Command Set CenSon   0,6

COM Settings:

Baudrate:	**9600**
Databit:	**8**
Parity:	**none**
Stop Bit	**1**
Handshake:	**OFF**

From PC to Device — Answer — Info

CMD	Frame	Params	Unit	Range	Ack1	Ack2	Timeout	Action	Behaviour
General									
#DEVINI_T0 `<CR>`	-	-	-	Ack-	INI	60s	Washer: ~6sec, Centrifuge: ~8sec	
Sonicator (positioning):									
#SONPOS_W0 `<CR>`	-	-	-	Ack-	SPW	30s	Move arm to wash pos.	
#SONPOS_Sn `<CR>`	n=[1..100]	mm	1-100mm	Ack-	SPS	30s	Move arm to sonic pos.first, then dive-in n [mm]	locked
Sonicator (sonification):									
#SONSNC_Pn `<CR>`	n=[1..255]	0.1 sec	0.1-25.5s	Ack-	SSP	30s	Sonicate in probe for [n] 1/10seconds	unlocked
#SONSNC_Wn `<CR>`	n=[1..255]	0.1 sec	0.1-25.5s	Ack-	SSW	30s	SONSNC_W10 = WashPump 1sec	unlocked
Centrifuge (positioning):									
#CENPOS_P1 `<CR>`	-	-	-	Ack-	CP1	20s	Present position 1	locked
#CENPOS_P2 `<CR>`	-	-	-	Ack-	CP2	20s	Present position 2	locked
Centrifuge (centrifugation):									
#CENSET_Sn `<CR>`	n=[10..100]	10 rot/min	100-1000rot	Ack-	CSS	10s	Set rotation speed in steps of 100 [100, 200, … 1000]	
#CENRUN_Tn `<CR>`	n=[1..180]	10 sec	10s - 30min	Ack-	CRUN	300s	Start centrifugation for [n] seconds	
#CENSTA_T0 `<CR>`	-	-	-	Ack-	CRDY	no	Centrifuge is ready for tube transfers (safe)	
						BUSY		Centrifuge is busy with CENRUN_Dn	
#CENRUN_Dn `<CR>`	n=[1..180]	10 sec	10s - 30min	Ack-		no	No timeout, no second acknowledge	unlocked
else					**Ack-**	**Err**		Any missmatch in commands returns Err	

Start Behaviour

-After power on, the device does automaticaly init the sonic arm and moves the centrifuge to position 1

-The Sonic arm should always be centered over the wash station before power on the system! (ZeroPoint reference)

-Starting and initializing EVOware sends automatically a init command to all devices, in this case the command: DEVINI_T0

Timeout

-Timeouts are handled on the PIPMOD driver side. If no matching acknowledge combination can be catched within the specified timeout,
then the driver will report an error to EVOware. Not yet for all commands

Command Behaviour

-After sending a command, there is a immediate response with Ack1 (see list above)

-When the command is done, a second Acknowledge is sent: Ack2

-The controller is quiet during this time, no statuscheck or other commands can be used until the second acknowledge is finished

-EXCEPTION: the SONSNC_xx commands are unlocked, so the z pos can be changed during sonification

Revision 0.6

-new command added to allow centrifuge to run parallel

-Status command extended med BUSY