

Panasonic

DPITS Digital Repeater

Model PR-4928

Manufactured by

design2000

Est. 1968

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1 Introduction

1.1 Forward

Design Two Thousand Pty Ltd has developed the *DPITS Long Line Repeater* suited to Panasonic Digital Proprietary Integrated Telephone Systems (DPITS).



1.2 The Panasonic Digital Super Hybrid System and Digital Proprietary Telephones

The Panasonic Digital Super Hybrid System (DSHS) is by now one of the biggest selling Key Telephone systems in North America, Europe and Asia. However a limitation exists where the Digital Proprietary Telephone (DPT) will not work on cable runs of more than approximately 300 meters from the DSHS or Private Branch Exchange (also called PABX or Key System Unit (KSU)). A number of installations such as campus environments, sporting arenas, multi-storey buildings, storage yards and large warehouses may require DPT connections up to 1 kilometer from the main DSHS.

1.3 The Digital Proprietary Integrated Telephone System (DPITS) Long Line Repeater

The *DPITS Long Line Repeater* extends the reach of DPTs by up to 900 meters beyond the current 300-meter limit (a theoretical total of 1200 meters). When maximum distance is required, adding more *DPITS Long Line Repeaters* in series may be necessary where it is not possible to locate the *DPITS Repeater* in the middle of a cable run. Please note that a theoretical limit of 1200 meters exists. Field conditions such as cable type, junctions, temperature, twists and turns etc. will naturally reduce the maximum allowable cable length.

The *DPITS Long Line Repeater* is transparent to the customer.

The *DPITS Long Line Repeater* is to help win the many tenders that specify the requirement for longer distances between the DSHS and DPTs. Chain stores, as an example, may require the same brand of phone system at many locations with only one or two requiring a long line. The ability to fulfil that requirement may mean winning the entire deal.

1.4 The Development of the DPITS Long Line Repeater

Our preliminary observations indicated that the line length was limited by three factors.

1. Supply voltage to the handset.
2. Distortion of the signal caused by line impedance
3. Time delay (skew/slipping) caused by inherent line characteristics.

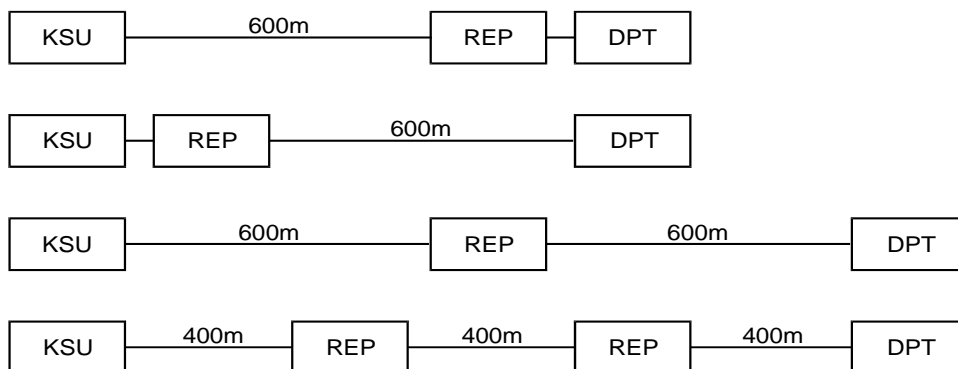
These three factors needed to be investigated and fixed by a ***DPITS Long line Repeater***

Design Two Thousand Pty Ltd has addressed the limiting factors by engineering and producing a ***DPITS Long line Repeater*** that provides additional power (with AGC), cleans up signals (signal regeneration) and accounts as much as possible for time delay. Laboratory tests using actual twisted pair cable show that the ***DPITS Long line Repeater*** can successfully achieve the following distances:

PANASONIC DPITS REPEATER

Examples of limit distances with the repeater located in various positions using 0.6mm Category 5 cable.

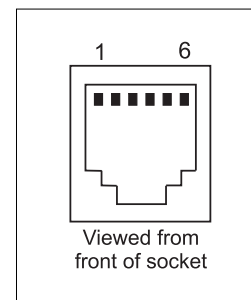
Note: Field conditions such as cable type & junctions will reduce limit distances



2. Connection

2.1 Wiring of the PBX and DPT RJ12 Connectors

PIN	DESCRIPTION
1	
2	Digital L- or H+ (polarity insensitive)
3	Analogue Ring (Lb) pass through
4	Analogue Tip (La) pass through
5	Digital H+ or L- (polarity insensitive)
6	



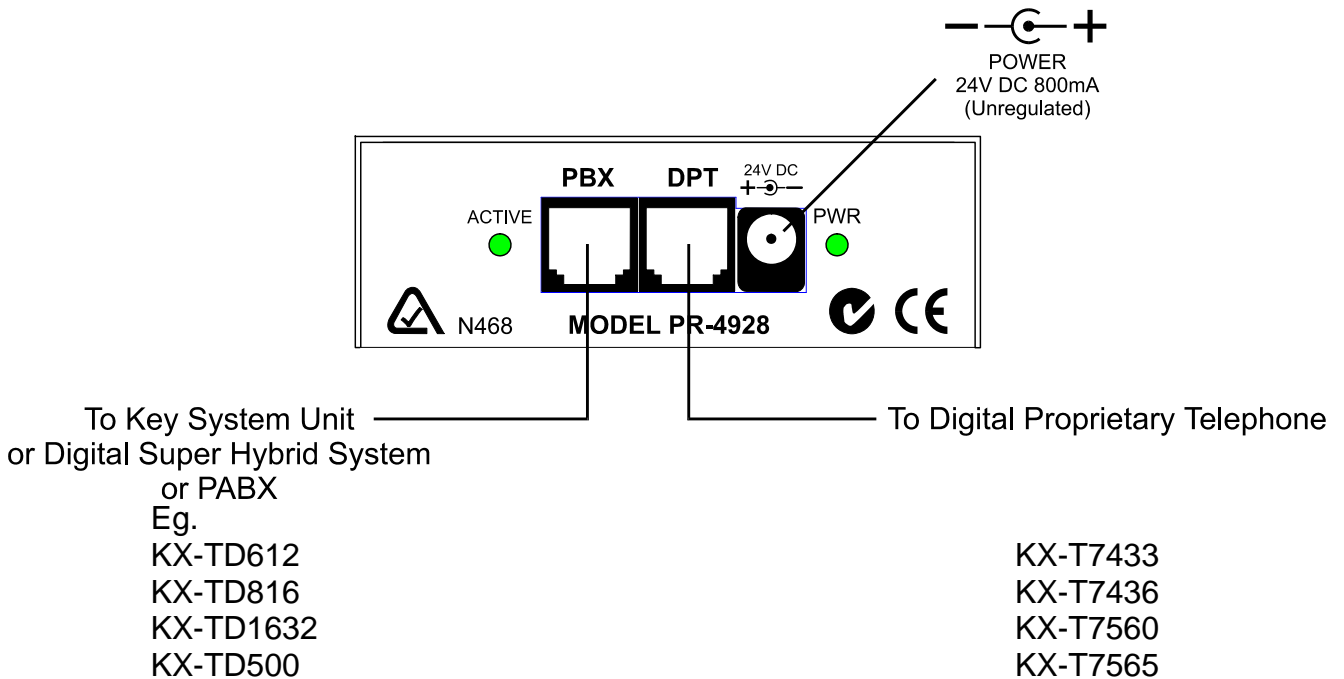
2.2 Power Requirement

The power input requirement is 24 Volts dc, 800mA unregulated, or 30Vdc \pm 10%, 500mA regulated. The power connector is the concentric type with a 2.1mm centre pin and 5.5mm outside dimension. The centre pin is positive and the sleeve is negative.

Please Note: DPTs will not work during mains power failure unless a suitable UPS is used.

2.3 Connection Diagram

- The power input requirement is 24 Volts dc, 800mA unregulated, or 30Vdc \pm 10%, 500mA regulated. The power connector is the concentric type with a 2.1mm centre pin and 5.5mm outside dimension. The centre pin is positive.
- **PBX** stands for Private Branch Exchange (also referred to as DSHS, PABX or KSU). This is an RJ12 connector (six position, four conductor). See previous page for wiring details.
- **DPT** stands for Digital Proprietary Telephone. This is an RJ12 connector. (six position, four conductor). See previous page for wiring details.



Please Note: *The PR-4928 is currently incompatible with the following systems:*

TDA 30 - 36 Ports
TDA 100 - 108 Ports
TDA 200 - 216 Ports
TDA 600 - 648 Ports

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MADE IN AUSTRALIA

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