

ADDR

Category	ADDR	Description
Broadcast	FF	Broadcast to All Devices
Broadcast Group	FE	Broadcast to Devices in Group
Broadcast Group	FD	Broadcast to Devices in Group
Broadcast Group	FC	Broadcast to Devices in Group
Broadcast Group	FB	Broadcast to Devices in Group
Broadcast Group	FA	Broadcast to Devices in Group
Broadcast Group	F9	Broadcast to Devices in Group
Broadcast Group	F8	Broadcast to Devices in Group
Broadcast Group	F7	Broadcast to Devices in Group
Broadcast Group	F6	Broadcast to Devices in Group
Broadcast Group	F5	Broadcast to Devices in Group
Broadcast Group	F4	Broadcast to Devices in Group
Broadcast Group	F3	Broadcast to Devices in Group
Broadcast Group	F2	Broadcast to Devices in Group
Broadcast Group	F1	Broadcast to Devices in Group
Broadcast Group Default	F0	Default broadcast group if device has not been configured
Unicast	EF	Unicast to Device
Unicast	...	Unicast to Device
Unicast	02	Unicast to Device
Unicast Default	01	Default unicast address if device has not been configured
None	00	No receipient

BOARD

Board	Type
All	FF
Kha-bgt-rainbow	A8
Kha-bgt-preset	A7
Kha-bgt-main	A6
Kha-bgt-kaox	A5
Kha-bgt-hsi	A4
Kha-bgt-guru	A3
Kha-bgt-dark	A2
kha-bgt-power	A1
kha-bgt-audio	A0
Kha-led-strip	07
Kha-remote	06
Kha-main	05
kha-relay-2x3-node	04
kha-gateway-usb	03
Kha-led-ikea-node	02
Board Default	01
None	00

CMD

Category	CMD	Opt Len	Payload
Management	FF	0 / 2	- or <1: board type> <1: board rev>
Management	FE	0	-
Management	FD	2	<1: board type> <1: board rev>
Management	FC	2	<1: board type> <1: board rev>
Management	FB	2	<1: board type> <1: board rev>
Management	FA	67	<1: board type> <1: board rev> <1: part 0-7> <64: data>
Management	F9	3	<1: board type> <1: board rev> <1: page>
Reserved	F8	Reserved	Reserved
Reserved	F7	Reserved	Reserved
Reserved	F6	Reserved	Reserved
Reserved	F5	Reserved	Reserved
Reserved	F4	Reserved	Reserved
Reserved	F3	Reserved	Reserved
Reserved	F2	Reserved	Reserved
Management	F1	0	-
Management	F0	0	-
Reserved	EF	Reserved	Reserved
Reserved	EE	Reserved	Reserved
Device	ED	1	<1: preset>
Device	EC	0	-
Device	EB	0	-
Device	EA	0	-
Device	E9	0	-
Device	E8	1-MAX	<data>
Device	E7	0	-
Device	E6	9	<9: stats>
Device	E5	0	-
Device	E4	0	-
Device	E3	0	-
Device	E2	20	<1: board type> <1: board rev> <1: device group> <1: 0=boot, 1=app> <4: boot version> <4: boot crc> <4: app version> <4:app crc>
Device	E1	20	<1: board type> <1: board rev> <1: device group> <1: 0=boot, 1=app> <4: boot version> <4: boot crc> <4: app version> <4:app crc>
Device	E0	0	-
Register	DF	0	-
Register	DE	0	-
Register	DD	0	-
Reserved	DC	Reserved	Reserved
Reserved	DB	Reserved	Reserved
Reserved	DA	Reserved	Reserved
Reserved	D9	Reserved	Reserved
Register	D8	1	<1: addr>
Register	D7	1	<1: addr>
Register	D6	2-MAX	<1: addr> <data>
Register	D5	2-MAX	<1: addr> <data>
Reserved	D4	Reserved	Reserved
Reserved	D3	Reserved	Reserved
Reserved	D2	Reserved	Reserved
Register	D1	1-MAX	<1:addr> <data, empty if failed>
Register	D0	2	<1: addr> <1: len>
Reserved	CF	Reserved	Reserved
Reserved	CE	Reserved	Reserved
Reserved	CD	Reserved	Reserved
Reserved	CC	Reserved	Reserved
Reserved	CB	Reserved	Reserved
Reserved	CA	Reserved	Reserved
Reserved	C9	Reserved	Reserved
Reserved	C8	Reserved	Reserved
Reserved	C7	Reserved	Reserved

Type	Description
Command	Reboot Device, optionally only matching specific hardware
Reply	Bootloader: Command error
Command	Bootloader: Do not exit
Command	Bootloader: Wipe FLASH
Command	Bootloader: Wipe EEPROM
Command	Bootloader: Firmware data
Command	Bootloader: Firmware write
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Command	TX Enable
Command	TX Disable
Reserved	Reserved
Reserved	Reserved
Command	Preset
Command	UI Enable
Command	UI Disable
Command	Debug Enable
Command	Debug Disable
Broadcast	Debug Message
Command	Stats Clear
Reply	Stats Response
Command	Stats Request
Reply	Pong
Command	Ping
Broadcast	Up
Reply	Ident Response
Command	Ident Request
Command	Wipe configuration in memory
Command	Store configuration to EEPROM
Command	Load configuration from EEPROM
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reply	Write Fail
Reply	Write Success
Command	Write <data> bytes to address <addr>, don't reply
Command	Write <data> bytes to address <addr>
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reply	Read Reply <data> bytes from address <addr> or empty if failed
Command	Read <len> bytes from address <addr>
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved

CMD

Reserved	C6	Reserved	Reserved
Reserved	C5	Reserved	Reserved
Reserved	C4	Reserved	Reserved
Reserved	C3	Reserved	Reserved
Sensor	C2	1	<1: 0.5%>
Sensor	C1	1	<1: uint 0.5 degree>
Sensor	C0	8	<1: year - 2000> <1: month> <1: day> <1: hour> <1: minute> <1: second> <1: sunday = 1> <1: calender week>
Reserved	BF	Reserved	Reserved
Reserved	BE	Reserved	Reserved
Reserved	BD	Reserved	Reserved
Reserved	BC	Reserved	Reserved
Reserved	BB	Reserved	Reserved
Reserved	BA	Reserved	Reserved
Reserved	B9	Reserved	Reserved
Reserved	B8	Reserved	Reserved
Reserved	B7	Reserved	Reserved
Reserved	B6	Reserved	Reserved
Reserved	B5	Reserved	Reserved
Reserved	B4	Reserved	Reserved
Reserved	B3	Reserved	Reserved
Reserved	B2	Reserved	Reserved
App	B1	3	<1: speed> <1: width> <1: enabled>
App	B0	3	<1: hue> <1: saturation> <1: intensity>
Reserved	AF	Reserved	Reserved
Reserved	AE	Reserved	Reserved
Reserved	AD	Reserved	Reserved
Reserved	AC	Reserved	Reserved
Reserved	AB	Reserved	Reserved
Reserved	AA	Reserved	Reserved
Reserved	A9	Reserved	Reserved
Reserved	A8	Reserved	Reserved
Reserved	A7	Reserved	Reserved
Reserved	A6	Reserved	Reserved
Reserved	A5	Reserved	Reserved
Reserved	A4	Reserved	Reserved
Reserved	A3	Reserved	Reserved
Reserved	A2	Reserved	Reserved
Reserved	A1	Reserved	Reserved
Reserved	A0	Reserved	Reserved
Vendor	9F	?	?
Vendor	...	?	?
Vendor	01	?	?
System	00	0	-

Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Broadcast	Humidity Broadcast [not implemented yet]
Broadcast	Temperature Broadcast [not implemented yet]
Broadcast	Time Broadcast [not implemented yet]
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Broadcast	LED Animation
Broadcast	LED HSI
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
Reserved	Reserved
?	Vendor Specific
?	Vendor Specific
?	Vendor Specific
Command	NOP

REGISTER

Module	Type	ADDR	Function	Values
Kha-bgt-audio	Device	00	Select audio source/destination	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Device	01	Bluetooth connection trigger	1=trigger once
Kha-bgt-audio	Device	02	Select power-on audio source/destination	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	03	Preset 0 enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	04	Preset 0 mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	05	Preset 1 enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	06	Preset 1 mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	07	Preset 2 enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	08	Preset 2 mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	09	Preset 3 enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	0A	Preset 3 mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	0B	Preset 4 enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	0C	Preset 4 mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	0D	Preset 5 enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	0E	Preset 5 mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	0F	Preset 6 enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	10	Preset 6 mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	11	Preset 7 enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	12	Preset 7 mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	13	Preset 8 enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	14	Preset 8 mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	15	Preset 9 enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	16	Preset 9 mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	17	Preset A enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	18	Preset A mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	19	Preset B enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	1A	Preset B mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	1B	Preset C enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	1C	Preset C mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	1D	Preset D enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	1E	Preset D mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	1F	Preset E enabled	0 = Off, 1= On
Kha-bgt-audio	Preset	20	Preset E mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-audio	Preset	21	Preset F enabled	0 = Off, 1= On

REGISTER

Kha-bgt-audio	Preset	22	Preset F mode	0=AUXA, 1=AUXB, 2=AUXC, 3=AUXD
Kha-bgt-dark	Preset	00	Preset 0 enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	01	Preset 0 mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	02	Preset 1 enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	03	Preset 1 mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	04	Preset 2 enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	05	Preset 2 mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	06	Preset 3 enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	07	Preset 3 mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	08	Preset 4 enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	09	Preset 4 mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	0A	Preset 5 enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	0B	Preset 5 mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	0C	Preset 6 enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	0D	Preset 6 mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	0E	Preset 7 enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	0F	Preset 7 mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	10	Preset 8 enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	11	Preset 8 mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	12	Preset 9 enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	13	Preset 9 mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	14	Preset A enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	15	Preset A mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	16	Preset B enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	17	Preset B mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	18	Preset C enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	19	Preset C mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	1A	Preset D enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	1B	Preset D mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	1C	Preset E enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	1D	Preset E mode	0=Send Off, 1=Send On
Kha-bgt-dark	Preset	1E	Preset F enabled	0 = Off, 1= On
Kha-bgt-dark	Preset	1F	Preset F mode	0=Send Off, 1=Send On
Kha-bgt-guru	Device	00	Send to device id	0x00-0xFF
Kha-bgt-guru	Device	01	Stats request interval	0x01-0xFF (min) 0x00 = Off

REGISTER

Kha-bgt-hsi	Device	00	Send to device id	0x00-0xFF
Kha-bgt-hsi	Preset	01	Preset 0 enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	02	Preset 0 hue	0x00-0xFF
Kha-bgt-hsi	Preset	03	Preset 0 saturation	0x00-0xFF
Kha-bgt-hsi	Preset	04	Preset 0 intensity	0x00-0xFF
Kha-bgt-hsi	Preset	05	Preset 1 enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	06	Preset 1 hue	0x00-0xFF
Kha-bgt-hsi	Preset	07	Preset 1 saturation	0x00-0xFF
Kha-bgt-hsi	Preset	08	Preset 1 intensity	0x00-0xFF
Kha-bgt-hsi	Preset	09	Preset 2 enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	0A	Preset 2 hue	0x00-0xFF
Kha-bgt-hsi	Preset	0B	Preset 2 saturation	0x00-0xFF
Kha-bgt-hsi	Preset	0C	Preset 2 intensity	0x00-0xFF
Kha-bgt-hsi	Preset	0D	Preset 3 enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	0E	Preset 3 hue	0x00-0xFF
Kha-bgt-hsi	Preset	0F	Preset 3 saturation	0x00-0xFF
Kha-bgt-hsi	Preset	10	Preset 3 intensity	0x00-0xFF
Kha-bgt-hsi	Preset	11	Preset 4 enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	12	Preset 4 hue	0x00-0xFF
Kha-bgt-hsi	Preset	13	Preset 4 saturation	0x00-0xFF
Kha-bgt-hsi	Preset	14	Preset 4 intensity	0x00-0xFF
Kha-bgt-hsi	Preset	15	Preset 5 enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	16	Preset 5 hue	0x00-0xFF
Kha-bgt-hsi	Preset	17	Preset 5 saturation	0x00-0xFF
Kha-bgt-hsi	Preset	18	Preset 5 intensity	0x00-0xFF
Kha-bgt-hsi	Preset	19	Preset 6 enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	1A	Preset 6 hue	0x00-0xFF
Kha-bgt-hsi	Preset	1B	Preset 6 saturation	0x00-0xFF
Kha-bgt-hsi	Preset	1C	Preset 6 intensity	0x00-0xFF
Kha-bgt-hsi	Preset	1D	Preset 7 enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	1E	Preset 7 hue	0x00-0xFF
Kha-bgt-hsi	Preset	1F	Preset 7 saturation	0x00-0xFF
Kha-bgt-hsi	Preset	20	Preset 7 intensity	0x00-0xFF
Kha-bgt-hsi	Preset	00	Preset 8 enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	00	Preset 8 hue	0x00-0xFF

REGISTER

Kha-bgt-hsi	Preset	01	Preset 8 saturation	0x00-0xFF
Kha-bgt-hsi	Preset	02	Preset 8 intensity	0x00-0xFF
Kha-bgt-hsi	Preset	03	Preset 9 enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	04	Preset 9 hue	0x00-0xFF
Kha-bgt-hsi	Preset	05	Preset 9 saturation	0x00-0xFF
Kha-bgt-hsi	Preset	06	Preset 9 intensity	0x00-0xFF
Kha-bgt-hsi	Preset	07	Preset A enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	08	Preset A hue	0x00-0xFF
Kha-bgt-hsi	Preset	09	Preset A saturation	0x00-0xFF
Kha-bgt-hsi	Preset	0A	Preset A intensity	0x00-0xFF
Kha-bgt-hsi	Preset	0B	Preset B enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	0C	Preset B hue	0x00-0xFF
Kha-bgt-hsi	Preset	0D	Preset B saturation	0x00-0xFF
Kha-bgt-hsi	Preset	0E	Preset B intensity	0x00-0xFF
Kha-bgt-hsi	Preset	0F	Preset C enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	10	Preset C hue	0x00-0xFF
Kha-bgt-hsi	Preset	11	Preset C saturation	0x00-0xFF
Kha-bgt-hsi	Preset	12	Preset C intensity	0x00-0xFF
Kha-bgt-hsi	Preset	13	Preset D enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	14	Preset D hue	0x00-0xFF
Kha-bgt-hsi	Preset	15	Preset D saturation	0x00-0xFF
Kha-bgt-hsi	Preset	16	Preset D intensity	0x00-0xFF
Kha-bgt-hsi	Preset	17	Preset E enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	18	Preset E hue	0x00-0xFF
Kha-bgt-hsi	Preset	19	Preset E saturation	0x00-0xFF
Kha-bgt-hsi	Preset	1A	Preset E intensity	0x00-0xFF
Kha-bgt-hsi	Preset	1B	Preset F enabled	0 = Off, 1= On
Kha-bgt-hsi	Preset	1C	Preset F hue	0x00-0xFF
Kha-bgt-hsi	Preset	1D	Preset F saturation	0x00-0xFF
Kha-bgt-hsi	Preset	1E	Preset F intensity	0x00-0xFF
Kha-bgt-kaox	Device	00	Send to device id	0x00-0xFE
Kha-bgt-kaox	Preset	01	Preset 0 enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	02	Preset 0 mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	03	Preset 1 enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	04	Preset 1 mode	0=Off, 1=Low, 2=Gradient, 3=Full

REGISTER

Kha-bgt-kaox	Preset	05	Preset 2 enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	06	Preset 2 mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	07	Preset 3 enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	08	Preset 3 mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	09	Preset 4 enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	0A	Preset 4 mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	0B	Preset 5 enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	0C	Preset 5 mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	0D	Preset 6 enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	0E	Preset 6 mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	0F	Preset 7 enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	10	Preset 7 mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	11	Preset 8 enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	12	Preset 8 mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	13	Preset 9 enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	14	Preset 9 mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	15	Preset A enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	16	Preset A mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	17	Preset B enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	18	Preset B mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	19	Preset C enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	1A	Preset C mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	1B	Preset D enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	1C	Preset D mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	1D	Preset E enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	1E	Preset E mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-kaox	Preset	1F	Preset F enabled	0 = Off, 1= On
Kha-bgt-kaox	Preset	20	Preset F mode	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-bgt-main	Device	00	Shutdown time out	0x00-0xFF (sec)
Kha-bgt-power	Device	00	Button 0 node dev id	0x01-0xEF Off
Kha-bgt-power	Device	01	Button 0 node reg addr	0x00-0xEE Off
Kha-bgt-power	Device	02	Button 1 node dev id	0x01-0xEF Off
Kha-bgt-power	Device	03	Button 1 node reg addr	0x00-0xEE Off
Kha-bgt-power	Device	04	Button 2 node dev id	0x01-0xEF Off
Kha-bgt-power	Device	05	Button 2 node reg addr	0x00-0xEE Off

REGISTER

Kha-bgt-power	Device	06	Button 3 node dev id	0x01-0xEF Off
Kha-bgt-power	Device	07	Button 3 node reg addr	0x00-0xEE Off
Kha-bgt-power	Preset	08	Preset 0 enabled	0 = Off, 1= On
Kha-bgt-power	Preset	09	Preset 0 Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	0A	Preset 0 Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	0B	Preset 0 Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	0C	Preset 0 Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	0D	Preset 1 enabled	0 = Off, 1= On
Kha-bgt-power	Preset	0E	Preset 1 Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	0F	Preset 1 Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	10	Preset 1 Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	11	Preset 1 Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	12	Preset 2 enabled	0 = Off, 1= On
Kha-bgt-power	Preset	13	Preset 2 Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	14	Preset 2 Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	15	Preset 2 Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	16	Preset 2 Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	17	Preset 3 enabled	0 = Off, 1= On
Kha-bgt-power	Preset	18	Preset 3 Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	19	Preset 3 Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	1A	Preset 3 Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	1B	Preset 3 Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	1C	Preset 4 enabled	0 = Off, 1= On
Kha-bgt-power	Preset	1D	Preset 4 Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	1E	Preset 4 Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	1F	Preset 4 Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	20	Preset 4 Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	21	Preset 5 enabled	0 = Off, 1= On
Kha-bgt-power	Preset	22	Preset 5 Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	23	Preset 5 Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	24	Preset 5 Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	25	Preset 5 Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	26	Preset 6 enabled	0 = Off, 1= On
Kha-bgt-power	Preset	27	Preset 6 Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	28	Preset 6 Button 1	0=Off, 1=On, 2=Unchanged

REGISTER

Kha-bgt-power	Preset	29	Preset 6 Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	2A	Preset 6 Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	2B	Preset 7 enabled	0 = Off, 1= On
Kha-bgt-power	Preset	2C	Preset 7 Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	2D	Preset 7 Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	2E	Preset 7 Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	2F	Preset 7 Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	30	Preset 8 enabled	0 = Off, 1= On
Kha-bgt-power	Preset	31	Preset 8 Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	32	Preset 8 Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	33	Preset 8 Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	34	Preset 8 Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	35	Preset 9 enabled	0 = Off, 1= On
Kha-bgt-power	Preset	36	Preset 9 Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	37	Preset 9 Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	38	Preset 9 Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	39	Preset 9 Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	3A	Preset A enabled	0 = Off, 1= On
Kha-bgt-power	Preset	3B	Preset A Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	3C	Preset A Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	3D	Preset A Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	3E	Preset A Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	3F	Preset B enabled	0 = Off, 1= On
Kha-bgt-power	Preset	40	Preset B Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	41	Preset B Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	42	Preset B Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	43	Preset B Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	44	Preset C enabled	0 = Off, 1= On
Kha-bgt-power	Preset	45	Preset C Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	46	Preset C Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	47	Preset C Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	48	Preset C Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	49	Preset D enabled	0 = Off, 1= On
Kha-bgt-power	Preset	4A	Preset D Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	4B	Preset D Button 1	0=Off, 1=On, 2=Unchanged

REGISTER

Kha-bgt-power	Preset	4C	Preset D Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	4D	Preset D Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	4E	Preset E enabled	0 = Off, 1= On
Kha-bgt-power	Preset	4F	Preset E Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	50	Preset E Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	51	Preset E Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	52	Preset E Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	53	Preset F enabled	0 = Off, 1= On
Kha-bgt-power	Preset	54	Preset F Button 0	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	55	Preset F Button 1	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	56	Preset F Button 2	0=Off, 1=On, 2=Unchanged
Kha-bgt-power	Preset	57	Preset F Button 3	0=Off, 1=On, 2=Unchanged
Kha-bgt-preset	Device	00	Button 0 preset code	0x00-0x0F 0xFF
Kha-bgt-preset	Device	01	Button 1 preset code	0x00-0x0F 0xFF
Kha-bgt-preset	Device	02	Button 2 preset code	0x00-0x0F 0xFF
Kha-bgt-preset	Device	03	Button 3 preset code	0x00-0x0F 0xFF
Kha-bgt-rainbow	Device	00	Send to device id	0x00-0xFE
Kha-bgt-rainbow	Preset	01	Preset 0 enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	02	Preset 0 anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	03	Preset 0 anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	04	Preset 0 anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	05	Preset 1 enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	06	Preset 1 anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	07	Preset 1 anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	08	Preset 1 anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	09	Preset 2 enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	0A	Preset 2 anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	0B	Preset 2 anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	0C	Preset 2 anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	0D	Preset 3 enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	0E	Preset 3 anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	0F	Preset 3 anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	10	Preset 3 anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	11	Preset 4 enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	12	Preset 4 anim speed	0x00-0xFF

REGISTER

Kha-bgt-rainbow	Preset	13	Preset 4 anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	14	Preset 4 anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	15	Preset 5 enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	16	Preset 5 anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	17	Preset 5 anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	18	Preset 5 anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	19	Preset 6 enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	1A	Preset 6 anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	1B	Preset 6 anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	1C	Preset 6 anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	1D	Preset 7 enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	1E	Preset 7 anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	1F	Preset 7 anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	20	Preset 7 anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	21	Preset 8 enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	22	Preset 8 anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	23	Preset 8 anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	24	Preset 8 anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	25	Preset 9 enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	26	Preset 9 anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	27	Preset 9 anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	28	Preset 9 anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	29	Preset A enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	2A	Preset A anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	2B	Preset A anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	2C	Preset A anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	2D	Preset B enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	2E	Preset B anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	2F	Preset B anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	30	Preset B anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	31	Preset C enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	32	Preset C anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	33	Preset C anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	34	Preset C anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	35	Preset D enabled	0 = Off, 1= On

REGISTER

Kha-bgt-rainbow	Preset	36	Preset D anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	37	Preset D anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	38	Preset D anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	39	Preset E enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	3A	Preset E anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	3B	Preset E anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	3C	Preset E anim enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	3D	Preset F enabled	0 = Off, 1= On
Kha-bgt-rainbow	Preset	3E	Preset F anim speed	0x00-0xFF
Kha-bgt-rainbow	Preset	3F	Preset F anim width	0x00-0xFF
Kha-bgt-rainbow	Preset	40	Preset F anim enabled	0 = Off, 1= On
Kha-gateway-usb	Device	00	Print Proto	0=Off, 1=On
Kha-gateway-usb	Device	01	Print Human	0=Off, 1=On
Kha-led-ikea-node	Device	00	LED Selection	0=Off, 1=Low, 2=Gradient, 3=Full
Kha-led-ikea-node	Device	01	Show Identification	1=trigger once
Kha-led-ikea-node	Device	02	LED Amount	0x00-0xFF
Kha-led-ikea-node	Device	03	LED Orientation	0 = None, 1 = Vertical, 2 = Horizontal
Kha-led-ikea-node	Device	04	LED Low Cut	0x00-0xFF
Kha-led-ikea-node	Device	05	Animation Location	0x00-0xFF
Kha-led-strip	Device	00	LED Selection	0=Off, !0=Full
Kha-led-strip	Device	01	Amount	0-240 Leds
Kha-led-strip	Device	02	Communication	0 = APA102, 1 = WS2814
Kha-led-strip	Device	03	Intensity Max	0x00-0xFF
kha-relay-2x3-node	Device	00	Socket 0 enabled	0=Off, 1=On
kha-relay-2x3-node	Device	01	Socket 1 enabled	0=Off, 1=On
kha-relay-2x3-node	Device	02	Socket 2 enabled	0=Off, 1=On
kha-relay-2x3-node	Device	03	Socket 3 enabled	0=Off, 1=On
kha-relay-2x3-node	Device	04	Socket 4 enabled	0=Off, 1=On
kha-relay-2x3-node	Device	05	Socket 5 enabled	0=Off, 1=On
kha-relay-2x3-node	Device	06	Socket 0 power-off timer	0x01-0xFF (min) 0x00 = Off
kha-relay-2x3-node	Device	07	Socket 1 power-off timer	0x01-0xFF (min) 0x00 = Off
kha-relay-2x3-node	Device	08	Socket 2 power-off timer	0x01-0xFF (min) 0x00 = Off
kha-relay-2x3-node	Device	09	Socket 3 power-off timer	0x01-0xFF (min) 0x00 = Off
kha-relay-2x3-node	Device	0A	Socket 4 power-off timer	0x01-0xFF (min) 0x00 = Off
kha-relay-2x3-node	Device	0B	Socket 5 power-off timer	0x01-0xFF (min) 0x00 = Off

ADDR ALLOCATED

ADDR	Group	Device	Comment
E1	00	Kha-gateway-usb	Connected to machariel.qnet
E0	00	Kha-gateway-usb	Connected to blacksheep.qnet
D1	00	Kha-remote	
D0	00	Kha-main	
C7	F5	Kha-led-strip	Desk
C6	F5	Kha-led-strip	Bed
C5	F4	kha-relay-2x3-node	South
C4	F4	kha-relay-2x3-node	North
C3	F1	Kha-led-ikea-node	East Oxberg
C2	F1	Kha-led-ikea-node	North Kallax
C1	F1	Kha-led-ikea-node	West Oxberg
C0	F1	Kha-led-ikea-node	South Kallax
BC	F3	Kha-bgt-power	Strip
BB	00	Kha-bgt-preset	
BA	00	Kha-bgt-rainbow	
B9	00	Kha-bgt-hsi	
B8	00	Kha-bgt-kaox	
B7	00	Kha-bgt-guru	
B6	00	Kha-bgt-dark	
B5	F3	Kha-bgt-power	Misc
B4	F3	Kha-bgt-power	Projects
B3	F3	Kha-bgt-power	Lights
B2	F2	Kha-bgt-audio	Audio Out
B1	F2	Kha-bgt-audio	Audio In
B0	00	Kha-bgt-main	

REGISTER SETUP

Module	Commands	
Kha-bgt-audio	F2DF	Wipe
	B1D50301000100000000100000000000	
	B2D50301000100010101000000000000	
	F2DE	Save
Kha-bgt-dark	B6DF	Wipe
	B6D5000100	Preset 0 off: Off
	B6D5060100	Preset 3 TV: Off
	B6DE	Save
Kha-bgt-guru	B7DF	Wipe
	B7D500FF	Broadcast to FF
	B7D5010B	Broadcast every 11 minutes
	B7DE	Save
Kha-bgt-hsi	B9DF	Wipe
	B9D500FF	Send to FF
	B9D505010000FF	Preset 1 shutdown: no saturation, full intensity
	B9D5090100FFFF	Preset 2 party: full saturation, full intensity
	B9D50D010000FF	Preset 3 tv: no saturation, full intensity
	B9DE	Save
Kha-bgt-kaox	B8DF	Wipe
	B8D500F1	Send to F1
	B8D5010100	Preset 0 off: Off
	B8D5030101	Preset 1 shutdown: Low
	B8D5050103	Preset 2 party: Full
	B8D5070101	Preset 3 TV: Low
	B8D5090100	Preset 4 tinker: Off
	B8D50B0100	Preset 5 pc: Off
	B8DE	Save
Kha-bgt-main	B0DF	Wipe
	B0D50096	Timeout 150sec for shutdown
	B0DE	Save

REGISTER SETUP

Kha-bgt-power	F3DF	Wipe
	B3D5000000C400C504C500	
	B3D508010200000001020000000102000000	
	B4D500C404C403C402C401	
	B4D508010000000001000000000101020202	
	B5D500C502C503C505C501	
	B5D508010000000001000000000101020202	
	BCD50000000000C700C600	Save
	BCD50801000000000100000001010000010	
Kha-bgt-preset	F3DE	
	BBDF	Wipe
	BBD50002030405	Set presets to party, tv, tink, pc
Kha-bgt-rainbow	BBDE	Save
	BADF	Wipe
	BAD500FF	Send to FF
	BAD50101000000	Preset 0 off: Off
	BAD50501000000	Preset 1 shutdown: Off
	BAD50901FF2001	Preset 2 party: Full
	BAD50D01000000	Preset 3 TV: Off
	BAD51101000000	Preset 4 tink: Off
	BAD51501000000	Preset 5 pc: Off
Kha-gateway-usb	BADE	Save
	E0DF	Wipe
	E0D5000100	Print Proto
	E0DE	Save
	E1DF	Wipe
	E1D5000001	Print Human
Kha-led-ikea-node	E1DE	Save
	F1DF	Wipe
	C0D500000002020200	Set Amount, Orientation, Low Cut, Location
	C1D500000008010302	Set Amount, Orientation, Low Cut, Location
	C2D500000002020203	Set Amount, Orientation, Low Cut, Location
	C3D500000008010305	Set Amount, Orientation, Low Cut, Location
	F1DE	Save

REGISTER SETUP

Kha-led-strip

F5DF
C6D500 000A01FF
C7D500 00680097
F5DE

kha-relay-2x3-node

F4DF
C5D50714
C5D50B14
F4DE

Wipe

Bed

Desk

Save

Wipe

Socket 1 label printer 20 minutes

Socket 5 printer 20 minutes

Save

MPLab MCC Build

NVM	NVM	Generate Flash APIs
NVM	NVM	Generate EEPROM APIs
NVM	NVM	Generate Signature Row APIs
Timer	Delay	
Timer	RTC	PIT Enable
Timer	RTC	RTC Clock Cycles 8
Timer	RTC	Periodic Interrupt Enable
UART	UART0	500000
UART	UART0	Interrupt Driven
UART	UART0	128 / 512
System	CLKCTRL	24Mhz
System	Configuration Bits	Bootsize 32
System	Configuration Bits	Device used in single supply configuration
System	Configuration Bits	Watchdog Timeout Period 4k / 4s
System	Interrupt Manager	RXC
System	Interrupt Manager	RSX
System	Pins	PA 0,1,3 USART0
System	RSTCTRL	Software Reset Enable
System	WDT	Lock

Building: Execute before build: ..\..\tools\kha-timestamp\kha-timestamp.bat

GCC Optimize -s

avr-ld: Additional: -Ttext=0x4000

add kha_version.h

kha-relay-2x3

Node	ID	Box Label	Box Color	Connected	Timer
C4	0	1	Green	Light Couch	
C4	1	2	Green	LED Marquee	
C4	2	3	Green	NFL	
C4	3	1	Gray	Floppy	
C4	4	2	Gray	Projects	
C4	5	3	Gray	-	
C5	0	1	Yellow	Light PC	0x14
C5	1	2	Yellow	Label Printer	
C5	2	3	Yellow	Soundbar	
C5	3	1	Red	Lab Power Supply	0x14
C5	4	2	Red	Light Bench	
C5	5	3	Red	Printer	