DSB Portfolio 2

Nis Sarup

25. november 2010

1 Fourier Transform method

Mathematica formulas:

$$
\begin{aligned}
t &= 67; \\
m &= \frac{t-1}{2}; \\
cH &:= \frac{2\pi 1800}{8000}; \\
cL &:= \frac{2\pi 800}{8000}; \\
h[0] &:= \frac{cH - cL}{\pi}; \\
h[n_{]} &:= \frac{Sin[cH \cdot n]}{n \cdot \pi} - \frac{Sin[cL \cdot n]}{n \cdot \pi};
\end{aligned}
\tag{1}
$$

I get the results h[n] with n ranging from $-m$ to m:

$$
Table[h[i], i, -m, m, 1]
\tag{2}
$$

This gives a large table of values which I copy into the MathLab program (Program 7.1 for example 7.3 in the book) and get the following graph:
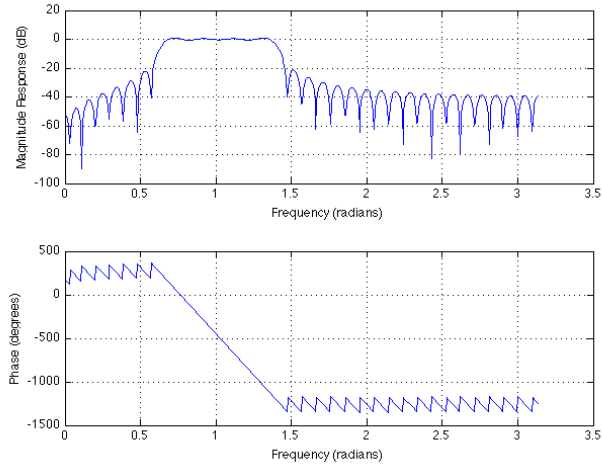

Figur 1: Fourier Transform method: Magnitude response and Phase.