PI5008K UART Protocol CMD SET

v0.1
system 2
smoh

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PI5008K RDK Uart Protocol description

- baud rate - 115200
- parity check - none
- data bits - 8
- Space character (32/0x20) is used to separate command and arguments
- Line Feed(\n)(10/0x0A) – end of command
- CS(checksum)
  - ✓ Placed right in front of LF byte
  - ✓ CS is sum of all data except CS itself and LF byte..
  - ✓ If data length is longer than 4 bytes, all data except lower 4 bytes will be discarded (For example, 0x1 0000 ABCD -> 0xABCD)

- Echo - PI5008K will send a response(ok,error,register read data,file data)

- Purpose – External input(remote controller/touch) and File(binary) transmission
  - ✓ Data will be treated not as asci but as binary data(hexadecimal) during file transmission.

PI5008K Uart Command Set - register control

- register **write(single mode)** command set

Request		CMD		A1		A2		A3		A4	
t	SP	reg	SP	sw	SP	"add"	SP	DATA	SP	CS	\n
r	SP	reg	SP	sw	SP	ok	SP	CS	\n		
r	SP	reg	SP	sw	SP	err	SP	CS	\n		

single write : "t reg sw 0 10 'CS'\n"

- register **write(continuous mode)** command set (TBD)

Request		CMD		A1		A2		A3		A4	A5	...	A N+3		A N+4	
t	SP	reg	SP	cw	SP	"add"	SP	"CNT"	SP	D0	D1	...	DN	SP	CS	\n
r	SP	reg	SP	cw	SP	ok	SP	CS	\n							
r	SP	reg	SP	cw	SP	error	SP	CS	\n							

contunous write : "t reg cw 0x00 4 10 11 12 13 'CS'\n"

- register register **read** command set (TBD)

Request		CMD		A1		A2		A3		A4/D0	D1	D2	...	DN		A5	
t	SP	reg	SP	r	SP	"add"	SP	"CNT"	SP	CS	\n						
r	SP	reg	SP	r	SP	"add"	SP	"CNT"	SP	D0	D1	D2	...	DN	SP	CS	\n
r	SP	reg	SP	r	SP	error	SP	CS	/n								

read : "t reg r 0x00000000 10 'CS'\n"
or "t reg r 0x00000000 0x0a 'CS'\n"

PI5008K Uart Command Set - externel controller

- remote controller command set

Request		cmd		A1		A2		A3	
t	SP	con	SP	rem	SP	center	SP	CS	\n
t	SP	con	SP	rem	SP	up	SP	CS	\n
t	SP	con	SP	rem	SP	down	SP	CS	\n
t	SP	con	SP	rem	SP	left	SP	CS	\n
t	SP	con	SP	rem	SP	right	SP	CS	\n
r	SP	con	SP	rem	SP	ok	SP	CS	\n
r	SP	con	SP	rem	SP	error	SP	CS	\n

remote control : "t con rem center 'US' 'CS' \n"

- touch controller command set (TBD)

Request		CMD		A1		A2		A3		A4	
t	SP	con	SP	tou	SP	"x(dec/hex)"	SP	"y(dec/hex)"	SP	CS	\n
r	SP	con	SP	tou	SP	ok	SP	CS	\n		
r	SP	con	SP	tou	SP	error	SP	CS	\n		

touch control : "t con tou 600 400\n"

PI5008K Uart Command Set - File Transfer Mode

- File(bin) Transfer Write Mode (TBD)

Request		CMD		A1		A2		A3		D1	D2	D3	...	DN-1	DN	A4	
t	SP	file	SP	w	SP	type	SP	SIZE	SP	D1	D2	D3	...	DN-1	DN	CS	\n
r	SP	file	SP	w	SP	type	SP	ok	SP							CS	\n
r	SP	file	SP	w	SP	type	SP	error	SP							CS	\n

file write mode: "t file w 'type' 'size' d1 d2 d3 d4 .... dN-1 dN 'checksum'\n "

- File(bin) Transfer Read Mode (TBD)

Request		CMD		A1		A2		A3		D1	D2	D3	...	DN-1	DN	A4	
t	SP	file	SP	r	SP	type	SP	CS	\n								
r	SP	file	SP	r	SP	type	SP	SIZE	SP	d1	d2	d3	...	dn-1	dN	CS	\n
r	SP	file	SP	r	SP	type	SP	error	SP							CS	\n

file read mode : "t file r 'type' 'checksum'\n"

PI5008K Uart Command Set - Steering Wheel & Turn Signal & Gear Status

- Steering Wheel command set (TBD)

Request		cmd		A1		A2		A3	
t	SP	con	SP	stwh	SP	dm35	SP	CS	\n
t	SP	con	SP	stwh	SP	d0	SP	CS	\n
t	SP	con	SP	stwh	SP	dr35	SP	CS	\n

STeering WHeel control : "t con stwh dm35 'CS' \n"

description of 'A2'
- degree minus = dm
- degree plus = dp
- degree 0 = d0 (center)

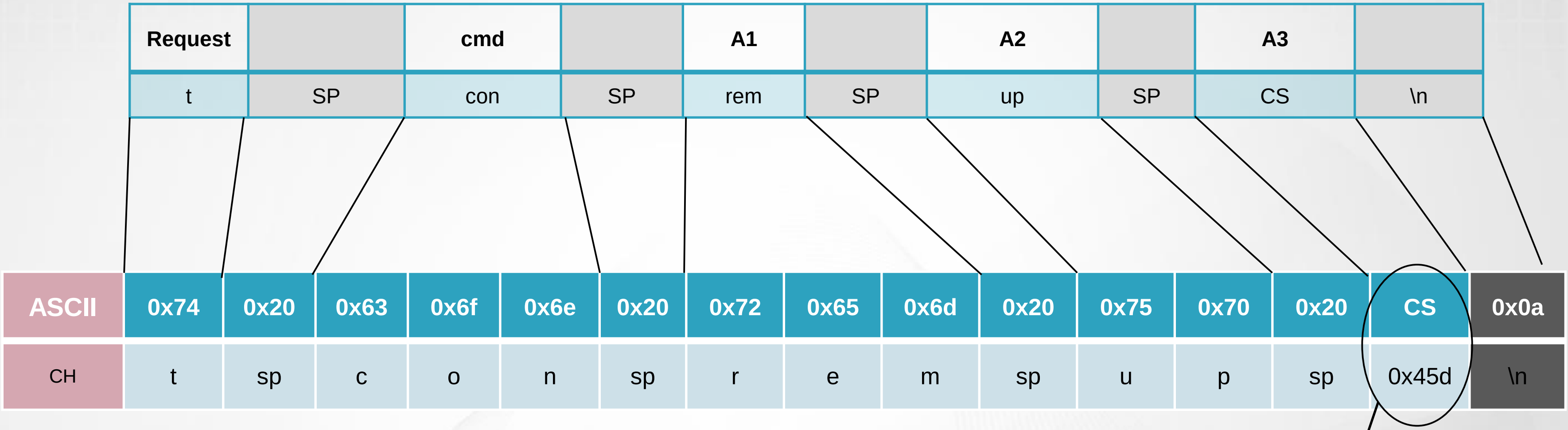
- turn signal command set (TBD)

Request		CMD		A1		A2		A3	
t	SP	con	SP	sig	SP	left	SP	CS	\n
t	SP	con	SP	sig	SP	right	SP	CS	\n
t	SP	con	SP	sig	SP	emergency	SP	CS	\n
t	SP	con	SP	gear	SP	rear	SP	CS	\n
t	SP	con	SP	gear	SP	drive	SP	CS	\n

Turn Signal & Gear Status control : "t con sig left 'CS'\n"

PI5008K Uart Command Set - example

- remote controller command set - upkey



Request		cmd		A1		A2		A3	
t	SP	con	SP	rem	SP	up	SP	CS	\n

ASCII	0x74	0x20	0x63	0x6f	0x6e	0x20	0x72	0x65	0x6d	0x20	0x75	0x70	0x20	CS	0x0a
CH	t	sp	c	o	n	sp	r	e	m	sp	u	p	sp	0x45d	\n

CS(checksum)

0x74+0x20+0x63+0x6F+0x6E+0x20+0x72+0x65+0x6D+0x20+0x75+0x70+0x20 = 0x45d

Actual data (19byte)

0x74 0x20 0x63 0x6f 0x6e 0x20 0x72 0x65 0x6d 0x20 0x75 0x70 0x20 **0x30 0x78 0x34 0x35 0x64** 0x0a

ascii

0 -	**0x30**
x -	**0x78**
4 -	**0x34**
5 -	**0x35**
d -	**0x64**

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