

$$n := 1,3..80 \quad Pf := 0.0165 \quad p := 0.05 \quad Ldata := 1024 \quad NDBPS := 72$$

$$A1 := \frac{p}{16 \left[\frac{(1-p)}{8} + \frac{p}{32} \right]} \quad A2 := \frac{p}{16 \left[\frac{(1-p)}{8} + \frac{p}{32} \right]} \cdot \sum_{L=1}^{15} \left[\frac{(1-Pf)}{(1-2Pf)} \right]^L \quad A3 := A1 + A2$$

$$C3 := C1 \cdot B3 + C2 \cdot B3 \quad D1 := \frac{p}{128 \left[\frac{(1-p)}{8} + \frac{p}{256} \right]} \quad D2 := \frac{p}{128 \left[\frac{(1-p)}{8} + \frac{p}{256} \right]} \cdot \sum_{L=1}^{127} \left[\frac{(1-Pf)}{(1-2Pf)} \right]^L$$

$$F1 := \frac{p}{512 \left[\frac{(1-p)}{8} + \frac{p}{1024} \right]} \quad F2 := \frac{p}{512 \left[\frac{(1-p)}{8} + \frac{p}{1024} \right]} \cdot \sum_{L=1}^{511} \left[\frac{(1-Pf)}{(1-2Pf)} \right]^L \quad F3 :=$$

$$taw := \frac{1}{1 + A3 + B3 + C3 + D3 + E3 + F3 + G3} \quad taw = 0.232$$

$$tDATA := \left[16 + 4 + 4 \cdot \left[\frac{16 + 6 + 8 \cdot (34 + Ldata)}{NDBPS} \right] \right] \cdot 10^{-6} \quad tRTS := \left[16 + 4 + 4 \cdot \left[\frac{16 + 6 + 8 \cdot (20)}{NDBPS} \right] \right]$$

$$Tatime := 9 \cdot 10^{-6} \quad tSIFS := 16 \cdot 10^{-6} \quad tDIFS := 34 \cdot 10^{-6} \quad tDelay := 1 \cdot 10^{-6} \quad tRTS = 3.011 \times 10^{-5}$$

$$Ts := tRTS + 3 \cdot tSIFS + 4 \cdot tDelay + tCTS + tDATA + tACK + tDIFS$$

$$Tc := tDIFS + tRTS + Tatime$$

$$Ptr(n) := 1 - (1 - taw)^n \quad Ps(n) := \frac{n \cdot taw \cdot (1 - taw)^{n-1}}{1 - (1 - taw)^n} \quad Pc(n) := 1 - Ps(n) \quad BEB(n) := \frac{1 - (1 - taw)^n}{n \cdot taw}$$

BEB 802.11a 6Mbps

$$B1 := \frac{p}{32 \left[\frac{(1-p)}{8} + \frac{p}{64} \right]} \quad B2 := \frac{p}{32 \left[\frac{(1-p)}{8} + \frac{p}{64} \right]} \cdot \sum_{L=1}^{31} \left[\frac{(1-Pf)}{(1-2Pf)} \right]^L \quad B3 := B1 \cdot A3 + B2 \cdot A3$$

$$\left[\frac{(1-Pf)}{(1-2Pf)} \right]^L \quad D3 := D1 \cdot C3 + D2 \cdot C3 \quad E1 := \frac{p}{256 \left[\frac{(1-p)}{8} + \frac{p}{512} \right]} \quad E2 := \frac{p}{256 \left[\frac{(1-p)}{8} + \frac{p}{512} \right]}$$

$$F1 \cdot E3 + F2 \cdot E3 \quad G1 := \frac{p}{1024 \left[\frac{(1-p)}{8} \right]} \quad G2 := \frac{p}{1024 \left[\frac{(1-p)}{8} \right]} \cdot \sum_{L=1}^{1023} \left[\frac{(1-Pf)}{(1-2Pf)} \right]^L \quad G3 :=$$

$$\cdot 10^{-6} \quad t_{CTS} := \left[16 + 4 + 4 \cdot \frac{[16 + 6 + 8 \cdot (14)]}{NDBPS} \right] \cdot 10^{-6} \quad t_{ACK} := \left[16 + 4 + 4 \cdot \frac{[16 + 6 + 8 \cdot (14)]}{NDBPS} \right] \cdot 10^{-6}$$

$$t_{CTS} = 2.744 \times 10^{-5} \quad t_{ACK} = 2.744 \times 10^{-5}$$

$$\frac{Ps(n) \cdot Ptr(n) \cdot (Ldata \cdot 8)}{[1 - Ptr(n)] \cdot T_{atime} + Ps(n) \cdot Ptr(n) \cdot T_s + Ptr(n) \cdot Pc(n) \cdot T_c}$$

BEB(n) =

1.183 · 10 ⁷
1.176 · 10 ⁷
1.125 · 10 ⁷
1.053 · 10 ⁷
9.59 · 10 ⁶
8.447 · 10 ⁶
7.149 · 10 ⁶
5.785 · 10 ⁶
4.469 · 10 ⁶
3.301 · 10 ⁶
2.343 · 10 ⁶
1.609 · 10 ⁶
1.077 · 10 ⁶
7.062 · 10 ⁵

1.5 × 10

1 × 10

BEB(n)

5 × 10

$7.002 \cdot 10^5$
$4.562 \cdot 10^5$
...

$$C1 := \frac{p}{64 \left[\frac{(1-p)}{8} + \frac{p}{128} \right]} \quad C2 := \frac{p}{64 \left[\frac{(1-p)}{8} + \frac{p}{128} \right]} \cdot \sum_{L=1}^{63} \left[\frac{(1-Pf)}{(1-2Pf)} \right]^L$$

$$\left[\sum_{L=1}^{255} \left[\frac{(1-Pf)}{(1-2Pf)} \right]^L \right] \quad E3 := E1 \cdot D3 + E2 \cdot D3$$

$$\frac{G1 + G2}{1 - G1 - G2} \cdot F3$$

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