MTP-NT Filter Structure

KMT TELEMETRY

1. RF interference suppression

At the signal inputs there is a double pi-filter (C/L/C/R/C) for the total suppression of RF interference.

2. Anti-Aliasing Filter

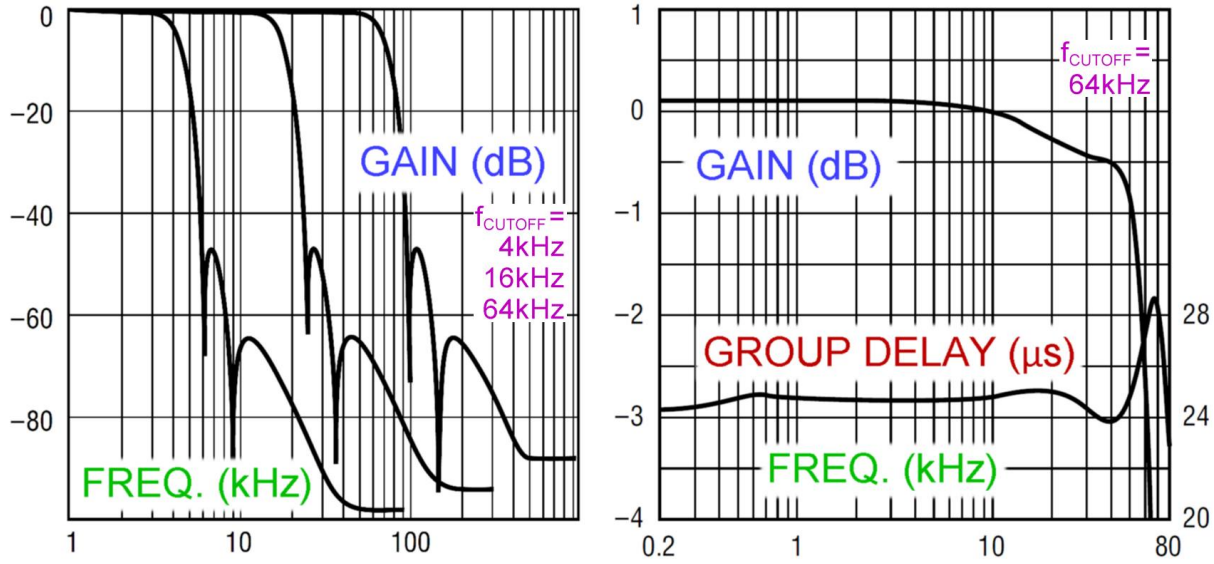
The antialiasing filter in the NT analog path is located between the amplifier and the A/D converter.
It has the following characteristics:

* Linear Phase, 10th Order Lowpass Filter
* Root Raised Cosine Response
* Programmable between 100 Hz and 24 kHz (increment 1 Hz)

The filter cutoff frequency (-3 dB) can be set with ntconfig.exe.

2.1 Frequency Response

These are exemplary frequency responses that can be arbitrarily scaled because the filter is programmable:



2.2 Step Response

We chose the Root-Raised-Cosine characteristic because it produces only marginally more ringing than the normally used Raised-Cosine filters, but has advantages with regard to the signal-to-noise ratio and regarding the artifacts produced by aliasing.