OPERATION MANUAL
FOR
LK4-2
LINK UNIT

1. IMPORTANT INFORMATION

FCC ID: **OOALK4-2**

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning! Any modification or changes made to this device, unless explicitly approved by Maynetronics Limited, will invalidate the authorisation of this device. Operation of an unauthorised device is prohibited under Section 302 of the Communications Act of 1934, as amended, and Subpart I of Part 2 of Chapter 47 of the code of Federal Regulations.

2. INTRODUCTION

The LK4-2 link unit is a remote transceiver for the NOMAD system. Its purpose is to provide the radio link to wireless NOMAD terminals.

Several of these link units can be connected to the same controller via a single twisted pair cable. Each link unit is powered from a 12V DC supply.

3. SPECIFICATION

Power	10-18V DC
Average Consumption	100mA
Radio link	
Frequency	915MHz

3.1 CERTIFICATION

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful

interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

3.2 CABLE LENGTHS

3.2.1 12V DC POWER CABLING

When fitting the link unit ensure that the voltage at the link unit is in the range 10 to 18 V DC. Voltage drop between the power supply and the link units will depend on the cable used and the number of link units connected to a single power supply.

The following table gives maximum cable lengths for some common configurations. Note that the cable length is from the power supply to the farthest link unit for a single cable run. It would be normal practice to make two or more cable runs from a single power supply (in different directions).

12V DC supply:

# Of Link Units	1.0mm^2	1.5mm^2
1	171	256
2	133	199
3	108	163
4	92	138

15V DC supply:

# Of Link Units	1.0mm^2	1.5mm^2
1	427	641
2	332	499
3	272	408
4	230	345

3.2.2 Network Cabling

The maximum cable length for the network cable is dictates the distance from the controller to the farthest link unit. This is typically 1km. Note that if the controller is centrallly placed this gives a maximum distance from one end to the other of 2km.

4. INSTALLATION

The LK4-2 has been designed to be permanently installed

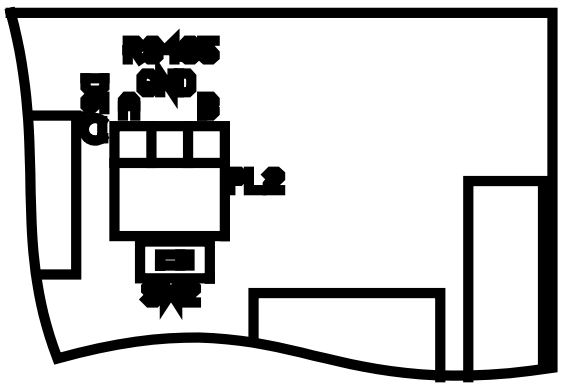
4.1 MOUNTING

Whilst the general location for each link unit will be dictated from a system viewpoint individual link units should adhere to the following guidelines

1. Avoid mounting adjacent to metal pillars etc.
2. The antenna should have a vertical orientation.

It is usual to mount the link unit suspended over a main path with the antenna pointing vertically downwards. A fixing kit is supplied that assists in attaching the link unit to parallel overhead support wires, see figure 1 at the end of this manual.

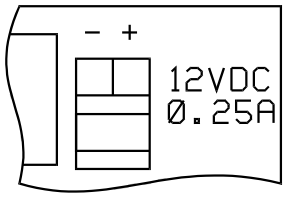
4.2 CONNECTIONS



The network connection should be made using screened twisted pair cable with a characteristic impedance of 110Ω. When connecting multiple link units to a single controller each item of equipment (link unit or controller) should be daisy chained - the cable starts at one item and then goes to the next, and then the next and so on. Do not use a star configuration - one item has connections running from it to more than two other items.

The last two items, and only the last two items, in the chain should have their terminators switched on. For the link units this is achieved by sliding switch SW2 to the left - see above.

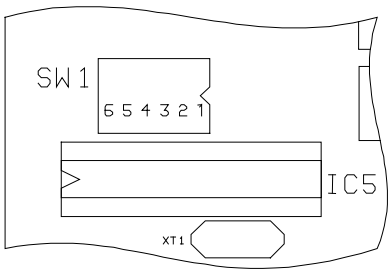
Take care on 12V DC powered units to observe the correct polarity.



Cables connected to the link unit should be fixed so that any moisture running down the cable does not is directed away from the link unit. All glands must be tightened - any unused glands should be fitted with a blanking plug.

4.3 NETWORK IDENTIFIER

To enable a link unit to be identified from other link units on the network a unique number is assigned to it using switch SW1



Set the switch as follows (0 is down, 1 is up)

Identifier	Setting	Identifier	Setting
0	000000	16	010000
1	000001	17	010001
2	000010	18	010010
3	000011	19	010011
4	000100	20	010100
5	000101	21	010101
6	000110	22	010110
7	000111	23	010111
8	001000	24	011000
9	001001	25	011001
10	001010	26	011010
11	001011	27	011011
12	001100	28	011100
13	001101	29	011101
14	001110	30	011110
15	001111		

Note that switch SW1 position 6 (leftmost) is reserved for factory test mode and should be in the 0 (down) position for normal use.

4.4 ANTENNA

Screw the antenna directly into the link unit as per figure 1.

Never attempt to use a cable to extend the antenna or mount it remotely from the link unit.

Never connect anything over than the supplied antenna to the antenna port.

5. MAINTAINENCE

The link unit is designed to give maintenance free service.

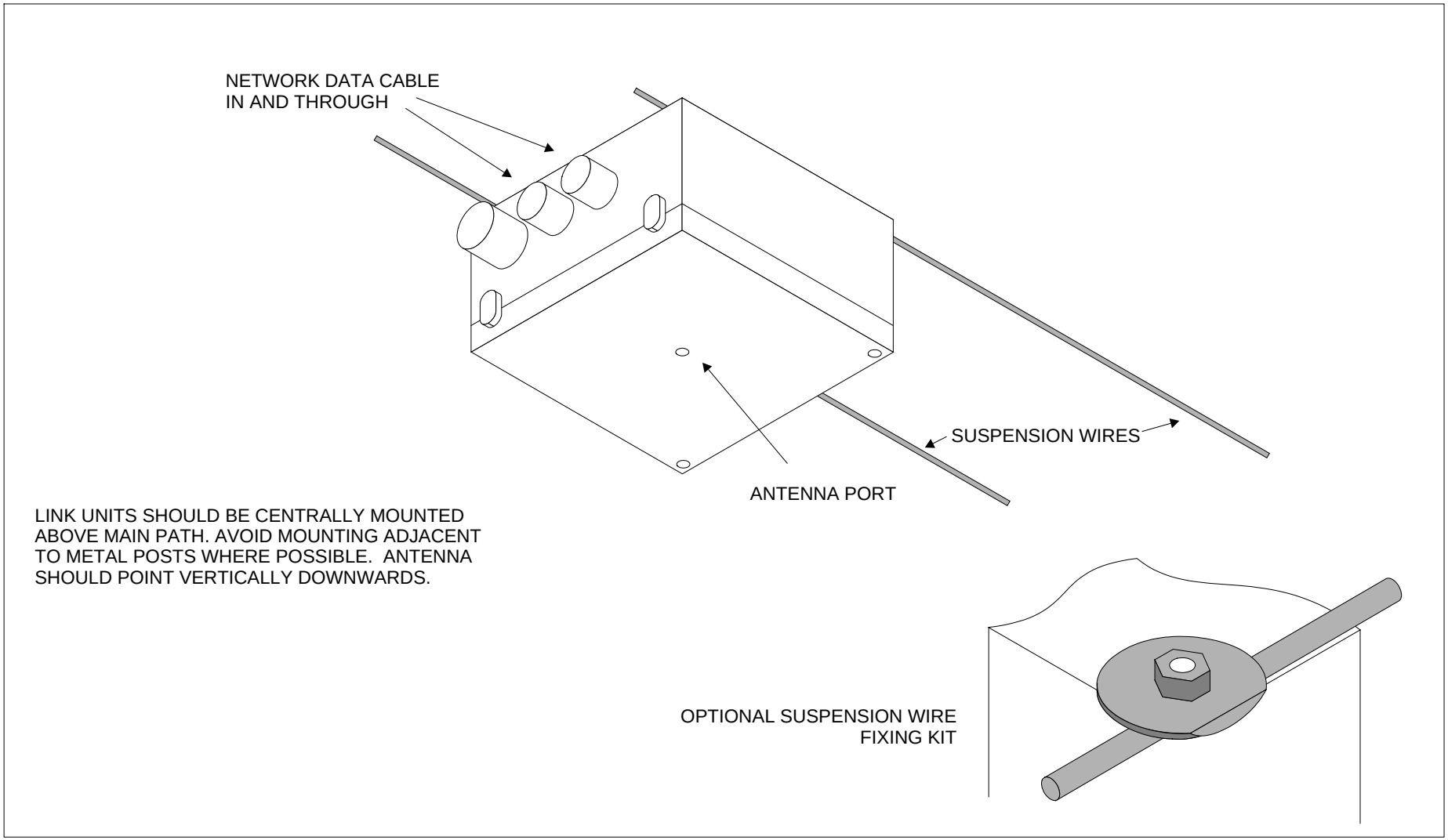


Figure 1 - suspension mounting