# Pakistan Telecommunication Authority Standards (PTAS)

# Type Approval Pre-requisite Test Specifications (TAPTS)

# for

# Private Branch Exchanges (PBX)

# Prior to Its Sale in Pakistan (PISP)

(For POTS/ Modem / CLIP / Hands-free services additional requirements of the Pakistan Telecom. Authority should be complied)

## Scope

The Terminal Equipment (TE) shall use either, a 2 wire loop-start access to an analog Public Switched Telephone Network (PSTN) line at the Network Termination Point (NTP), or any one of the several availavle and permitted digital  interfaces for access to D-PSTN. Fixed cellular applications are not permitted in Pakistan. For POTS, CLIP, Fax applications additional PTA standards should be consulted.

PBXs capable of 2 wire DTMF, loop-disconnect, ISDN Primary rate, Basic rate ISDN and Channel Associated Rob-bit (T1/E1) signalings are covered.

This document has been prepared by referencing documents and publications some of which may be obtained from PTA on request.

| Description | Ratings |
|---|---|
| **Trunk Interfaces.** | |
| ***2 Wire Analog Trunk Interface (loop start)*** | |
| Refer to 'PTA POTS' and ITU-T specs | dr PTAS PSTN-TE POTS_2200-01 V01.0, ITU-T G.713, |
| ***4 Wire E&M Trunk Interface*** | |
| All types from Type I ~ Type V are permitted provided that they are provided by the Local Exchange Carrier (LEC) | as per ITU-T G.712 |
| Tone Signalling to PSTN | ITU-T Q.23 |

| Description | Ratings |
|---|---|
| ***Digital Trunk Interface (E1)*** | ITU-T G.703, G.704. |
| Layer 1 | ITU-T I.431 |
| Layer 2 | ITU-T Q.921 |
| Layer 3 | ITU-T Q.931 |
| Signalling for 2 Mbps Trunk Interfaces | ITU-T No. 7 |
| ***Data Trunk Interface*** | ITU-T V.24, V.35, V.11, V.28, V.90 |
| Data Rates | 300 bps ~ 64 kps |
| ***Network Synchronizaton for digital trunks.*** | ITU-T G.822 & G.823 |

| Description | Ratings |
| --- | --- |
| **Subscriber Interfaces** | |
| ***Analog Subscriber Interface*** | |
| 2 Wire | ITU-T G.712 & G.713 |
| ***Digital Subscriber Interface*** | |
| 2 Wire, ISDN BRI 'U' pingpong termination | ITU-T I.430 and G.961 |
| 4 Wire, ISDN BRI | ITU-T I.430 'S' termination. |

| Description | Ratings |
|---|---|
| **Emissions** | |
| **Electromagnetic Emission** | |
| Continuous conducted (class A) | EN 55022 |
| Discontinuous conducted (class A) | EN 55014 |
| Radiated (Class A, 10 meter) | EN 55022 |
| **Electromagnetic Immunity** | |
| Electrostatic Discharge Test | EN 610000-4-2 |
| Electromagnetic Radiated Field of RF | EN 61000-4-3 |
| Electrostatic Fast Transient burst | EN 61000-4-4 |
| Oscilolatory Surge Withstand Capability | ANSI/IEEE C.37.90.1 |

| | |
|---|---|
| Surges | EN 61000-4-5 |
| **Description** | **Ratings** |
| **Impulse Voltage Withstand** | |
| Power Supply, Line Circuits, Subscriber Circuits | 5 KV in common & differential modes |
| **Operational Temperature Range** | 0 to +45 deg C. |
| **Humidity** | 5% to 90% |