$bit := 14$ — number of DAC bits (TDA1541A=16 TDA1540 = 14)

$Iref := 2 \cdot mA$ — current DAC reference

$VdvCmsb := 10.5 \cdot V$ — voltage across Cmsb (TDA1541A=7.5V TDA1540 = 10.5V)

$wc_percent := 14.2 \cdot \%$ — worst case %

$Fdem := 176.4 \cdot KHz$ — DEM frequency

$DEMbits := 10$ — number of DEM bits (TDA1541A=7 TDA1540 = 10)

$Bit := \left[\frac{1}{\left[2^{(bit+1)}\right]}\right]$ $\quad Bit = 3.052 \times 10^{-5}$ — bit constant

$Iwc := \left(\frac{Iref}{4}\right) \cdot wc_percent$ $\quad Iwc = 71\,\mu A$ — worst case p-p ripplea current for given %

$Vwc := Bit \cdot VdvCmsb$ $\quad Vwc = 3.204 \times 10^{-4}\,V$

$Zwc := \frac{Vwc}{Iwc}$ $\quad Zwc = 4.513\,\Omega$

$\omega dem := 2 \cdot \pi \cdot Fdem$

$Cmsb := \frac{1}{\omega dem \cdot Zwc}$ $\quad Cmsb = 0.2\,\mu F$

$Cdem_0 := Cmsb$

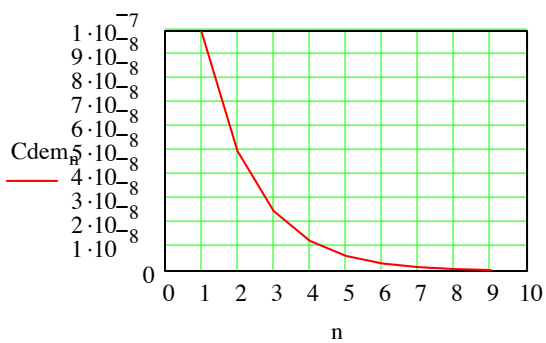
$n := 1 .. (DEMbits - 1)$

$Cdem_n := \frac{Cmsb}{2^n}$

Cdem =

	0
0	0.2
1	0.1
2	0.05
3	0.025
4	0.012
5	$6.247 \cdot 10^{-3}$
6	$3.124 \cdot 10^{-3}$
7	$1.562 \cdot 10^{-3}$
8	$7.809 \cdot 10^{-4}$
9	$3.905 \cdot 10^{-4}$

μF



Cmsb = 1 x 220 nF demFo=176.4KHz 15.7%
Cmsb = 2 x 100 nF demFo=176.4KHz 14.2%
Cmsb = 1 x 100 nF demFo=176.4KHz 7.2%

For Zwc = 1 wc_percent = 64% Cmsb=0.9uF