FWS-Auto DLL Programming Manual

1. Function return value

DLL internal declaration

```
enum Polymsg:int
  {
     MSG_NO_ERROR = 0,
     MSG_DEVICE_SEARCHING = 1,
     MSG_CONNECTION_OK = 2,
     MSG_SET_WAVE_OK =3,
     MSG_DEVICE_INIT = 4,
     MSG_DEVICE_BUSY = 5,
     MSG_DEVICE_READY = 6,
     MSG_DEVICE_CLOSE_PORT = 10,

     ERR_DEVICE_NOT_FOUND = -1,
     ERR_DEVICE_FILE_NOT_FOUND = -2,
     ERR_DEVICE_FILE_ERROR = -3,
     ERR_DEVICE_NOT_READY = -4,
     ERR_DEVICE = -5,
     ERR_DEVICE_ERROR_MODEL_NO = -6,
     ERR_DEVICE_ERROR_SERIAL_NO = -7,
     ERR_DEVICE_ERROR_WAVE_RANGE = -8,
     ERR_DEVICE_NOTCONNECTED = -9,

     ERR_COMM_CONN_ERROR = -11,
     ERR_COMM_CONN_LOST = -12,
     ERR_COMM_TIMEOUT = -13,
     ERR_COMM_ERROR = -14,

     ERR_NOT_FOUND_WAVE = -21,
     ERR_SET_WAVE_ERROR = -22,
  }
```

MSG_NO_ERROR = The command has been executed properly.
MSG_DEVICE_SEARCHING = Searching for device.
MSG_CONNECTION_OK = Device is connected.
MSG_SET_WAVE_OK = Successfully changed CWL and FWHM.
MSG_DEVICE_INIT = Device is initializing.
MSG_DEVICE_BUSY = Device is busy.
MSG_DEVICE_READY = Device is ready.
MSG_DEVICE_CLOSE_PORT = Device is not ready.

ERR_DEVICE_NOT_FOUND = Device not found.
ERR_DEVICE_FILE_NOT_FOUND = Calibration file not found.
ERR_DEVICE_FILE_ERROR = Calibration file error.
ERR_DEVICE_NOT_READY = Device is busy.
ERR_DEVICE = Communication error.
ERR_DEVICE_ERROR_MODEL_NO = Calibration file and model number doesn't match.
ERR_DEVICE_ERROR_SERIAL_NO = Calibration file and serial number doesn't match.
ERR_DEVICE_ERROR_WAVE_RANGE = Calibration file and wavelength range doesn't match.
ERR_DEVICE_NOTCONNECTED = Device is not connected.
ERR_COMM_CONN_ERROR = Communication error.
ERR_COMM_CONN_LOST = Device disconnected.
ERR_COMM_TIMEOUT = Communication timeout.
ERR_COMM_ERROR = Communication command internal error.
ERR_NOT_FOUND_WAVE = Wavelength out of range.
ERR_SET_WAVE_ERROR = Returning of error for GetCurrentWavelength due to absence of Set wavelength because of SetWavelength command error

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Poly commands

int PolyConnect(string path);
- Parameters
  path : Path and location of calibration file
- Return Value
  MSG_NO_ERROR
  ERR_COMM_ERROR
  ERR_DEVICE_ERROR_MODEL_NO
  ERR_DEVICE_ERROR_SERIAL_NO
  ERR_DEVICE_ERROR_WAVE_RANGE
  ERR_DEVICE_NOT_FOUND
  ERR_DEVICE_FILE_NOT_FOUND
  ERR_DEVICE_FILE_ERROR
- Remark
  Use the calibration file to activate the port then connect

2. int Disconnect();
- Parameters
- Return Value
  MSG_DEVICE_CLOSE_PORT
  ERR_COMM_TIMEOUT
  ERR_COMM_ERROR
- Remark
  Stop communication and close port.

3. int GetDeviceStatus();
- Parameters
- Return Value
  MSG_DEVICE_INIT
  MSG_DEVICE_BUSY
  MSG_DEVICE_READY
  ERR_COMM_CONN_LOST
  ERR_DEVICE_NOTCONNECTED
- Remark
  Read the current status of the device.

4. bool GetDeviceEnabled();
- Parameters
- Return Value
  True : Port is open and device is connected.
  False : Port is closed or device is not connected.
- Remark
  Check the connection status of the device.

5. string GetComPortNumber();
- Parameters
- Return Value
  COM port String return
- Remark
  Read the connected COM port

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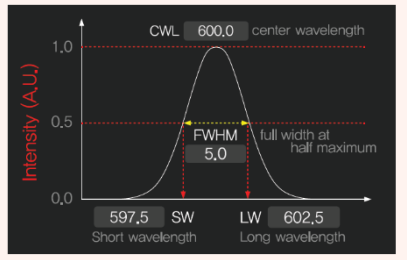
6. int GetInforData(ref string model, ref string serial, ref string range);
 - Parameters
  model : Model number of device
  serial : Serial number of device
  range : Wavelength tuning range
 - Return Value
  MSG_NO_ERROR
  ERR_DEVICE_NOTCONNECTED
 - Remark
  Reads the model number, serial number or wavelength tuning range of the connected device.

7. int SetWavelength(string CW, string FWHM);
 - Parameters
  CW : Center wavelength
  FWHM : Bandwidth
 - Return Value
  MSG_NO_ERROR
  ERR_NOT_FOUND_WAVE
  ERR_DEVICE_NOT_READY
  ERR_DEVICE_NOTCONNECTED
 - Remark
  Changes to the input wavelength (CW) and bandwidth (FWHM).
  If ERR_NOT_FOUND_WAVE is returned, then
  GetStringMsg command is used to return the CW/FWHM values as string values which caused the error.

8. int GetCurrentWavelength(ref string sw, ref string cwl, ref string lw, ref string fwhm);
 - Parameters
  sw : short wavelength
  cw : center wavelength
  lw : long wavelength
  fwhm: bandwidth



 - Return Value
  MSG_NO_ERROR
  ERR_DEVICE_NOTCONNECTED
 - Remark
  Reads the set CW, SW, LW, FWHM

9. int GoBlankPosition();
 - Parameters
 - Return Value
  MSG_NO_ERROR
  MSG_DEVICE_BUSY
  ERR_DEVICE_NOT_READY
  ERR_DEVICE_NOTCONNECTED
 - Remark
  Moves to blank position. Empty position. No filtering.

10. int ScanWavelength(double start, double end, int fwhm, double step, double delay);
 - Parameters
  start : Start wavelength
  end : End wavelength
  fwhm : bandwidth
  step : step size for scan
  delay : time to stay at one wavelength
 - Return Value
  MSG_NO_ERROR
  MSG_DEVICE_BUSY
  ERR_NOT_FOUND_WAVE
  ERR_DEVICE_NOT_READY
  ERR_DEVICE_NOTCONNECTED
 - Remark
  Scans wavelength from start to end with a fixed FWHM and step size and time for stay in each wavelength

11. string GetStringMsg(int code);
 - Parameters
  code : message number
 - Return Value
  MSG_NO_ERROR
  MSG_DEVICE_BUSY
  ERR_DEVICE_NOT_READY
  ERR_DEVICE_NOTCONNECTED
 - Remark
  If the message number parameter input,
  Text(string) is returned by decoding message corresponding to the number

12. int DeviceReset();
 - Parameters
 - Return Value
  MSG_DEVICE_INIT = Reset the device
  ERR_DEVICE_NOTCONNECTED = Device not connected
 - Remark
  Reset the device