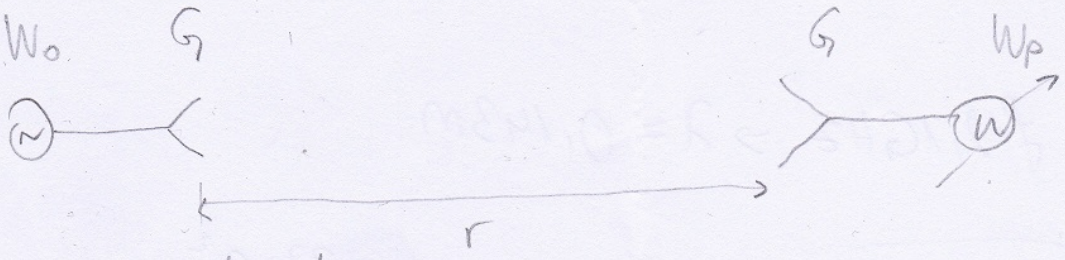
MJERENJE GUBITKA I KUTA USMJERENOSTI



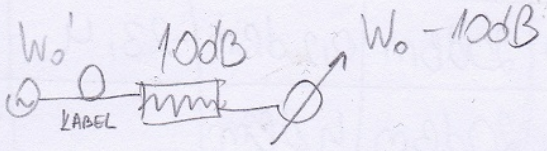
- antene su prilagođene

$$W_p = \frac{W_0 \lambda^2}{(4\pi r)^2} G^2$$

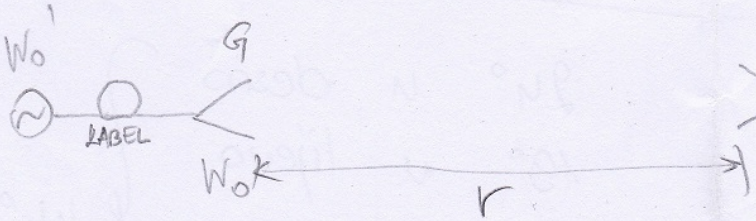
$$W_p[dBm] = W_0[dBm] + g[dB] + g[dB] - 22 + 20\log\left(\frac{\lambda}{r}\right)$$

$$g[dB] = \left[W_p[dBm] - W_0[dBm] + 22 - 20\log\left(\frac{\lambda}{r}\right)\right] \cdot \frac{1}{2}$$

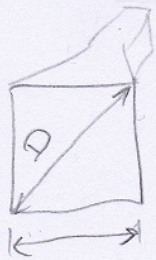
PRINCIPIJELNA SHEMA



1. mjerenje (odabirajuće snage)



2. mjerenje



$D = a\sqrt{2} = 0{,}3m$ $\quad R_{gg} = \frac{2D^2}{\lambda} = 1{,}26m$

$f = 2{,}1GHz \rightarrow \lambda = 0{,}143m$

$r > R_{gg}$ $\quad$ TEORETSKI: $D = \frac{32 \cdot a^2}{\pi \cdot \lambda^2} = 13{,}55dB$

MJERENJA

$W_o' = 20dBm$

$W_o = 10dBm$

1. mjerenje

$g = \frac{1}{2}\left(W_p - 20 + 22 - 20\log\left(\frac{\lambda}{r}\right)\right)$

mj.	r	W_o	W_p	$20\log\left(\frac{\lambda}{r}\right)$	g
1	2,9m	20dBm	-2,2 dBm	-26,1	12,97
2	2,12m	20dBm	0,2 dBm	-23,4	12,80
3	1,26m	20dBm	4 dBm		12,45

$G = \frac{29000}{30° \cdot 44°} = 22 = 13{,}4dB$

24° u desno
19° u lijevo
} 44°

od maksimuma 24° u desno
20° u lijevo

Kut usmjerenosti $\varphi_D = 44°$
$\varphi_E = 30°$