7. Assessment Criteria

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 0 | 1 | 2 | 3 |
| Order | > 300 | 200:300 | 100:200 | <100 |
| Passband ripples [dB] | > 0.4 | 0.3:0.4 | 0.2:0.3 | <0.2 |
| Stopband attenuation [dB] | <-60 | -25:-60 | -15:-25 | >-15 |
| Transition bandwidth [kHz] | >80 | 50:80 | 30:50 | <30 |

5. Constraints

Orders: <200

Passband ripples: <0.2

Stopband attenuation: <-25 dB

Transition bandwidth: <30 kHz

7. Optimum filter

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Order | Passband ripple [dB] | Stopband attenuation [dB] | Bandwidth transition | scores |
| Blackman | 199 | 0.02 | -79.4 | 87 kHz | 8 |
| Chebyshev | 200 | 0.02 | -112.3 | 87 kHz | 7 |
| Equiripple | 273 | 1 | -112.3 | 24.8 kHz | 7 |
| Least Squares | 200 | 0.201 | -29.4973 | 30.23 kHz | 8 |

8. Optimum filter after iterations:

Equiripple

Score: 9

Order: 258

passband Ripple: 0.215

stopband Attenuations: -29.073

transition BW: 28.9 kHz