

02_Working_With_MDF_Class

May 8, 2020

1 Working with asammdf.MDF

```
[1]: from asammdf import MDF, Signal
      print(MDF.__doc__)
```

Unified access to MDF v3 and v4 files. Underlying _mdf's attributes and methods are linked to the `MDF` object via *setattr*. This is done to expose them to the user code and for performance considerations.

Parameters

name : string | BytesIO

mdf file name (if provided it must be a real file name) or
file-like object

version : string

mdf file version from ('2.00', '2.10', '2.14', '3.00', '3.10', '3.20',
'3.30', '4.00', '4.10', '4.11', '4.20'); default '4.10'

callback (**kwargs) : function

keyword only argument: function to call to update the progress; the
function must accept two arguments (the current progress and maximum
progress value)

use_display_names (**kwargs) : bool

keyword only argument: for MDF4 files parse the XML channel comment to
search for the display name; XML parsing is quite expensive so setting
this to *False* can decrease the loading times very much; default
False

remove_source_from_channel_names (**kwargs) : bool

remove source from channel names ("Speed\XCP3" -> "Speed")

copy_on_get (**kwargs) : bool

copy arrays in the get method; default *True*

1.1 Create 3 Signal objects

```
[2]: import numpy as np
```

```
[3]: timestamps = np.array([0.1, 0.2, 0.3, 0.4, 0.5], dtype=np.float32)
```

1.1.1 unit8

```
[4]: s_uint8 = Signal(samples=np.array([0, 1, 2, 3, 4], dtype=np.uint8),  
                      timestamps=timestamps,  
                      name='Uint8_Signal',  
                      unit='u1')
```

1.1.2 int32

```
[5]: s_int32 = Signal(samples=np.array([-20, -10, 0, 10, 20], dtype=np.int32),  
                      timestamps=timestamps,  
                      name='Int32_Signal',  
                      unit='i4')
```

1.1.3 float64

```
[6]: s_float64 = Signal(samples=np.array([-20, -10, 0, 10, 20], dtype=np.float64),  
                        timestamps=timestamps,  
                        name='Float64_Signal',  
                        unit='f8')
```

Create empty MDF version 4.00 file:

```
[7]: with MDF(version="4.10") as mdf4:  
  
    # append the 3 signals to the new file  
    signals = [s_uint8, s_int32, s_float64]  
    mdf4.append(signals, "Created by Python")  
  
    # save new file  
    mdf4.save("my_new_file.mf4", overwrite=True)  
  
    # convert new file to mdf version 3.10  
    mdf3 = mdf4.convert(version="3.10")  
    print(mdf3.version)  
  
    # get the float signal  
    sig = mdf3.get("Float64_Signal")
```

```

print(sig)

# cut measurement from 0.3s to end of measurement
mdf4_cut = mdf4.cut(start=0.3)
mdf4_cut.get("Float64_Signal").plot()

# cut measurement from start of measurement to 0.4s
mdf4_cut = mdf4.cut(stop=0.45)
mdf4_cut.get("Float64_Signal").plot()

# filter some signals from the file
mdf4 = mdf4.filter(["Int32_Signal", "Uint8_Signal"])

# save using zipped transpose deflate blocks
mdf4.save("out.mf4", compression=2, overwrite=True)

```

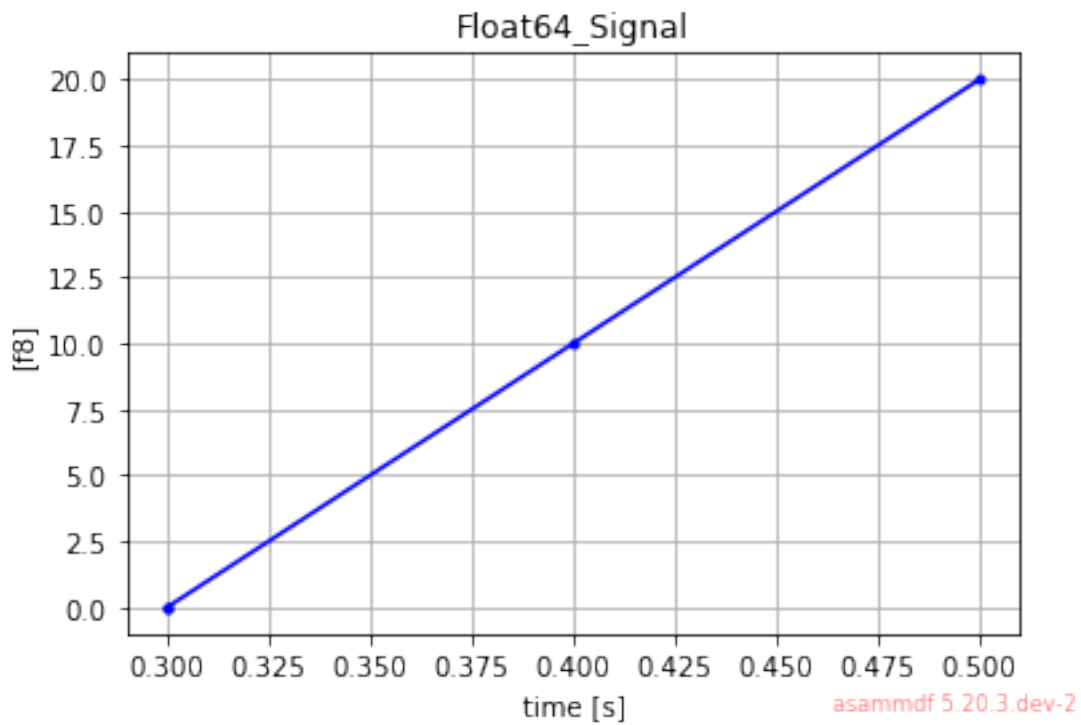
WARNING:root:Signal plotting requires pyqtgraph or matplotlib

3.10

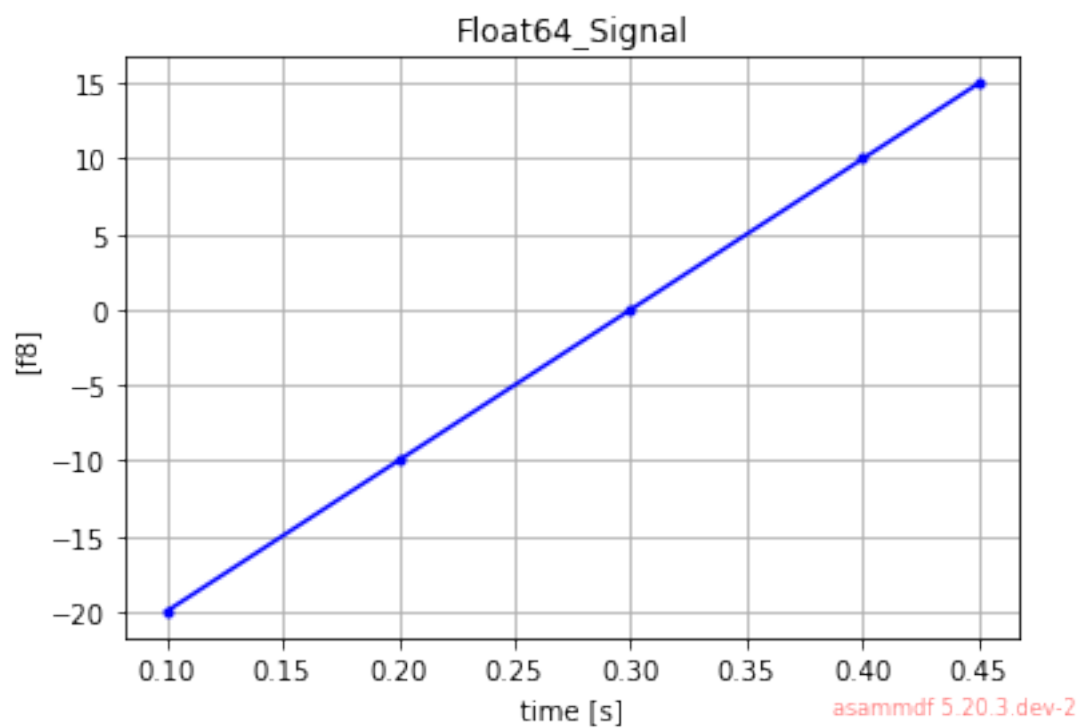
```

<Signal Float64_Signal:
  samples=[-20. -10.   0.  10.  20.]
  timestamps=[0.1      0.2      0.30000001 0.40000001 0.5      ]
  invalidation_bits=None
  unit=""
  conversion=None
  source=None
  comment=""
  mastermeta=("'time', 1)"
  raw=False
  display_name=
  attachment=()>

```



WARNING:root:Signal plotting requires pyqtgraph or matplotlib



[]: