SMART LINK™ ®

Tomorrows Technology Today

IntelPage
5 Watt Transmitter

INSTALLATION MANUAL

Part No. ***TX5w - Int***

1. Contents

2. Equipment List

- **IntelPage unit**
- **12 V DC power supply with mains cable**
- **Plastic wall mount bracket**
- **Small Rubber whip antenna with 90deg adaptor**
- **Communications cable (blue – straight through RJ45 to RJ45 cable)**
- **RS232 Type connector set (DB25 to RJ45 connector)**

3. Overview

Introduction

The Intelpage is a high quality POCSAG transmitter, suitable for use where small to medium coverage is required.

Features

On-Site Paging

The Intelpage uses an internal transmitter to send instant messages free of charge. This makes it the ideal system for any company desiring to contact mobile staff without amassing a huge, ongoing communications bill. There are no monthly access fees or per-call charges with this device. The transmitter within the Intelpage will provide coverage for small-medium premises such as a hotel, school or business.

Synthesized Design

The transmitter within the Intelpage is a synthesized design capable of operating in the 148-174 MHz VHF band (also available in 450-470 MHz UHF band). This means it can operate on the majority of the world's onsite paging frequencies.

Versatility

The Intelpage is very configurable. A series of switches on the rear panel enable the unit to be interfaced with almost any piece of paging equipment.

Front Panel

LED Indicators

Power LED (Yellow)

Indicates that power is applied to the back of the unit and that it is operational.

Transmitter Indicators

PTT LED (Yellow)

Indicates that the externally connected POCSAG transmitter is currently busy transmitting ("Keyed up")

Data LED (Red)

Indicates POCSAG data activity.

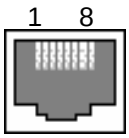
Carrier Detect LED (Yellow)

Indicates channel is busy.

Rear Panel

RJ45 Connector

The Intelpage contains an internal paging transmitter. The rear connector is an RJ45 type, 8 pin - socket. Pin numbers are viewed from the back of the unit. (socket view)



The pinouts are described below.

Pin No.	Name	Description
1	AudioP	Audio – High side of balanced connection
2	AudioN	Audio – Low side of balanced connection
3	Mode / Txd	{Audio | Data} mode selection OR when mode: Serial Transmit Data output to transmitter.
4	PTT	Push To Talk/ Transmit (active-low-input)
5	GND	Ground
6	Data	Digital Data (active-high-input)
7	Rxd	Serial Transmit Data input from the transmitter.
8	Busy	Carrier detect (active-low-output)

Switch Settings

Transmitter Settings

Five position DIP switch which configures the interface properties. Each setting can be enabled (on) or disabled (off). Busy Invert, Data Invert, PTT Invert, PTT Pull-up, Busy TTL (Busy is also known as Carrier Detect or C.D.)

DC Input

This connector is used to supply power to the unit. The Intelpage requires 12VDC @ 2amps regulated. You will have been supplied with a suitable power supply with mains lead which will plug straight into this socket.

Antenna Port

The antenna port is an opening to allow connection of the antenna to the internal transmitter. The connector is a standard BNC 50 ohm.

4. Installation

Enclosure Mounting

Before mounting the enclosure, you will need to decide where to place the unit. The Intelpage comes default with rubber feet installed, allowing it to sit on a desk or table, or be stacked upon other plastic Fusion Series modules.

The kit also includes a wall mounting bracket. To install this bracket:

1. Use a Philips screwdriver to remove the four screws holding the rubber feet
2. Seat the bracket on the base of the unit. It will only fit one way around.
3. Use the screws that used to hold the rubber feet in position, to hold the wall mount bracket in position.

Antenna

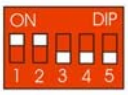
A suitable antenna capable of handling 5 watts must be connected to the BNC connector on the rear panel. The antenna for the unit must not be mounted within 5 metres of any other sensitive electronic equipment including routers, computers or phone systems. See the technical information section below for further information.

WARNING: The antenna must be placed at least 5 metres away from other electronic equipment to prevent interference.

Connecting Intelpage to a Paging Terminal

The unit can be connected to almost any paging system worldwide. DIP switches on the front panel of the unit customize the way the Intelpage operates.

If you are connecting the Intelpage to a SmartWatch XP monitoring system the dip switch configuration is as follows.

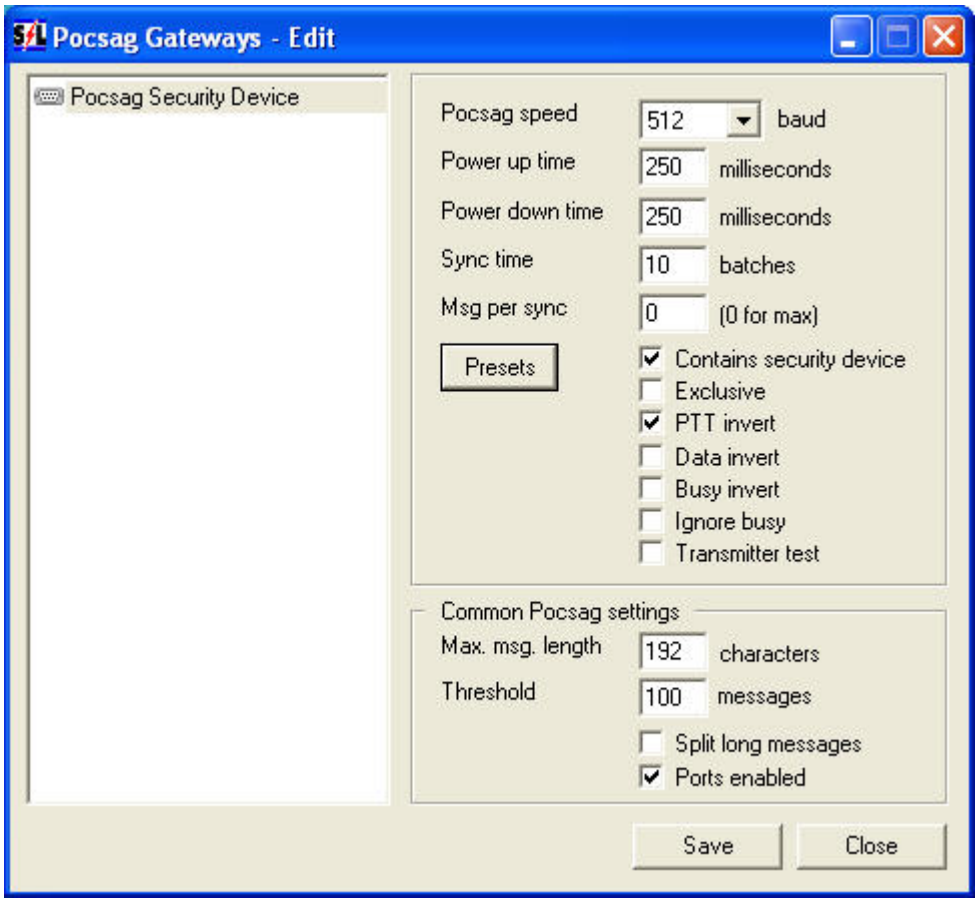


The DIP switches on the Intelpage come preconfigured as above. If you are connecting the unit to a third party encoder, consult its documentation for the transmitter settings required.

SmartWatch XP Monitoring System

If you are connecting the Intelpage unit to a SmartWatch XP Monitoring System, you must be using an “RS232” type connector set and the supplied straight through RJ45-RJ45 cable (blue).

Once the DIP switches on the Intelpage are configured properly, the SmartWatch XP Monitoring software must be setup to match to ensure correct operation. From the SmartWatch XP main screen select Interfaces-> Pocsag. From here the correct settings are easily achieved by clicking the “Presets” button and selecting “Commtech Transmitter”.



5. TECHNICAL INFORMATION

Transmitters

Thick steel and concrete, large magnetic and electric fields, and terrain and weather conditions will affect transmitter efficiency, so you will need to test the coverage of your local area transmitter at some stage of installation.

When you perform the test you should pay particular attention to the quality of the messages that you receive on the test pager. If you receive corrupted messages then it is possible that you will have problems sending messages to that region.

If you find that you are receiving corrupted messages then you should consider the following methods for improving transmission quality:

- Move the antenna to a position that gives it a clear line of site to all areas you wish to cover.
- Reduce the length of the cable connecting the aerial to transmitter.
- Use the appropriate coaxial cable to connect the aerial to transmitter which will suit the length of the cable run. For example use RG213 for runs up to 20 meters and use LDF440 for runs over 20 meters.
- Choose another type of antenna for the transmitter.
- Position the antenna in a higher location or use an antenna with a higher gain.

Increase the transmitter power. There are a number of objections to this method, such as local restrictions on aerial power. In addition, doubling the transmitter power to the aerial only gives an increase in range of a factor of 1:19 (fourth root).

The installation of Multiple Transmitters and Aerials

For buildings in an area with good field strength outside but weak reception within, possibly caused by shielding due to reinforcement in suspended slabs, metal plating and other building materials:

- The supply lead to the aerial can serve as a radiator, effectively providing a 5 meter (yard) range form the cable
- The supply from open (leaky) coaxial cable as a line radiator lead to a 50 ohm terminator (the cable is in effect the aerial).

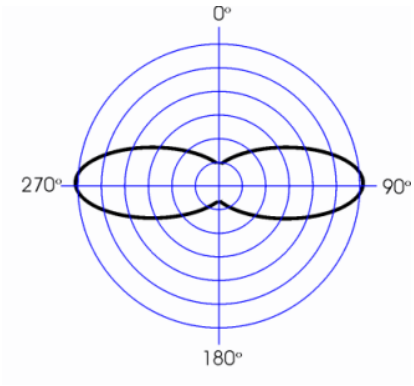
VSWR

WARNING: VSWR is a measure of impedance mismatch between the transmission line and its load. The higher the VSWR, the greater the mismatch. A high VSWR means some of the transmitted signal is being reflected at the antenna, back down the coax line and back into the transmitter itself. If this value is too high, the amount of power reflected back into the transmitter can damage the transmitter. The minimum VSWR, i.e., that which corresponds to a perfect impedance match is 1. It is essential that the VSRW of the antenna and coax connected to the amplifier is set to 1.5 or better using a SWR meter. If this test is skipped, permanent damage may result to the amplifier. Damage will also occur to the unit if the amplifier is set to transmit if no antenna is connected to the unit. To transmit without an antenna connected to the unit, use a dummy load capable of handling at least 5 watts.

6. Types of Antennas

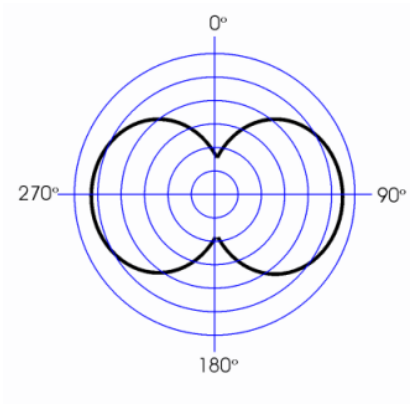
Co-linear

Co-linear antennas are most suited for installations which require maximum range. The general coverage pattern for this type of antenna is shown below.



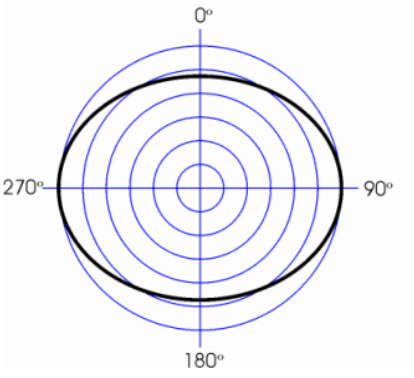
Monopole

Monopole antennas are most suited for installations which require good building penetration and range. It is a good general purpose antenna. The general coverage pattern for this type of antenna is shown below.



Side Mounted / Unity Gain Dipole

Dipole antennas are most suited for installations which require excellent building penetration. The general coverage pattern for this type of antenna is shown below.



7. APPENDIX

This Product is Not Field Serviceable

Should a fault develop with the hardware or software, contact your place of purchase for the most appropriate form of action. Do not attempt to open or repair any of the products as this may void any warranty.

Technical Specifications

Note: Specifications subject to change without any notice

Equipment type.....POCSAG transmitter
Frequency range ..... VHF - 148-174 MHz, or UHF - 440-470 MHz Synthesized
Internal Transmitter ..... 5 watts
Power supply.....12VDC @ 2Amps regulated
External led indicators ..... power, ptt, data, carrier detect
Interface ports..... Pocsag: RJ45f with selectable RS232/TTL level
External antenna connector.....BNC Female 50ohm
External switches..... 5 way DIP switch for interface config
Supported protocols .....POCSAG
Dimensions.....255 x 230 x 70 mm / 10 x 8 x 2.7 inches
Weight ..... 700g / 1.5lb nett
Ambient temperature operating range..... 0 – 50 °C (20-90% RH non condensing)
Storage temperature range ..... -10 – 60 °C (10-95% RH non condensing)

Oct 2007
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