000 (.0 Sec.)	
	5:0000 (.0 Sec.)	
	6:0000 (.0 Sec.)	
	7:0000 (.0 Sec.)	
	8:0000 (.0 Sec.)	

*TEN(0FH)	TTL-EN<CR><LF>	ENABLE TTL PASSTHRU
*TDA(0FH)	TTL-DA<CR><LF>	TERMINATE TTL PASSTHRU
*CLK(0FH)	KCLEAR<CR><LF>	CLEAR KEY FLAG IS NOT PENDING AND VALUE
*PFL(0FH)	NONE	ENTER THE BOOTLOADER
*OPT(0FH, READ)	-- OPTIONS(0FH,TDLY=01H)	Read the non-volatile options
*OPT(0FH, TDLY, 01H)	-- OPTIONS(0FH,TDLY=01H)	Set the transmit delay increments of 250us per count
*OPT(0FH, I2CA, 01H)	-- OPTIONS(0FH,I2CA=01H)	Set the base address of the I2C Display (pfahub only)

NOTE: IF A NEW PASSTHRU FUNCTION IS SELECTED THE PREVIOUS PASSTHRU
MUST BE TERMINATED. PROBABLY A BETTER WAY TO DO KEY INPUTS.

PF884A --- PF884A PF884A --- PF884A PF884A --- PF884A PF884A --- PF884A PF884A -
-- PF884A (START OF SPEC)

OPTIONS ----

Change baud rate from monitor only, activate monitor 9600 baud with J13 removed
Activate bootloader from power on J12 removed, normally leave this jumper on.

```
*OPT(0FH, READ)
OPTIONS(0FH,
TRANSMIT DELAY=05H
EVENT MODE=N
INPUT DEBOUNCE=200 milli-seconds
AUTO SEND TIME=0 Seconds)

*OPT(0FH,TDLY=05H)OPTIONS(0FH,TRANSMIT DELAY=05H)
*OPT(0FH,EVNT=N)OPTIONS(0FH,EVENT MODE=N)
```

```
*OPT(0FH, EVNT=Y) OPTIONS(0FH, EVENT MODE=Y)
*OPT(0FH, DBNC=200) OPTIONS(0FH, INPUT DEBOUNCE=200 milli-seconds)
*OPT(0FH, AUTO=0) OPTIONS(0FH, AUTO SEND TIME=0 Seconds)
*OPT(0FH, AUTO=5) OPTIONS(0FH, AUTO SEND TIME=5 Seconds)
```

RELAY ----

```
*KXX(0FH, AAH, 01H) KALL-0001
*KXX(0FH, 01H, 0AH) K01-000A
*KXX(0FH, 08H, 0AH) K08-000A
*KXX(0FH, AAH, AAH) KALL-00AA
```

TIMER ----

```
*TMR(0FH) TIMERS(0FH) -
1:0000 ( .0 Sec.)
2:0000 ( .0 Sec.)
3:0000 ( .0 Sec.)
4:0000 ( .0 Sec.)
5:0000 ( .0 Sec.)
6:0000 ( .0 Sec.)
7:0000 ( .0 Sec.)
8:0000 ( .0 Sec.)
```

DISPLAY POSITIONS:

12345678901234567890

```
OUT  INP  OUT  INP
1010 1101 0011 0110
1101 1000 1010 1011
INP  OUT  INP  OUT
```

12345678901234567890

```
PF884A --- PF884A PF884A --- PF884A PF884A --- PF884A PF884A --- PF884A PF884A -
-- PF884A (END OF SPEC)
```

```
PFRR08 --- PFRR08 PFRR08 --- PFRR08 PFRR08 --- PFRR08 PFRR08 --- PFRR08 PFRR08 -
-- PFRR08
```

```
PFRR08 --- PFRR08 PFRR08 --- PFRR08 PFRR08 --- PFRR08 PFRR08 --- PFRR08 PFRR08 -
-- PFRR08
```


PF1616L SPECIFIC COMMANDS (START)

J14 - Standalone Mode enabled if removed
J15 - Installed = Master, Removed = Slave
J16 - Dual parser enabled if removed, helpful to reload firmware
J17 - Internal/External Address Enable, External J27-J34 if installed, Internal 8bit if removed

J18-J19-J20-J21 - Baud rate jumpers

msb--lsb

I	I	I	O	115200
I	I	O	I	76800
I	I	O	O	57600
I	O	I	I	38400
I	O	I	O	28800
I	O	O	I	19200
I	O	O	O	14400
O	I	I	I	9600
O	I	I	O	4800
O	I	O	I	2400

all other combos are 9600 baud

J27-J34 External address J27(msb) - J34(lsb)

MSRTXDLY - Master/Slave Retry TX Delay

COMMAND ==> *OPT(0FH,MSRTXDLY=50)

RESPONSE ==> OPTIONS(0FH,MASTER RETRY TX DELAY=50 *.1S)

MSRDO - Master/Slave Relay Drop Out time

COMMAND ==> *OPT(0FH,MSRDO=50)

RESPONSE ==> OPTIONS(0FH,MASTER/SLAVE RELAY DROP OUT TIME=50 * .1S)

Read All Options (1616L)

COMMAND ==> *OPT(0FH,READ)

RESPONSE ==> OPTIONS(0FH,

RESPONSE ==> TRANSMIT DELAY=32H (*500uS)

RESPONSE ==> EVENT MODE=N

RESPONSE ==> INPUT DEBOUNCE=10 mS

RESPONSE ==> AUTO SEND TIME=0 S

RESPONSE ==> MASTER RETRY TX DELAY=100 *.1S

RESPONSE ==> MASTER/SLAVE RELAY DROP OUT TIME=50 *.1S

TIMER READING

*TMR(0FH)TIMERS(0FH)-

1:0000	9:0000
2:0000	10:0000
3:0000	11:0000
4:0000	12:0000
5:0000	13:0000
6:0000	14:0000
7:0000	15:0000
8:0000	16:0000

EVENT MODE COMMANDS

*OPT(0FH,TDLY=05H)OPTIONS(0FH,TRANSMIT DELAY=05H)

*OPT(0FH,EVNT=N)OPTIONS(0FH,EVENT MODE=N)

*OPT(0FH,EVNT=Y)OPTIONS(0FH,EVENT MODE=Y)

*OPT(0FH,DBNC=200)OPTIONS(0FH,INPUT DEBOUNCE=200 milli-seconds)

*OPT(0FH,AUTO=0)OPTIONS(0FH,AUTO SEND TIME=0 Seconds)

*OPT(0FH,AUTO=5)OPTIONS(0FH,AUTO SEND TIME=5 Seconds)

BOARD ADDRESS COMMANDS

*OPT(0FH,IAS)OPTIONS(22H, 8-BIT INTERNAL ADDRESS) -- Board internal address 8 bits
*OPT(0FH,IAL)OPTIONS(022H, 12-BIT INTERNAL ADDRESS) -- Board internal address 12 bits

NOTES:

TDLY=XXH, XX must be hex digits, 00,01,02,... 2 digits required. 255 decimal maximum.

ADDR=XXH, Specify the internal address, default 0E hex.

PF1616-ALL Command for multiple relay control.

*KXX command to control multiple ON/OFF relay control simultaneously
choices are:

1. To control all 16 relays ON/OFF state use the command - *KXX(addrH, AAAAH, ON/OFF-maskH[16bit mask])
2. To control upper 8 relays ON/OFF state use the command - *KXX(addrH, AA00H, ON/OFF-maskH[8bit mask])
3. To control lower 8 relays ON/OFF state use the command - *KXX(addrH, AAH, ON/OFF-maskH[8bit mask])
4. To control middle 8 relays ON/OFF state use the command - *KXX(addrH, AA0H, ON/OFF-maskH[8bit mask])

Examples (address = 0FH)

HI 5's would be - *KXX(0FH,AA00H,55H)KALL-5500

Result: K9-ON K10-OFF K11-ON K12-OFF K13-ON K14-OFF K15-ON K16-OFF

LO 5's would be - *KXX(0FH,AAH,55H)KALL-0055

Result: K1-ON K2-OFF K3-ON K4-OFF K5-ON K6-OFF K7-ON K8-OFF

MID 5's would be - *KXX(0FH,AA0H,55H)KALL-0550

Result: K4-ON K5-OFF K6-ON K7-OFF K8-ON K9-OFF K10-ON K11-OFF

ALL 0's would be - *KXX(0FH,AAAAH,0000H)KALL-0000

Result: K9-OFF K10-OFF K11-OFF K12-OFF K13-OFF K14-OFF K15-OFF K16-OFF
K1-OFF K2-OFF K3-OFF K4-OFF K5-OFF K6-OFF K7-OFF K8-OFF

ALL A's would be - *KXX(0FH,AAAAH,AAAAH)KALL-AAAA

Result: K9-OFF K10-ON K11-OFF K12-ON K13-OFF K14-ON K15-OFF K16-ON
K1-OFF K2-ON K3-OFF K4-ON K5-OFF K6-ON K7-OFF K8-ON

Internal Address Configuration

COMMAND ==> *OPT(0FH,ADDR=0EH)

RESPONSE ==> OPTIONS(0EH, Internal Address=0E)

Version 1.3 - added support for USB module (ID 0x1B)

PF1616L SPECIFIC COMMANDS (STOP)

