Location and length of the stub using Reflection coefficient The ifp impedence is given by 75=20 / 1+Ke-288 FON lossless line a = 0 (75=70) [1+1K1e)\$ e-japl 1-1K1e3\$ 0-12B8 = Zo[1+1K1e) (-2Bl) 1-1K100(\$-2B1) Zs: /4 , Zo = /70 . .

30/3/3 Location & Logigth of the stub using reflection coefficient. The ifp Impedance is given by 28-20 [1+ke-222] Ys = 75 - 1 Go + 70 = 70. Y3 = Go [1-1K1ev(\$-288)] = Gio[1-1K1[costo-2pl]+jsin (p-2pl]] [1+1K1 [cos (4-288]+j sin(4-288)] Take complex conjugate of the denominator. = Go [1-1K1CO8 (\$ -2BP) + j1K1xin(\$ -2BP) x [1+1K1[cos(\$-2B2)]-jsin(\$282)] [1+1K1 COS (\$ -2BD) - jkl sin (\$ -2BD) 141K1 WS (d-2Bl) - j1K1 Nin (d-2Bl) $\int (a-ib)(a+ib) = a^2+b^2$ = G_0 [1-1K1 cos (p-2p2) - j sin (ϕ -2p2) 1K1] [1+1K1 cos (ϕ -2p2) - j1K1 sin (ϕ -2p2)] [1+1K1CO8 (\$-282)] 2+[1K1] 2xin2 (\$-282)] = Go [1+1 k | cos $(\phi - 2\beta l) - j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | k | cos^2 (\phi - 2\beta l) + j | cos^2 (\phi - 2\beta$ rin(+ 2pl) - j|k| sin(+ 2pl) - j|k| sin (\$-288) 108(\$-280) -1K12sin2 (\$-280) [1+1K1cos (p-2BR)]2+1K12xin2 (p-2BR)

= Go [1-2/k/188 (4-934)-2j1k/sin(4-2BR)- $|k|^2 [\omega s^2 (\phi - 2\beta l) + s \ln^2 (\phi - 2\beta l)$ [1+1K1W8 (\$-2BP)]2+1K12 xin2 (\$-2BP) = Go 1-21K1 (68 (6-2B) jisin (\$-2B) - 1K12. 1-21K112082(\$-2B\$)+2(K1008(\$-2B\$)+1K12 8in(\$-2B\$) = Go 1-1K12 - 2 sin (\$ -2BP) 1K1 [1+21K1 cas (\$-2BR) +1K12 $\frac{y_{s}}{G_{0}} = \left[\frac{1 - |k|^{2} - 2|k| \int_{0}^{2} 8(\eta - 2\beta)}{1 + |k|^{2} + 2|k| \cos(\phi - 2\beta)}\right]$ 3/8/23. Vs. - Go + J. Ss. [(192-1) (02/3)[(+(192-1) 63)[x]-1] (0) (\$\phi-2\psi). Gis 1-1K12 -Go 1+1K12+21K1CO8(\$-2B8) (190 p) 034 Hi = (191 - 1/20 19/11) 171K12+21K1 (08 (\$-288) 1AKIZ = 1+1KT + 21K1 cos (\$-282) [111 - 21K] = 121K1 co8 (\$-288) 1.K1 = COS (\$ -2Bl) (08 CO-2BP) = -1K) p-2BP = cos-1(-1K1) 1= ls=location of the stub COS (0 - 2Bls) = = 7 K) p-28l8 = cos-1(-1k1) 2818 = \$- cos-1 (-1K1)

```
Since cos- (-0) = - 11+ cos. 10
   (08-1(-1K1) = -11+1081(1K1)
          p-28ls = - 11 + 108-1 (1K1)
             2Bls = 0 + 11 - cos (1K1)
               (8) = $ + 11-40.85 (1K1)
      location of the stub.
              18 = 1 [p-11-408 (1K1)
   Length of the stub.
      Sg = -2 |K| Nin (p-2Bl)

Go 1+1K12+2|K| (OB (p-2Bl)) [p-2Bl=
  1+1k12+21K1(-1K1) -608(p-2Bl)=-1K1
   = -21kl sin [-11+cos](1K1)]
                  1+1K12-21K12 hakiumin
   Since sin (-11+0) = - sin 0
bro stale 2021x1 sin 6005-11x1) is alles
  restoure remod-1K12 son one sing + cesto :
    Let cos-1/k1 = 0
                       1 - Gerso 00 acres 1
    IKI: COS O
   sin (cos - (1x1) = min 0)
         Rin (cos-)(1<) = V-cos20
             \frac{55}{60} = \frac{21k1\sqrt{1-1k12}}{1-1k/2}
             Ss = G10 [2/K]
    Go Cob Blt = G6 (21K)
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(35 = Go cot B4) tample = 21K1 tan Bli = JI-1KP 21K1 Bit = tan ([1-1 x 12] 217 x 4 = tan / V 1-1k/2) $2t = \frac{\lambda}{2\pi} + an^{-1} \left(\frac{\sqrt{1 - 1} \times 1^2}{2 \times 1} \right)$ The short circuited stub is normarry preferred be cause to the simpler construction and inability of the 184 pl to reminemain open ancuited. FIXIC - IXITE Short circuited stubis easily established with a large plate and it also has a lower radian Coss of energy. 9 = 1411-600 tol Drawbacks of Single Stub Matching

It is Applicable for single

= 21/11/1-1/12

5-11-12