Odin TeleSystems Inc

Open Telecom for Open Minds!

Mobile Telephony Platform

White Paper by Vijay Kakumanu – Product Manager

Feb-2004

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Abstract

Handheld devices such as Personal Digital Assistants (PDA's) featuring their small size and portability make them a viable choice for telecom test instruments. Handheld based testing facilitates ease of operation at a low cost. This paper examines the current trends, various metrics involved in choosing a digital network card for a handheld platform.

Overview

With today's fast processors in devices such as handheld units, PDA's make a viable choice for building highly portable telecom test instruments. There are many advantages associated with handheld testing units.

1. Ease of use (field testers)
2. Cost effective when compared to alternative portable devices such as laptop and tablet PC's.
3. Dual functionality. PDA based telecom test instrument allows normal PDA mode of operation when test application is not in use.
4. Lightweight and portable.

Goals of increased portability, beyond what a notebook can provide have driven the deployment of PDA's into the notebook segment. The worldwide demand for handheld units is believed to grow exponentially for the next five years. PDA's equipped with processors of up to 1GHz are expected to flood the market within a year. These new generation handheld devices open doors to a new world of opportunities for computational intensive PDA applications.

Choosing a telephony network card for a handheld platform:

Form Factor: Most of the popular handheld devices offer a Compact Flash or a PCMCIA slot. Some devices offer both. A PCMCIA based digital network card offers mobility and flexibility. PCMCIA based network cards are an ideal choice for building handheld based monitoring systems and line testers.

Scalability: Higher density decrease cost while providing greater functionality. The, number of spans on a PCMCIA card is typically limited to two because of the inherent design and space constraints. Two T1/E1 spans in a PCMCIA form factor helps in building applications that require a loop back feature.

Software Support: Ease of development should be of paramount importance when it comes to choosing the right hardware platform. A flexible and open architecture based software development environment results in faster development time and hence reduces time to market. Network cards should provide support for popular handheld operating systems such as Microsoft Pocket PC.

Potential applications that can be developed using a mobile telephony platform:

1. Telecom T1/E1 line testers: Today, there are a variety of T1 or E1 line testers available in the market. A PDA based T1 tester certainly offers unique advantage since it provides both the functionality of a PDA as well as a handheld test instrument. A handheld T1 or E1 tester is useful in the field.

2. SS7 monitoring: Dual T1/E1 PCMCIA card offers the capability to monitor one SS7 link successfully.

3. SS7 simulation: With a PCMCIA based T1 card, it is possible to simulate various SS7 messages using a handheld unit.

4. Call generators: Bulk calls generators to simulate real world telephony traffic scenarios.

5. Voice quality testing in VoIP networks: Measures voice quality by sending a digitized voice file over the network and receiving the same to compare the voice quality.

Odin's Thor-PCMCIA mobile platform

The combination of a cutting edge handheld operating system from Microsoft and a PCMCIA based T1/E1 platform from Odin provides the perfect platform for telecom test application development on the smallest handheld device. Thor-PCMCIA with Pocket PC 2003 platform support is aimed at telecom test equipment vendors and OEMs. This highly mobile platform can be used to develop many portable applications.

The introduction of Microsoft Pocket PC 2003 support for Thor-PCMCIA will benefit users in rapid handheld T1/E1 based application development thus significantly reducing time to market.

Thor-PCMCIA combined with Microsoft Pocket PC offers a robust highly mobile GUI based platform to develop telecom test applications. Odin's mobile platform comprises of the following components:

1. Pocket PC DLL driver
2. Pocket PC Software development kit
3. Thor-PCMCIA Digital network card

Thor-PCMCIA has the following features:

1. Two on board Texas Instruments DSPs could be used to host applications such as tone signaling, HDLC encoding/decoding, silence detection and variety of other applications.
2. Programmable Line Interface modes of T1 and E1: Odin's line of network cards has the flexibility of selecting between T1 and E1 mode.
3. Multiple Clocking Options: Ability to choose clocking from line interfaces or use the onboard oscillator.
4. High Impedance Mode: Allows non-intrusive monitoring capability. 75, 100 and 120Ohm options are available.

Conclusion

Odin's Thor-PCMCIA range of T1/E1 cards in combination with Microsoft's Pocket PC operating system offers a flexible and powerful mobile T1/E1 platform based on which innovative telecom test applications can be developed. As the PC footprint is getting smaller and smaller, handheld devices with more computing power will flood the market in the future. A PDA based telecom test solution has a clear advantage over a dedicated custom handheld test unit.

About Odin TeleSystems Inc

Odin TeleSystems Inc. is a privately held Texas corporation specializing in manufacturing, design, and sale of OEM-subsystems for the Telecommunications industry. Odin's award-winning products represent outstanding cost/performance value for today's service providers and telecom equipment manufacturers. Innovative and flexible systems enable service providers and equipment manufacturers to provide reliable and leading-edge communications services and products for T1/E1/J1, Integrated Services Digital Networks (ISDN), Frame Relay, Voice over IP (VoIP), Signaling System Number 7 (SS#7), and Digital Wireless (e.g. GSM).
For more information, please visit Odin TeleSystems Inc at http://www.odinTS.com/ or contact the U.S. office at 972-664-0100 or by Email at info@odinTS.com.

HeadQuarters:

Odin TeleSystems Inc
800 E Campbell Rd, Suite#334,
Richardson, Texas 75081
USA
Tel: +1-972-664-0100
Fax: +1-972-664-0855