

10 GHz Cassegrain
Antenna Set



38 dBi

INSPIRACE

W2IMU - G3PHO - WB5LUA - G7MRF

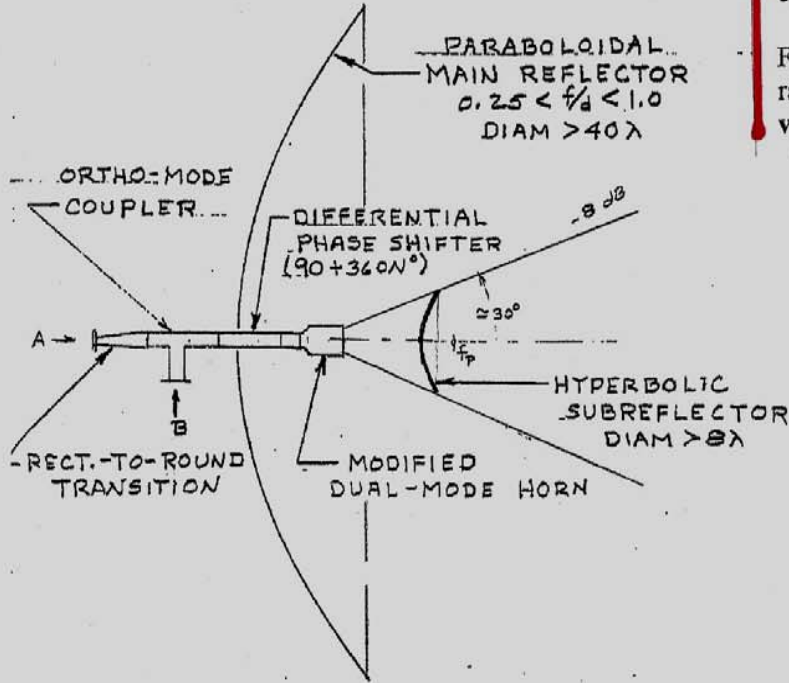


FIGURE 2

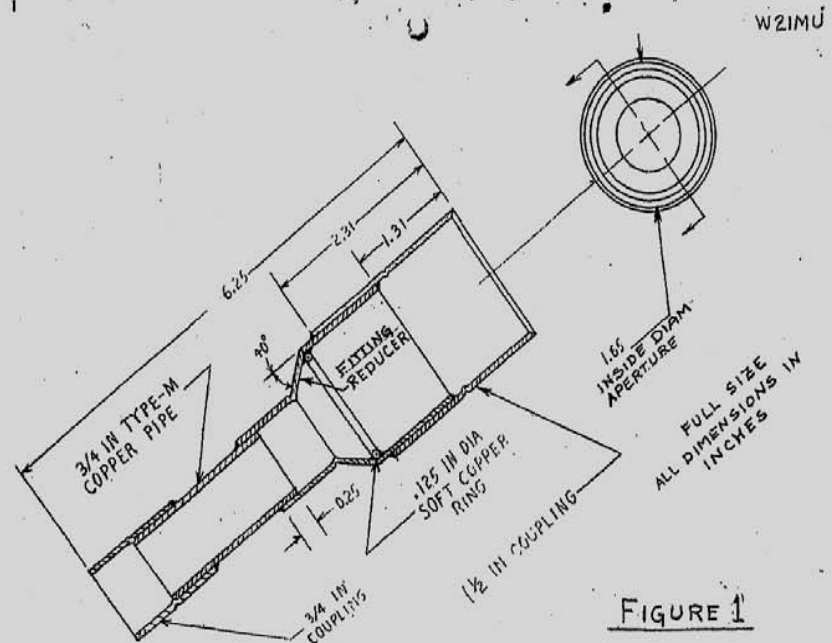
CIRCULARLY POLARIZED CASSEGRAINIEN ANTEENNA SYSTEM

A & B ARE RECT. W.G. PORTS OF OPPOSITE CIRCULAR POLARIZATION

This modified version of the IMU DUAL-MODE feed antenna can be used to front feed a parabolic reflector with an $f/d = 1$. However, it was specifically designed to illuminate a hyperbolic subreflector in a Cassegrainian reflector antenna system.

The measured radiation characteristics at 10.368 GHz are almost identical in the E and planes down to the -10 dB level. Thereafter the patterns are remarkably similar characteristics even at the -35 dB level.

For parabolic reflectors of 48 inch diameter or larger, and with more commonly available ratios from 0.35 to 0.5, this feed together with an appropriate subreflector can result in very efficient and high gain rear feedline Cassegrainian antenna.

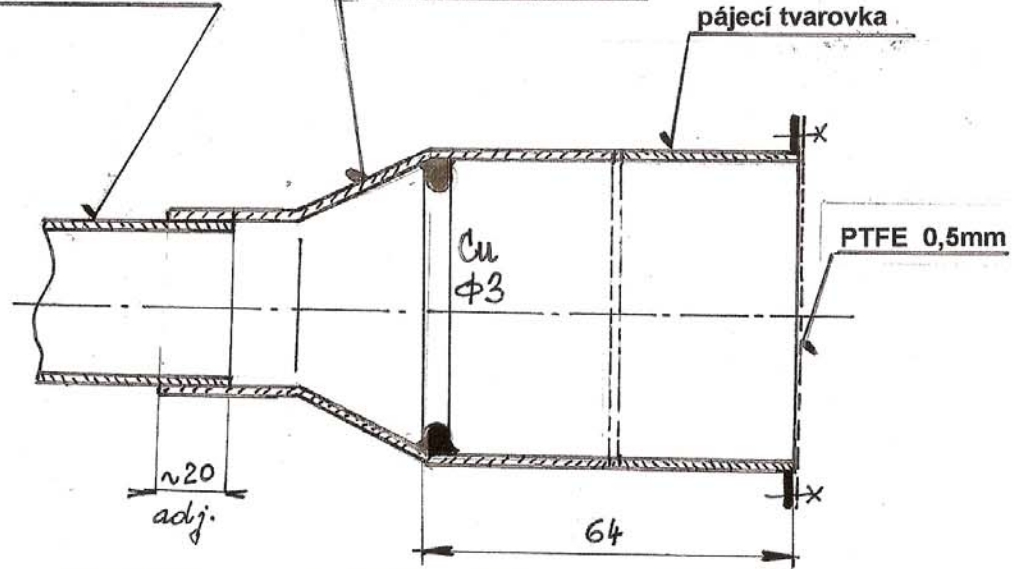




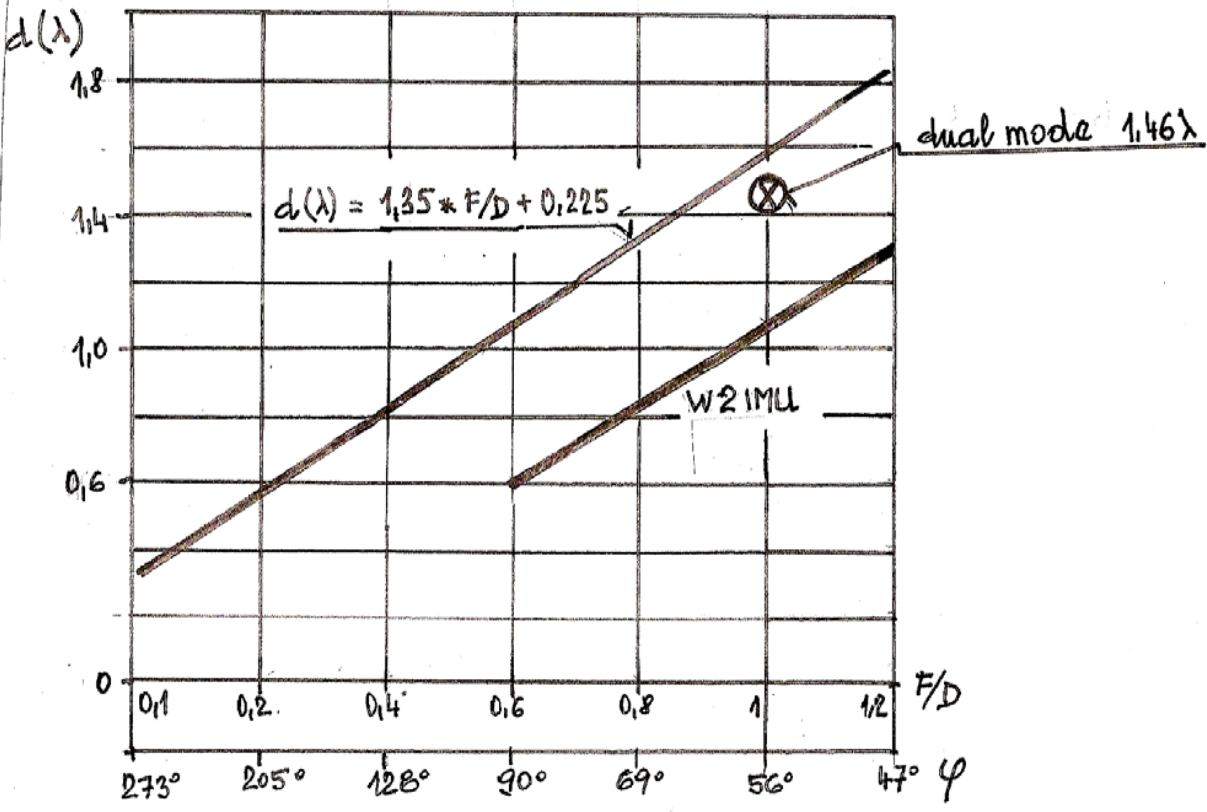
Cu trubka 22 x 1 mm

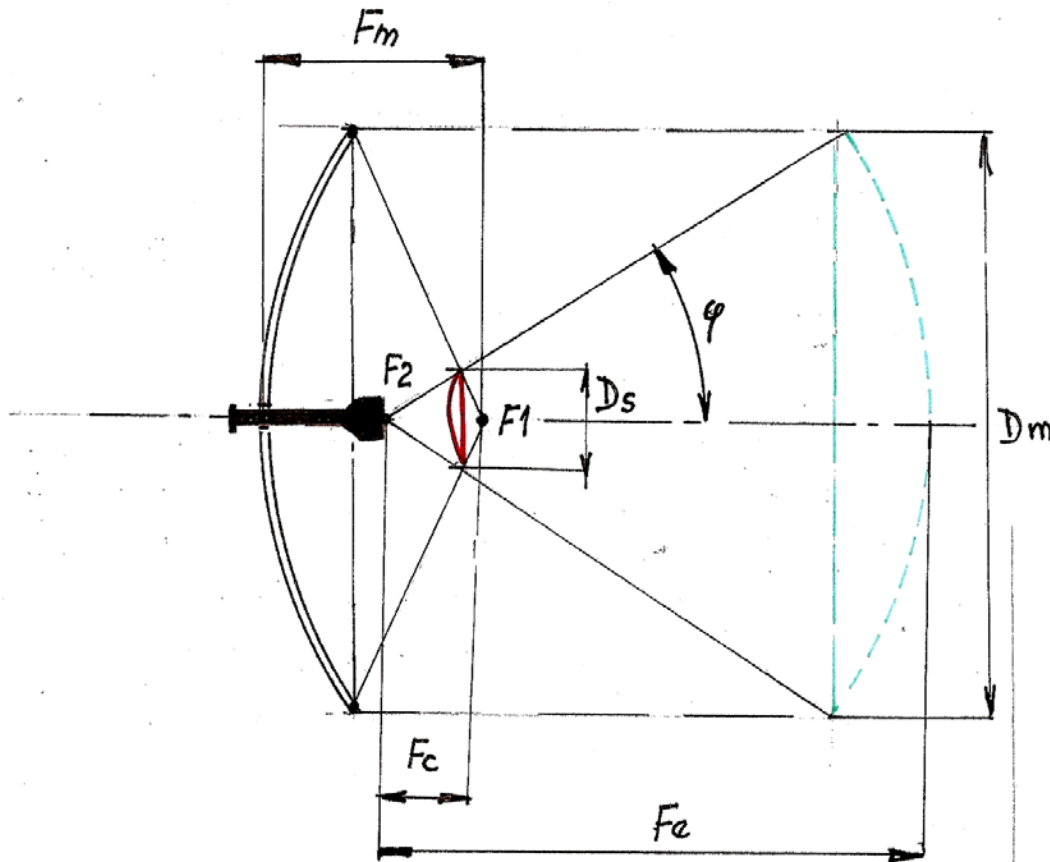
Cu redukce 42 x 22 mm

Cu spojka 42 mm
pájecí tvarovka



Dual mode feedhorn 10 GHz modifikace OK 2BFF $\phi \geq 31^\circ$ / - 10dB
CZ sortiment





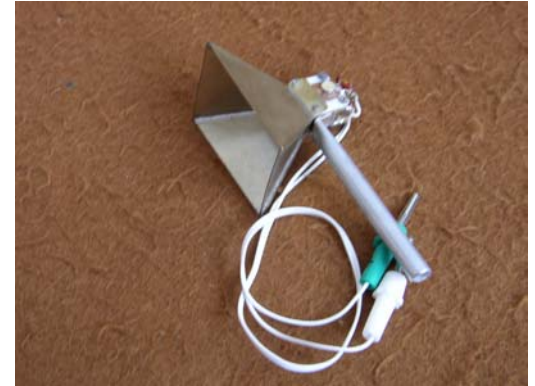
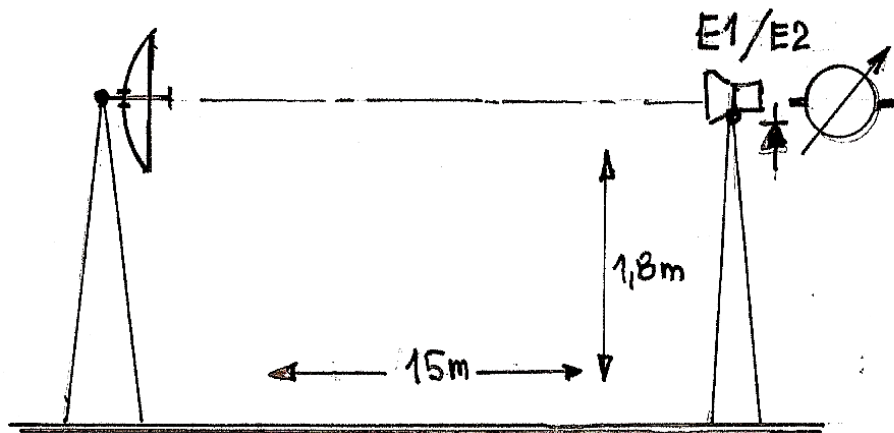
$$D_m = 900 \text{ mm} \quad F_m = 315 \text{ mm} \quad F_m / D_m = 0,35$$

$$D_s = 130 \text{ mm} \quad F_c = 130 \text{ mm} \quad \varphi \geq 31^\circ / -10\text{dB}$$

$$F_e = 891 \text{ mm} \quad F_e / D_m = 0,99$$

Rovnice pro subreflektor (hyperboloid) souřadnice X – v ose paraboly

$$X = 28,51 \left[\sqrt{1 + (Y/58,32)^2} - 1 \right]$$



Dish 600 mm 35dBi + Penny feed

naměřeno E1 = 100

Dish 900 mm 38 dBi + Cass. dual mode feed

E2 = 200

- přínos větší paraboly + 3 dB přínos Cass.versus Penny + 3 dB



g173!

OK 2 BFF