PM5639 Survey of commands:

Command description	Syntax	Remarks
Take measurement	TM	Transmit one set of measurement data: Return format in **XY-mode**: X,Y,Z<CR> where X, Y and Z are CIE 1931 XYZ-values. Return format in **MB-mode**: RGB*XX.XX*YY.YY*ZZ.ZZ*<CR><LF> or RGB*XXXX *YYYY *ZZZZ *<CR><LF> or RGB* 0 * 0 * 0 *<CR><LF> where X, Y and Z are CIE 1931 XYZ-values. Return format in **MX-mode**: nX,nY,nZ,INT_TIME<CR> where nX, nY and nZ are measured values directly from the sensors, (compensated for errors in DC-offset etc.). INT_TIME is a value between 2.5 and 25.0 and specifies the integration time in units of 2.0ms, (this integration time can also be obtained by issuing the command "F?").
Measure continuously	MC	Transmit data continuously in present measuring mode. See command "TM" above for return format.
Measure stop	MS	Stops transmission of data immediately.
Select CIE XYZ mode	XY	Selects transmission of CIE 1931 XYZ-values.
Select CIE XYZ mode*	MB	Selects transmission of CIE 1931 XYZ-values in Barco/Thoma output format.
Select sensor mode	MX	Selects transmission of unmodified sensor output.
Set integration time	SI n	SI n specifies the number of measurements the Colour Sensor handles per second. The parameter n is expressed in units of 0.2ms where n = 250 gives app. 3 measurements/second, while n = 25 gives app. 10 measurements/second, (25 <= n <= 250). Default value is 250, ie. app. 3 measurements/second. To calculate the number of measurements/second the equation below can be used as a guideline: measurements/second = 1000/(1.2*n+60))
Get integration time	F?	Get integration time. Return format: n<CR> Get integration time gets the actual integration time in the Color Sensor. The integration time is a value between 2.5 and 25.0, ie. the return value is specified in units of 2.0ms. (Note that this is 10 times smaller than the value used to set the integration time with, see above).

Identity request	I?	The ID-string of the sensor: Return format: CP,NO,KU,SW<CR> where CP is the company, NO is the type number, KU is the serial number and SW is the software revision. eg. "PTV,400810979300,KU030001,02.1"
Memory address	MA n	Select address for read/write of serial E^2PROM data.
Read memory	RM	Read E^2PROM-data, where address is specified by command MA. Address is auto incremented.
Store memory	SM n	Write E^2PROM-data, where address is specified by command MA. Address is auto incremented.
Read binary numbers	RN n	Reads n+1 bytes from E^2PROM, in binary form, where address is specified by MA. Address is auto incremented by n. The command is ended by sending a checksum-byte, (low byte of addition of n bytes). For n: $0 < n <= 255$.
Fix gain	FG n	Select gain, ie. one of 6 gain-areas to be used to "amplify" the signal from the sensors, (n: $0 <= n <= 5$). Setting n to 255 will release a fixed gain area.
Measure DC-offset	MO	Measure DC-offset in CRT Colour Sensor. Values will always be calculated when this command is issued. The result however will only be stored if WRITE-protection is off. The 6 DC offset values will also be transmitted to the software controlling the sensor.
Show DC-offset	SO	Shows the DC-offset count to be subtracted in present gain. To get back in normal mode use "NR".
Show true sensor count	ST	Shows the direct count from the A/D-converter. To get back in normal mode use "NR".
Normal mode	NR	Force the CRT Colour Sensor in normal mode i.e. MX-mode.
Calculate Checksum	CS	Calculate the program checksum.
Set Baud rate	SB n	Change baud rate to n: 48, (4800baud), 96, (9600baud) or 192, (19200baud). **NOTE**: This command does not apply to all available sensors.
Write protection	WR n	Two bytes in the E^2PROM must both contain $0FF_{HEX}$ to write in the write-protected memory. If only ONE BIT is cleared in any of these two bytes the E^2PROM is write-protected. Both these byte are located in the write-protected memory. The E^2PROM contain $0FF_{HEX}$ from the factory thereby setting the write-protection OFF during first time calibration. To initialise write protection, i.e. reset the two bytes in the E^2PROM use the command: **WR0;** To suspend write protection, ie. set the two bytes to $0FF_{HEX}$, issue the following command sequence exactly as shown below: **MS;WR79;WR102;WR102**