THALES NAVIGATION	Marketing & Technical Tips		
ZMax	N° 2003/01d	02/05/06	By : Denis BERNARD

How to connect an external GPS antenna

A . Connection on the ZMax side :

You have to use a " Max –RF adapter "

(the same as delivered with Backpack kit)

P/N 800978

GPS output is the top TNC female connector.

The other one is UHF

B . Connection on the antenna side :

a – if you use your Max-Trac GPS Antenna :

You have to use the " Range Pole RF Adaptor "

(the same as delivered with Backpack kit)

P/N 800979

b – if you use another antenna (see § C)

You can have a direct TNC connection .

C - Usable Marine antennas

a - the Max-Trac original ZMax antenna.

b – former Thales Navigation L1/L2 antennas :

- NAP002 (P/N P0 101 158)
- Geodetic IV antenna (P/N 701975)
- Aeroantenna AT 2775-42 (P/N C0 000 792) …

c – more generally any GPS antennas having a preamplifier powered by 5VDC and with a GPS gain between 30 and 40db can be tested.

D – Usable cables

a – for fully guaranteed operation

The maximum length of coaxial cable has to be :

With small (Ø 5 mm) single (KX15) or double shield (RG223U) coaxial cable or equivalent : 12 meters maximum (40 feet)

T.N. reference : 10m KX15 TNCm / TNCm P/N C505 0196

With medium (Ø 10 mm) double shielded standard coaxial cable (RG214U, KX13 or equivalent) : 30 meters maximum (100 feet)
For an easier setting up (those cables are quite rigid) two 1 metre cables are generally used at each end .

Our reference : one x 30m KX13 Nm / Nm P/N C505 0168
two x 1m KX15 TNCm / TNCm P/N C505 0156
*two x coaxial adaptor **TNCf / Nf** P/N C505 0216*

With low loss cables : depending on the cable specs, assuming the loss will not be greater than 10db.

Exemples :
With LMR400 (from Times Microwaves Systems) Low Loss Ø 10 mm cable,
0,174 db/m at GPS frequencies , the maximum length would be around 55m (180 feet)
With LMR600 (from Times Microwaves Systems) Low Loss Ø 15 mm cable,
0,113db/m at GPS frequencies , the maximum length would be around 88m (290 feet)
With LMR900 (from Times Microwaves Systems) Low Loss Ø 22 mm cable,
0,072 db/m at GPS frequencies , the maximum length would be around 139m (455 feet)

For longer lengths of cable, or to avoid the use low loss cables , the use of a preamplifier is possible .

B – for reception test only

For test purpose only, and accepting a lower sensitivity, that is the risk of loosing the low elevation SVs , a 30m small coaxial cable can be used (total loss around 25db) .

T.N. reference : 30m RG223U TNCm / TNCm P/N C505 0188

E – antennas for aviation

Basic Specs must be :

1227 MHz +/- 10 MHz
1575 MHz +/- 10 MHz
Power Supply 5VDC
Preamplifier gain 30 to 40 db

AEROANTENNA

http://www.aeroantenna.com/html/aviation.html

AT2775-41

Polarization: Right Hand Circular
VSWR: <=2.0:1
Impedence: 50 OHMs
Magnet: NM(No Magnet)
Cable: 000(No Cable)

Frequency: 1227+/-10 MHz,1575+/-10 MHz
Band Rejection: 35db
Gain: Passive,12db,26db,**36db**
Voltage: 00,05,**RG**(5 to 18 VDC)
Connector: **TNCF**
Finish:Polyurethane Enemal, Fluid resistent
Color: B,W,O,S
Weight: 8 oz max.

How to order : AT2775-41W-TNCF-000-RG-40-NM
THALES navigation P/N : 105435

SENSOR ANTENNA

http://www.sensorantennas.com/pdf/1575-14,-76,-86,-96.pdf

S65-1575-96