

CBS Monitor Command Set

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The monitor would allow full control and monitoring of the CBS via the serial port by typing or transmitting commands via ASCII characters. All commands would be ASCII char type so the commands could be typed from a terminal attached to the serial port. This would allow both manual and automatic control.

Operation would be patterned after the [Hayes command set](#) developed for analog modems.

When to activate monitor?

- Maybe during first 3 seconds when receiving an "Activate Monitor Mode **[AMMI]**"
 - Or activate by "+++"
- Activation in programming mode?
- After activation, monitor is enabled until it is disabled (**DMM**) or power is removed

Behavior

- Commands should be **Case Sensitive** for ease of programming
- The UUT should ECHO all ASCII input received
- Commands should begin with a "\$" and end with "(cr)"
- On boot, the "List commands" function is executed
- A command should receive a response to a request
 - **[OK(cr)]** for a command received and executed
 - **ERROR [x]** for a command received and NOT executed [1] would be the reason
 - [x]
 - ILLEGAL
 - SYNTAX

Purpose & Completion

- Indicates when the command/input/output/mode is implemented
- I added a column to display the completion of commands and the purpose of the command
 - **(High) ALL - fundamental to ALL types of operations.**
 - **(Medium) PCB** - necessary for the PCB build functional testing and system documentation
 - **(Low) System** - necessary for Automated and Unattended System Testing

Questions to ponder:

- How much space is there in EEPROM (**256 bytes**)
- How much code space is available (**40 Kbytes**)
- How is data stored in EEROM
 - Can we add data without interfering with existing data
 - The memory map/structure has to be maintained to be backwardly compatible with existing App
- How to work with UUT serial port receive/transmit
 - How buffer is implemented?

Complete?	S	Command (CR de-limiter)	Data Bytes (type = char) (ends in CR)	Example
		[\$] Attention	Response (OK)	\$(cr) -> OK(cr)
<input checked="" type="checkbox"/> ALL		[?]	Prints list of commands and features enabled	\$(cr) -> list
<input type="checkbox"/> System		[A(MODE)] Activate Mode		ABS(cr) -> OK(cr) activate R Basket Solenoid
<input checked="" type="checkbox"/> ALL		[A(OUTPUT)] Activate Output		\$ABS(cr) -> OK(cr) activate R Basket Solenoid
<input type="checkbox"/> System		[A(OUTPUT)x] Activate Output for x seconds	x = # seconds active	\$ABS3(cr) -> OK(cr) activate R Basket Solenoid for 3 seconds then retract
<input type="checkbox"/> System		[D(MODE)] Deactivate Mode	n/a	\$DMM(cr) -> OK(cr) disable Monitor Mode
<input type="checkbox"/> ALL		[D(OUTPUT)] Deactivate Output		\$DBS(cr) -> OK(cr) retract R Basket Solenoid \$DBs(cr) -> OK(cr) retract L Basket Solenoid
<input checked="" type="checkbox"/> ALL		[R] Reboot	n/a	\$R
<input checked="" type="checkbox"/> ALL		[STOP] or [S] Stop or deactivate all outputs	n/a	\$STOP(cr) \$s(cr)
<input type="checkbox"/> ALL		[STx] Set Timer x = seconds	Outputs T1 when active, To when inactive Used to check clock accuracy	\$STg - set timer for g seconds
<input type="checkbox"/> System		[CAL] start CALibrate of System		\$CAL - calibrate
<input type="checkbox"/> ALL		[X] exit Monitor Mode		
		Get System Information	Display to serial port	
<input checked="" type="checkbox"/> ALL		[GEC] Get all Error Codes in buffer		\$GEC(cr) = > dump Error Code buffer to SP
<input checked="" type="checkbox"/> ALL	#	[GS] Get INPUT State	GS - Get all current Input states and send to SP	\$GS(cr) -> Bob0F1L1R1T100Ft218(cr)
<input checked="" type="checkbox"/> ALL		[GMN] Get Model Number of System	CBS 2142	
<input checked="" type="checkbox"/> ALL		[GVA] Get Version for Application	3.0.14e	
<input checked="" type="checkbox"/> ALL		[GVBI] Get Version for Bootloader	1.0.20	
<input type="checkbox"/> PCB		[GDBPI] Get Date of Build of PCB		
<input type="checkbox"/> PCB		[GPNPI] Get Part Number of PCB		
<input type="checkbox"/> PCB		[GSNPI] Get Serial Number of PCB		
<input type="checkbox"/> Service		[GDLS] Get Date of Last Service		
<input type="checkbox"/> System		[GSx] Get INPUT State x = C output display to SP on change = # output status to SP every X seconds X - character	GSC - update display on input change GS5 - update display every 5 seconds	
<input type="checkbox"/> System		[GDSB] Get Date for Build of System		
<input type="checkbox"/> System		[GPNS] Get Part Number of System		
<input type="checkbox"/> System		[GSNS] Get Serial Number of System		

<input type="checkbox"/> System	[GECx] Get Error Code x (x = 1-8)		\$GEC1(cr) = > dump ERROR Code in Location 1
<input type="checkbox"/> System	[GRx] Get Recipe x (x = 1-4)		
<input type="checkbox"/> System	[GLS] Get Logo Status	Info about logo...is a custom logo loaded?	
<input type="checkbox"/> System	[GCNTR] Get Counters Data	Send Display of Counters to SP	
<input type="checkbox"/> System	[GCAL] Get Calibration Data	Send Display of Calibration to SP	
<input type="checkbox"/> ALL	[GCRT] Get Counters Total		
ALL	[GCRI] Get Counters Resettable		
	Commands which store/modify data in EEPROM	Data string	EE Rom (bytes) additional storage (Newly Allocated = 3*8*4*15=84)
<input type="checkbox"/> System	[STF] Set Temperature scale to Fahrenheit		Already designated
<input type="checkbox"/> System	[STC] Set Temperature scale to Centigrade		Already designated
<input type="checkbox"/> PCB	[SDBP] Set Date for Build of PCB	20161231 (8)	X (8)
<input type="checkbox"/> System	[SDBS] Set Date for Build of System	20161231 (8)	X (8)
<input type="checkbox"/> Service	[SDLs] Set Date of Last Service	20161231 (8)	X (8)
<input checked="" type="checkbox"/> ALL	[SECC] Set all Error Codes to Clear	n/a	Already designated
<input type="checkbox"/> PCB	[SPNP] Set Part Number of PCB	1051.00020.00 (4*1+5*1+2=13)	X (15)
<input type="checkbox"/> System	[SPNS] Set Part Number of System		X (15)
<input type="checkbox"/> System	[SRx] Set Recipe x (x = 1-4)		Already designated
<input type="checkbox"/> PCB	[SSNP] Set Serial Number of PCB		X (15)
<input type="checkbox"/> System	[SSNS] Set Serial Number of System		X (15)
<input type="checkbox"/> ALL	[SMNS] Set Model Number of System, Reset Default Values, and Reboot	CBS 2142	Already designated

	MODE (caps) -> refers to right (small) -> refers to left	Symbol (2 chars)	o - Disable, 1 - Activate, null - Activate	Example
<input type="checkbox"/> ALL	Monitor Mode	MM		\$AMM(cr) -> OK(cr) Activates Monitor Mode \$DMM(cr) -> OK(cr) Disables Monitor Mode
<input type="checkbox"/> PCB	Calibrate Touch Screen	TS		\$ATS(cr) -> OK(cr) activates TP calibration
<input type="checkbox"/> ALL	Welcome Screen	WS		\$AWS(cr) -> OK(cr) - activates Welcome screen
<input type="checkbox"/> System	Programming Screen Mode	PM		\$APM(cr) -> OK(cr) Activates Program Mode \$DPM(cr) -> OK(cr) Disable Program Mode
<input checked="" type="checkbox"/> ALL	Manual Control	MC		
<input type="checkbox"/> System	Brew Monitor R	BM	Output Right Brew Status to SP	\$ABM(cr) -> OK(cr) Activates Brew R Monitor \$DBM(cr) -> OK(cr) Disables Brew R Monitor
System	Brew Monitor L	bm	Outputs Left Brew Status to SP	\$Abm(cr) -> OK(cr) Activates Brew L Monitor \$Dbm(cr) -> OK(cr) Disables Brew L Monitor
<input type="checkbox"/> System	Brew R x (x= 1-4)	Bx	X = 0,1,2,3,4 (1-4 refers to recipe) 0 - cancel Brew on Right	\$AB1(cr) -> OK(cr) Activates Right Brew 1 recipe \$AB2(cr) -> OK(cr) Activates Right Brew 2 recipe \$AB3(cr) -> OK(cr) Activates Right Brew 3 recipe \$AB4(cr) -> OK(cr) Activates Right Brew 4 recipe \$DB1(cr) -> OK(cr) Disable Right Brew \$DB2(cr) -> OK(cr) Disable Right Brew \$DB3(cr) -> OK(cr) Disable Right Brew \$DB4(cr) -> OK(cr) Disable Right Brew
<input type="checkbox"/> System	Brew L x (x= 1-4)	bx	X = 0,1,2,3,4 (1-4 refers to recipe) 0 - cancel Brew on Right	\$Ab1(cr) -> OK(cr) Activates Left Brew 1 recipe \$Db1(cr) -> OK(cr) Disable Left Brew
	OUTPUTS (2 chars) (caps) -> refers to right (small) -> refers to left	Symbol (2 chars)	Data (o - disable, 1 - activate)	Example
<input type="checkbox"/> ALL	Basket Solenoid L	bs	0/1	\$Abs(cr) -> OK(cr) Activate L Solenoid \$DBs(cr) -> OK(cr) Disable/retract L Solenoid
<input type="checkbox"/> ALL	Basket Solenoid R	BS	0/1	\$ABS(cr) -> OK(cr) activate R Solenoid \$DBS(cr) -> OK(cr) retract R Solenoid
<input type="checkbox"/> ALL	Brew Valve L	bv	0/1	
<input type="checkbox"/> ALL	Brew Valve R	BV	0/1	
<input type="checkbox"/> ALL	Bypass Valve L	by	0/1	
<input type="checkbox"/> ALL	Bypass Valve R	BY	0/1	
<input type="checkbox"/> ALL	Fill Valve	FV	0/1	
<input type="checkbox"/> ALL	Heater	HH	0/1	
<input type="checkbox"/> ALL	Temperature Control	TC	0/1	
	INPUTS (1 char) (caps) -> refers to right (small) -> refers to left	Symbol (1 chars)	Data Output to SP (o - inactive, 1 - active, x - n/a)	Example
<input checked="" type="checkbox"/> ALL	Status	S	List all INPUTS/state for all input in alphabetical order	\$GS(cr) -> BoboF1L1R1T100Ft218S0(cr)
<input checked="" type="checkbox"/> ALL	Brew Basket R	B	0/1 Bo (Brew Basket Out) ,B1 (Brew Basket In)	
<input checked="" type="checkbox"/> ALL	Brew Basket L	b	0/1 bo (Brew Basket Out) ,b1 (Brew Basket In)	
<input type="checkbox"/> ALL	Fill	F	0/1 Fo (not Full) ,F1 (water tank Full)	
<input checked="" type="checkbox"/> ALL	Liquid Level High	L	0/1 Lo (liquid Level low) ,L1 (liquid level high)	
<input checked="" type="checkbox"/> ALL	Liquid Level ADC output	l	ADC reading	
<input type="checkbox"/> ALL	Ready Status	R	0/1 R0 (not Ready), R1 (Ready)	
<input checked="" type="checkbox"/> ALL	Temperature	T	Degrees Centigrade (4 bytes) 100C	
<input checked="" type="checkbox"/> ALL	Temperature ADC output	t	A/D value (2 bytes)	????

ALL	SD Card	S	0 - no card, 1card inserted	
	Counters			
<input type="checkbox"/> ALL	Brew Count R	BC	Long integers	
<input type="checkbox"/> ALL	Brew Count L	bc		
<input type="checkbox"/> ALL	Brew Activations R	BA		
<input type="checkbox"/> ALL	Brew Activations L	bA		
<input type="checkbox"/> ALL	Brew Valve Volume R (l)	BV		
<input type="checkbox"/> ALL	Brew Valve Volume (l)	bv		
<input type="checkbox"/> ALL	Bypass Activations R	YA		
<input type="checkbox"/> ALL	Bypass Activations L	ya		
<input type="checkbox"/> ALL	Bypass Volume R (l)	YV		
<input type="checkbox"/> ALL	Bypass Volume L (l)	yv		
<input type="checkbox"/> ALL	Fill Valve Activation	FA		
<input type="checkbox"/> ALL	Fill Valve Volume	FV		
<input type="checkbox"/> ALL	Heater Activations	HA		
<input type="checkbox"/> ALL	Heater Time	HT		