The unit is one of a range of digital communication trainers and provides all necessary inputs and connections for students to study pulse amplitude modulation / demodulation techniques, time division multiplexing and demultiplexing of signals and signal reconstruction.

**Experiments**
- Study of pulse amplitude modulation technique
- Study of time division multiplexing and demultiplexing
- Study of PLL as frequency multiplier to generate clock from sync signal
- Study of effect of varying duty cycle of sampling pulse on signal reconstruction
- Study of 3 modes of operation to regenerate original signal
- 3 connections between transmitter and receiver (clock, sync & information)
- 2 connections (sync & information). Clock regenerated at receiver
- 1 connection (information only). Clock and sync derived at receiver

**Specification**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystal Frequency</td>
<td>8 MHz</td>
</tr>
<tr>
<td>Analogue Input Channels</td>
<td>4</td>
</tr>
<tr>
<td>Multiplexing</td>
<td>Time Division Multiplexing</td>
</tr>
<tr>
<td>Modulation</td>
<td>Pulse Amplitude Modulation</td>
</tr>
<tr>
<td>On-board Analogue Signal</td>
<td>500Hz, 1kHz, 2kHz and 4kHz (sine wave synchronised to sampling pulse) adjustable amplitude and separate variable DC Level</td>
</tr>
<tr>
<td>Sampling Rate</td>
<td>32, 40, 50 and 80kHz channel (switch selectable)</td>
</tr>
<tr>
<td>Sampling Pulse</td>
<td>With duty cycle variable from 0-90% in decade steps</td>
</tr>
<tr>
<td>Clock Regeneration at Receiver</td>
<td>Using PLL</td>
</tr>
<tr>
<td>Test Points</td>
<td>55</td>
</tr>
<tr>
<td>Power</td>
<td>110-220V, 50kHz/60kHz</td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>W326, H52, D252</td>
</tr>
<tr>
<td>Weight</td>
<td>2.5Kg (approx.)</td>
</tr>
</tbody>
</table>

**Key Features:**
- Functional Blocks indicated via on board mimics
- Test points
- Crystal controlled Clock
- On-board signal generator (Synchronized) DC and Sine
- On-board pulse generator
- Demonstrates sampling and reconstruction as per Nyquist criterion
- 4 Analog input channels (TDM-PAM)
- Four switch selectable sampling frequencies
- Pulse duty cycle selectable
- Generation of clock at receiver by PLL system
- 4th order Butterworth L. P. Filters
Ordering Information

Model Number: 7402

Consists of:
- TDM Pulse Amplitude Modulation / Demodulation Trainer
- Manual
- Power Cord
- Set of patch cables

Notes:
1. Specification is subject to change without notice.
2. All dimensions are in mm unless otherwise stated

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