



**RADIO
ADAPTER**

INSTRUCTIONS

Thank you for purchasing the Lynx Micro System.

IMPORTANT

The following instructions have been prepared to provide users of the Lynx Micro Communications System with the necessary information to enable safe and correct use.

Please read this booklet carefully and take time to familiarise yourself with your new equipment and its mode of operation before attempting to use it during flight.

CONTENTS

| SECTION | | PAGE N° |
|---------|--------------------|---------|
| 1 | INTRODUCTION | 1 |
| 2 | SOLO CONFIGURATION | 3 |
| 3 | DUAL CONFIGURATION | 5 |
| 4 | SPECIFICATION | 7 |

INTRODUCTION

The Lynx Micro System has been specifically developed for use in the high-noise environment of open-cockpit aviation where noise attenuation and microphone noise cancellation are primary concerns.

The Lynx Micro System Radio Adapter is purposely designed for use with Lynx Micro System Headsets and airband radio transceivers, to provide pilots of single seat aircraft with all the facilities necessary for high quality radio telephony.

The Radio Adapter

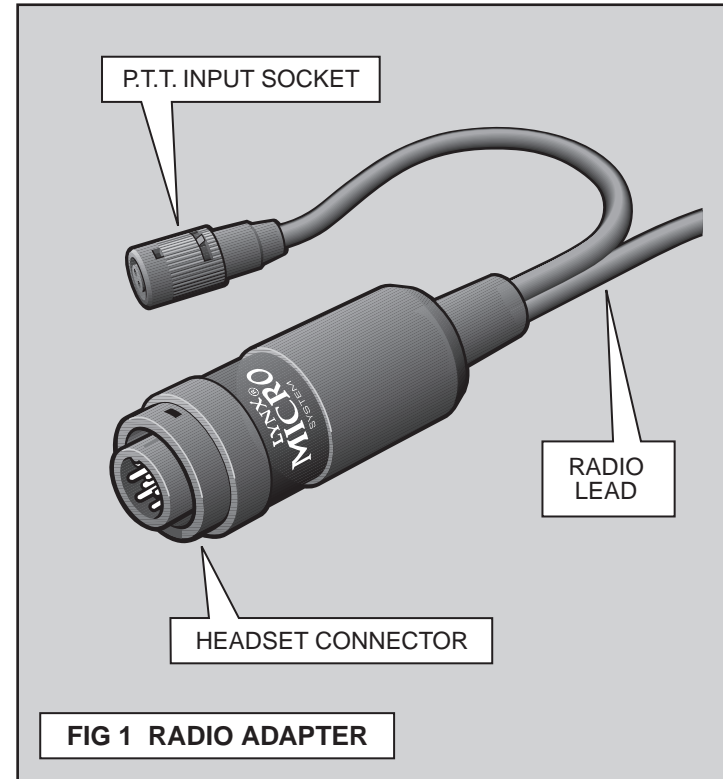
The Radio Adapter is manufactured utilising the latest techniques in microcircuit design, and surface-mount component technology, to produce an exceptionally compact unit (fig 1).

Developed specifically for use in close proximity to engine ignition systems, the internal electronics are designed to be virtually immune to electrical interference. All electronic component parts of the adapter, including the leads and connectors, are screened to prevent noise from electromagnetic radiation. In addition to passive shielding, the processor includes dedicated electronics to actively filter and remove interference from the audio signals passing through the unit.

The adapter uses very little electrical current, especially during stand-by, and has no noticeable effect on headset battery life when used with a Micro System Headset.

Radio Configuration

The Radio Adapter is intended for direct connection to a hand-portable radio and can be supplied to work with all common types of radio transceiver.



Power Supply

The Radio Adapter is intended primarily for use in solo applications and provides the interface between a headset and a radio . A single headset can be connected directly to the adapter using the locking connector socket built in to the unit (fig 1).

To simplify operation, the adapter draws its power directly from the self contained Micro System Headset and does not require a separate battery. The adapter is switched on automatically once a headset is connected. Some specialist Lynx headsets do not contain an internal battery and can not be used with the Radio Adapter.

Push-To-Transmit

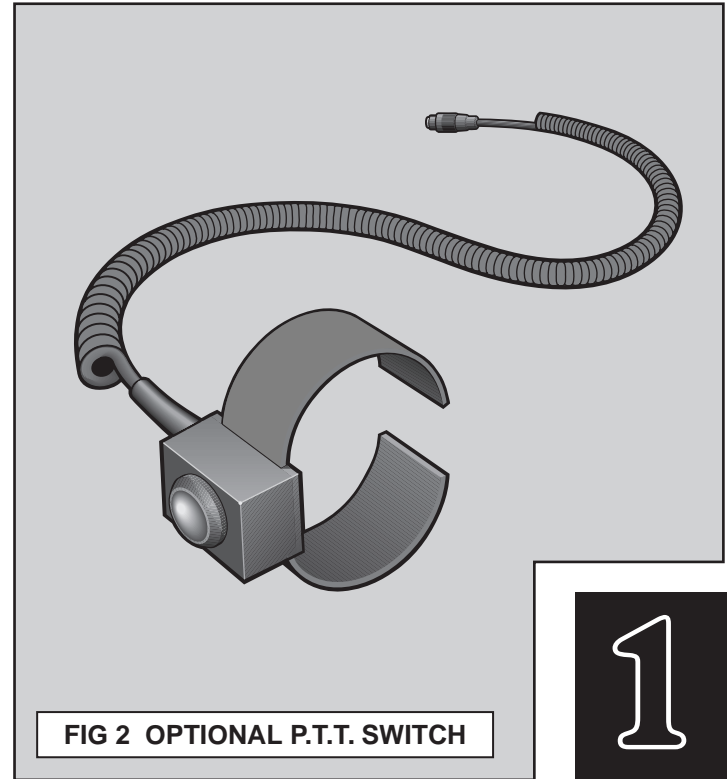
In order to provide the greatest flexibility of operation the adapter is fitted with a 'Push-To-Transmit' (P.T.T.) input socket (fig 1).

The input socket allows a separate external switch to be connected to the unit to control radio transmissions. During the operation of a P.T.T. switch the headset microphone is opened, for radio transmission, and the radio is automatically switched to transmit.

If two headsets are connected to the adapter, using a headset lead splitter, both headset microphones are opened for transmission simultaneously when the P.T.T. switch is operated.

Push-To-Transmit Switch

Several types of 'Push-To-Transmit' switch are available from Lynx for use in different applications. All Lynx 'Push-To-Transmit' switches are supplied with a bayonet locking connector to allow direct connection to the Radio Adapter.



SOLO CONFIGURATION

The Lynx Micro System concept is intended to simplify considerably the configuration and operation of radio interface equipment within the open cockpit environment. The following information is provided as a guide to the safe and correct method of use.

Solo Operation

For solo operation, a single headset and a P.T.T. switch should be connected to the adapter and the adapter radio lead connected to the radio (fig 3). If required the headset lead may be extended, using a headset extension lead, to allow the unit to be conveniently located.

It is important to note that the headset is switched on automatically, once the adapter is connected, and the adapter must be disconnected after use to prevent headset battery drain.

The headset connection and the P.T.T. connection to the adapter should be bayonet locked, and correct operation of the equipment should always be established, by a radio check, before flight.

Radio Connection

The adapter is normally fitted with a standard radio connector which will connect directly to most available transceivers. The adapter electronics, however, are always configured to work with the specific make and model of radio specified when ordering the unit.

Before using an adapter with a radio, it is important to establish that the unit is correctly configured, as connecting and using an adapter which does not match the radio may damage the unit or the radio.

Hand-portable radios must be powered from their own battery pack, or an external power source, when used with the Radio Adapter.

Volume Setting

The Micro System Headset is fitted with a volume control allowing the speaker output to be adjusted to an appropriate level. Correct setting of this control is important in order to minimise the amount of extraneous background noise reaching the ears and to compensate for differences in individual hearing sensitivity.

Initial volume adjustment should take place once the headset has been connected and switched on. At this stage the volume should be set to a comfortable level in preparation for making any radio check transmissions and before starting the aircraft engine.

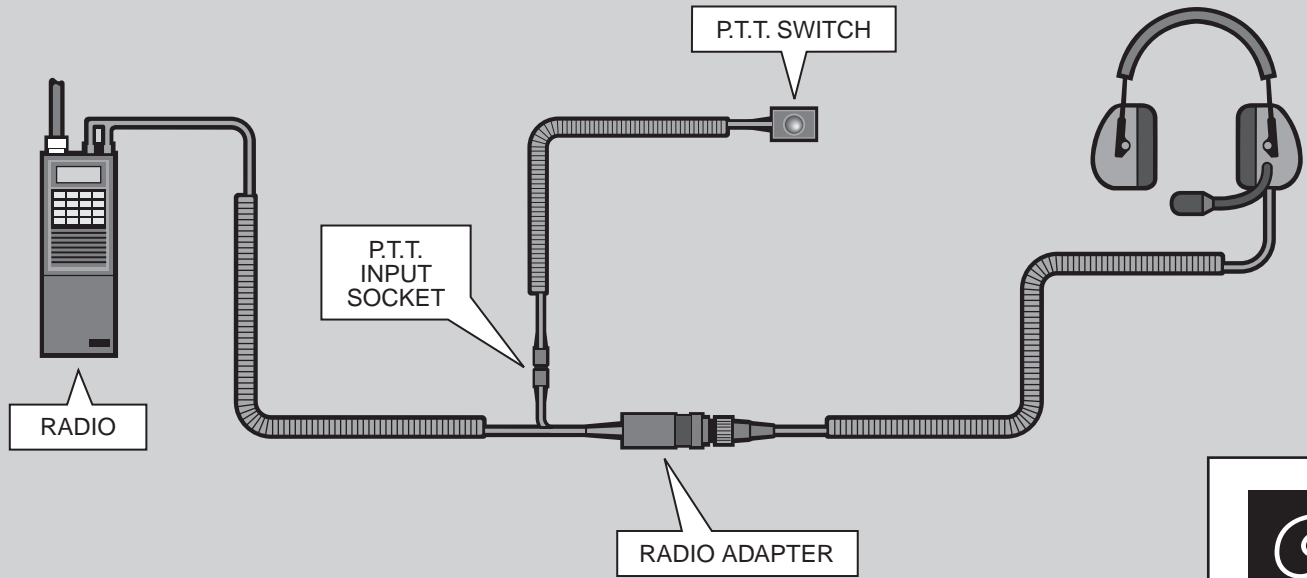
Whilst undertaking radio checks it is important to note that the headset volume control only affects the output of the headset speakers. The level of audio received by radio should be adjusted separately using the transceiver volume control.

After the aircraft engine has been started the headset volume can be set more accurately by progressively reducing the level until the background noise is almost all cancelled out. Always remember to set the volume at a level where the engine noise is still slightly audible as often the sound of the engine is the first indication of impending problems in this area.

Antenna Connection

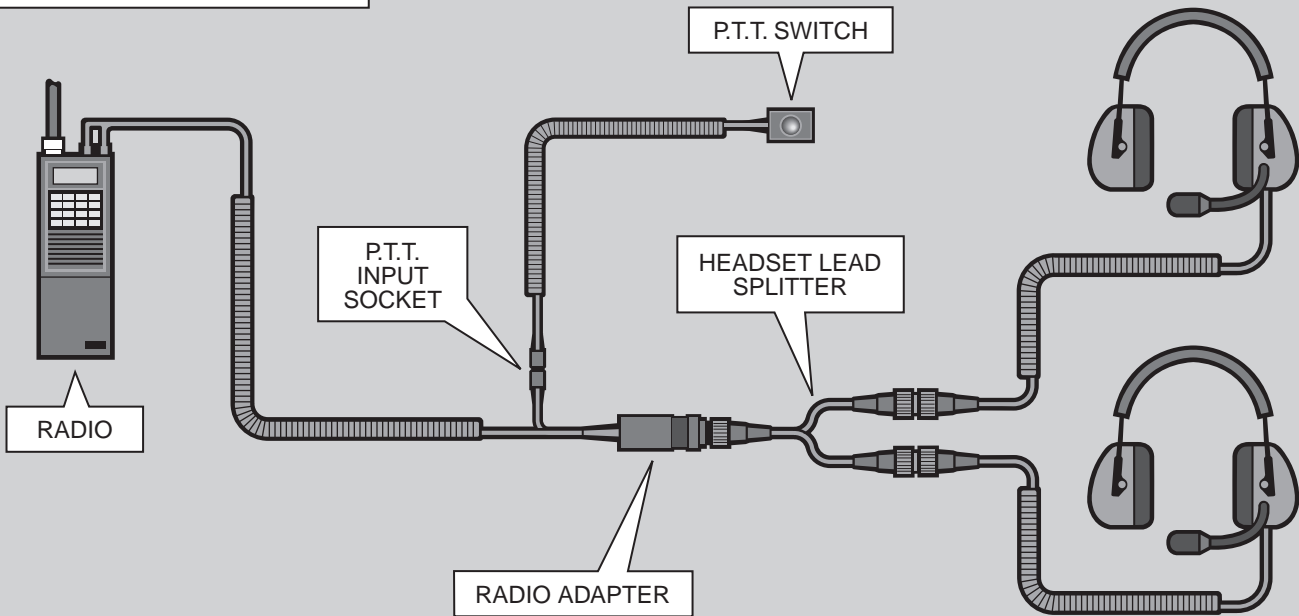
While it is possible to operate a hand-portable radio in an aircraft using the short helical antenna, this practice is not recommended. The fitting of a 1/4-wave whip antenna to the aircraft effectively increases the power of a radio, in comparison to the helical antenna, and allows transmission and reception over a much greater range.

FIG 3 SOLO CONFIGURATION



2

FIG 4 DUAL CONFIGURATION



DUAL CONFIGURATION

In addition to the Radio Adapter, Lynx Avionics manufactures a range of radio interface units specifically for use in dual applications. Radio interface units are fitted with two P.T.T. inputs and allow only one headset to transmit when a P.T.T. switch is operated.

The Radio Adapter can be connected to two headsets, in place of a radio interface unit, but does not provide selective P.T.T. inputs. When the adapter is used in this configuration both headsets will transmit simultaneously when the single P.T.T. switch is operated.

Dual Operation

Before using the adapter in the dual configuration (fig 4), it is important to read the previous section in this booklet for general information on the safe and correct method of use.

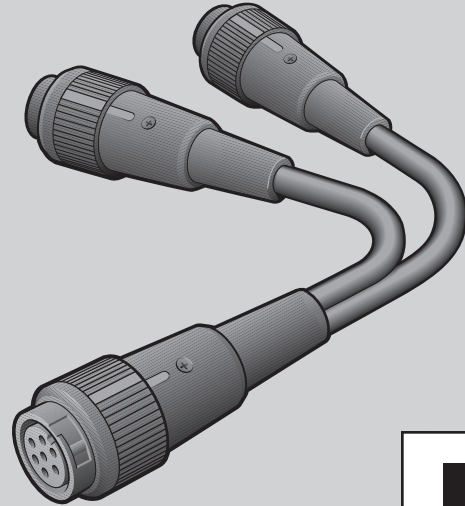
Two headsets may be connected to the adapter using a Headset Lead Splitter (fig 5). If necessary the headset leads can be extended by fitting a headset extension lead to the adapter/splitter assembly. Depending on the application, it may be desirable to fit either one or two headset extension leads to allow the adapter/splitter assembly to be conveniently located.

Correct operation of the equipment should be established by a radio check before flight and always make sure that the bayonet-locks, on all of the connections to the adapter, are properly engaged.

Headset Lead Splitter

It is important to note that headsets are automatically switched on once they are connected to the splitter and they must be disconnected after use to prevent headset battery drain.

FIG 5 HEADSET LEAD SPLITTER



3

SPECIFICATION

Technical information is provided in this section which may be useful during operation or the installation of a radio. Additional information can be obtained directly from Lynx Avionics.

Radio Type

Each adapter is configured to work with a specific make and model of radio transceiver; the individual radio type configuration is marked on each adapter.

P.T.T. Input

Several types of 'Push-To-Transmit' switch are available from Lynx for direct connection to the adapter and for use in different applications. Connectors are also available which allow any 'Normally-Open Contact' switch to be used to key a radio transmission.

TECHNICAL INFORMATION

Radio Lead length *0.5 Metre*
Stand-by power consumption *< 100 μ Amp*
Transmit power consumption *< 4 mAmp*
P.T.T. Input *Normally-Open Contact*

Bayonet Locking

The connectors fitted to the Radio Adapter enable both the headset connection and the P.T.T. connection to be locked during flight.

When making the connection between items of Micro System equipment, it is important to align the index features of the bayonet locks before pushing the connectors together (fig 6). Never force the connection as this may result in damage to the connector pins.

Always utilise the bayonet-locks to prevent accidental separation and always check that they are engaged before take off.

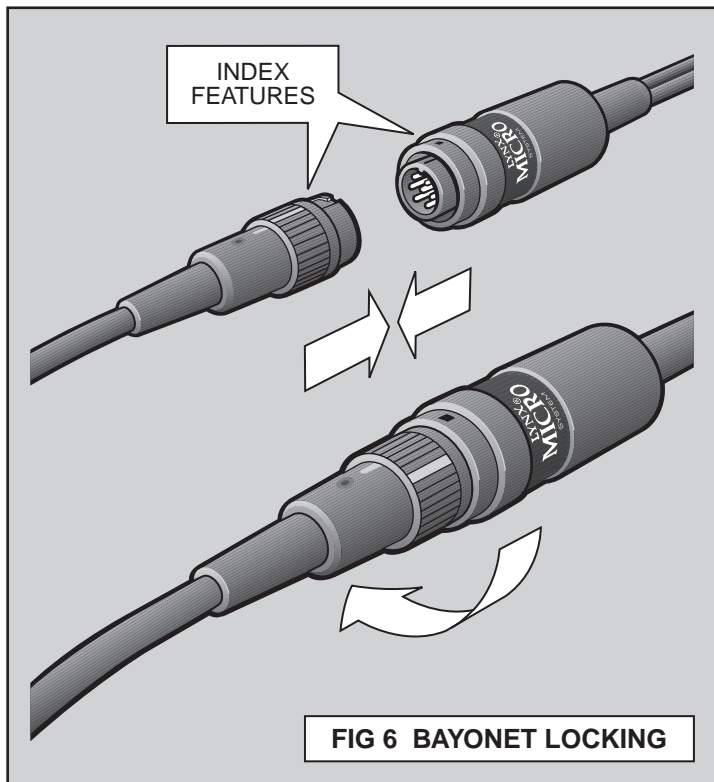
Headset Extension Lead

Headset Extension Leads are available from Lynx for use with Micro System Headsets. The leads are available in two-metre lengths, and are fitted with one male connector and one female connector.

Aircraft Installation

The Radio Adapter is designed primarily for connection to a single headset and for use in-line as an extension to the headset lead. In certain circumstances, however, it may be desirable to permanently fit the adapter to an aircraft .

All cables connected to the adapter should be carefully routed around the airframe and attached in position using the cable ties supplied. Avoid fitting the cables in close proximity to possible sources of interference such as strobe lights or the aircraft antenna. Headset extension leads should be fitted with the headset connector in an easily-accessible location next to the relevant seat.



Always check after installation that the adapter and leads do not interfere in any way with the operation of the aircraft. Depending on the type of aircraft a specialist or licensed engineer may be required by law to fit the equipment or inspect the installation.

Radio Interference

The main cause of radio interference can usually be attributed to the aircraft engine electrical system. High-tension ignition systems, and strobe lights, emit strong electromagnetic signals which are received by the radio antenna and amplified along with the radio reception.

Micro System communication equipment is virtually immune to interference from electromagnetic radiation, but can not prevent interference being introduced into the system by the radio. When using a radio in an aircraft there are several simple steps that can be followed to minimise the problem of interference, and considerably improve the quality of radio reception.

Mount the radio antenna as far away from the engine as possible and avoid routing the antenna lead close to the engine. Fit the engine ignition leads with suppressors or suppressed plug caps as a matter of course. If necessary screen the ignition leads using a braided sleeve earthed to the airframe. Finally avoid fitting strobe lights and their associated power leads near to the antenna and its lead.



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