

CentipedeManager.h

```
typedefs
std::array<uint16_t, N_CP_PORTS>: CP_Masks

const N_CP_PORTS = 8: uint8_t
```

<struct> CP_Address

```
+port: uint8_t
+bit : uint8_t
```

CentipedeManager

```
-cp_      : Centipede
-masks_   : CP_Masks

+CentipedeManager()
+begin()
+clear_masks()
+add_to_masks(CP_Address)
+set_masks(CP_Masks)
+get_masks(): CP_Masks
+report_masks(Stream &)
+send_masks()
```

constants.h

```
const NUMEL_PCS_AXIS = 15 : uint8_t
const NUMEL_LED_AXIS = 16 : uint8_t
const N_VALVES       = 112 : uint8_t
```

```
const PC2VALVE[][] : uint8_t
const PC2LED[][]   : uint8_t
const VALVE2CP_PORT[] : uint8_t
const VALVE2CP_BIT[] : uint8_t
const VALVE2PC[][] : int8_t
```

```
const N_LEDS : uint16_t
const PIN_LED_MATRIX : uint8_t
const PIN_R_CLICK_1 : uint8_t
const PIN_R_CLICK_2 : uint8_t
const PIN_R_CLICK_3 : uint8_t
const PIN_R_CLICK_4 : uint8_t
const R_CLICK_1_CALIB : RT_Click_Calibration
const R_CLICK_2_CALIB : RT_Click_Calibration
const R_CLICK_3_CALIB : RT_Click_Calibration
const R_CLICK_4_CALIB : RT_Click_Calibration
const DAQ_DT : uint32_t
const DAQ_LP : float
```

<struct> Omega_Calib

```
+balance_mA : float
+sensitivity_mA : float
+full_range_bar : float
```

```
const OMEGA_1_CALIB : Omega_Calib
const OMEGA_2_CALIB : Omega_Calib
const OMEGA_3_CALIB : Omega_Calib
const OMEGA_4_CALIB : Omega_Calib
```

```
mA2bar(float, Omega_Calib): float
```

ProtocolManager.h

```
typedefs
std::array<PC, MAX_COORDS_PER_PROTO_LINE> : ProtoLine
std::array<uint16_t, NUMEL_PCS_AXIS> : PackedProtoLine
std::array<PackedProtoLine, MAX_PROTO_LINES> : ProtoProgram
```

```
const PC_NULL = -128 : int8_t
const MAX_COORDS_PER_PROTO_LINE
= NUMEL_PCS_AXIS * NUMEL_PCS_AXIS : uint16_t
const MAX_PROTO_LINES = 5000 : uint16_t
(↑ make as large as free RAM allows)
```

PC ("ProtocolCoordinate")

```
+x: int8_t
+y: int8_t

+PC(int8_t = PC_NULL, int8_t = PC_NULL)
+isNull()
+print(Stream &)
```

```
pc2valve(PC) : uint8_t
pc2led(PC) : uint8_t
valve2cp(uint8_t) : CP_Address
valve2pc(uint8_t) : PC
init_valve2pc()
```

ProtocolManager

```
-program_ : ProtoProgram
-N_program_lines : uint16_t
-current_pos_ : uint16_t

+ProtocolManager()
+clear()
+pack_and add(ProtoLine): PackedProtoLine
+unpack()
```

```
OPTIONAL?
+add(ProtoLine)
```