NADC bursting using channel filter for burst shaping

$\alpha := 0.35$

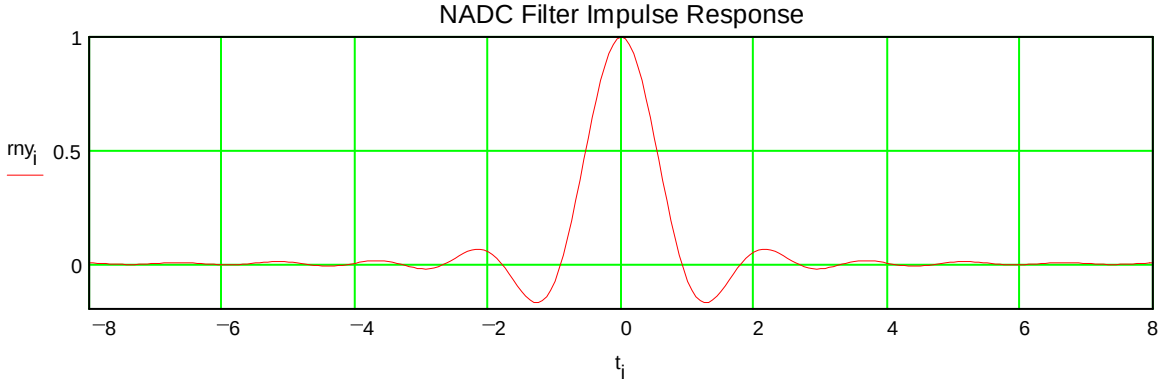
$$root\_nyquist(t) := \frac{\cos(\pi \cdot t \cdot (1+\alpha)) + \frac{\sin(\pi \cdot t \cdot (1-\alpha))}{4 \cdot \alpha \cdot t}}{\left[1 - (4 \cdot \alpha \cdot t)^2\right] \cdot \left[1 + \frac{\pi \cdot (1-\alpha)}{4 \cdot \alpha}\right]}$$

$osr := 16 \qquad n := osr \cdot 16$

$i := 0 .. n \qquad t_i := \frac{i}{osr} - \frac{16}{2}$

$rny_i := root\_nyquist\left(t_i + 10^{-9}\right)$

NADC Filter Impulse Response



$symbols := 20 \qquad m := (3 \cdot symbols) \cdot osr \qquad j := 0 .. m \qquad t_j := \frac{j}{osr} - symbols$

$$step\_response_j := \sum_{s=0}^{symbols} root\_nyquist\left[\left(t_j - s\right) + 10^{-9}\right]$$

$$s\_dB_j := 10 \cdot \log\left[\left(step\_response_j\right)^2\right]$$

$max_j := -60 \qquad k := (symbols - 3) \cdot osr .. (2 \cdot symbols + 3) \cdot osr \qquad max_k := 2$

$min_j := -100 \qquad k := symbols \cdot osr .. 2 \cdot symbols \cdot osr \qquad min_k := -4$

NADC specifications

Burst Response Using Channel Filter