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## About This Document

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### Summary

This document provides information about the major functions, supported services, system architecture, and technical references of HUAWEI EM770 HSPA Embedded PC Module (hereinafter referred to as the EM770).

The following table lists the contents of this document.

| <b>Chapter</b>               | <b>Describes</b>  |
|------------------------------|---|
| 1 Overview                   | The supported network modes, basic services and functions, and the appearance of the EM770. |
| 2 Features                   | The supported features and technical specifications of the EM770.                           |
| 3 Services and Applications  | The services and applications of the EM770.   |
| 4 System Architecture        | The architecture of the EM770.  |
| 5 Technical Reference        | The technical references of the EM770.  |
| 6 Packing List               | The items contained in the package of the EM770.  |
| A Acronyms and Abbreviations | The acronyms and abbreviations mentioned in this document.                                  |

## History

| Issue | Details   | Date       | Author               | Approved by |
|-------|---|------------|----------------------|-------------|
| 01    | Initial draft completed.                        | 2008-03-20 | Tan Xiao An<br>43652 | XieConglong |
| 02    | Add some technical<br>specification description | 2008-07-18 | Tan Xiao An<br>43652 | XieConglong |
|       |   |            |                      |             |

# Contents

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|   |           |
|---|-----------|
| <b>1 Overview .....</b>                     | <b>6</b>  |
| <b>2 Features .....</b>                     | <b>8</b>  |
| 2.1 Main Features .....                     | 8         |
| 2.2 Technical specifications .....          | 9         |
| 2.2.1 Hardware .....                        | 9         |
| 2.2.2 RF specifications.....                | 12        |
| 2.2.3 Power supply and consumption.....     | 12        |
| 2.2.4 Machnical specification .....         | 15        |
| 2.2.5 Reliability .....                     | 16        |
| 2.2.6 Dashboard .....                       | 17        |
| <b>3 Services and Applications.....</b>     | <b>20</b> |
| 3.1 Packet Data Service .....               | 20        |
| 3.2 SMS.....                                | 20        |
| <b>4 System Architecture .....</b>          | <b>21</b> |
| 4.1 System Architecture.....                | 21        |
| 4.2 Functional Modules .....                | 21        |
| <b>5 Technical Reference.....</b>           | <b>23</b> |
| 5.1 Layer 1 Specifications (Physical) ..... | 23        |
| 5.2 Layer 2 Specifications (MAC/RLC).....   | 23        |
| 5.3 Layer 3 Specifications (RRC).....       | 23        |
| 5.4 Layer 3 NAS/Core Network (MM/CM) .....  | 23        |
| 5.5 GSM Protocol Specifications.....        | 24        |
| 5.6 GPRS Protocol Specifications.....       | 24        |
| 5.7 General Specifications.....             | 24        |
| 5.8 Performance/Test Specifications .....   | 25        |
| 5.9 SIM Specifications .....                | 25        |
| <b>6 Packing List.....</b>                  | <b>26</b> |

# 1 Overview

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HUAWEI EM770 HSPA PC Embedded Module (hereinafter referred to as the EM770) is a high-speed packet access (HSPA) WWAN PC module. It is a multi-mode wireless terminal for business professionals.

The EM770 supports the following standards:

- | High speed uplink packet access (HSUPA)
- | High speed downlink packet access (HSDPA)
- | Universal Mobile Telecommunications System (UMTS)
- | Enhanced data rates for global evolution (EDGE)
- | General packet radio service (GPRS)
- | Global system for mobile communications (GSM)

The EM770 provides the following services:

- | HSUPA/HSDPA/UMTS packet data service
- | EDGE/GPRS packet data service
- | WCDMA/GSM Short Message Service (SMS)
- | WCDMA/GSM voice service

You can connect the EM770 with the Mini PCI Express interface of a computer. In the service area of the HSUPA/HSDPA/UMTS/EDGE/GPRS/GSM network, you can surf the Internet and send/receive messages/emails cordlessly. The EM770 is fast, reliable, and easy to operate. Thus, mobile users can experience many new features and services with the EM770. These features and services will enable a large number of users to use the EM770 and the average revenue per user (ARPU) of operators will increase substantially.

Figure 1-1 shows the profile of the EM770.

**Figure 1-1** EM770 profile



# 2 Features

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## 2.1 Main Features

The EM770 mainly supports the following features:

- | HSUPA/HSDPA/UMTS 2100/1900/850 MHz, GSM/GPRS/EDGE 850/900/1800/1900 MHz
- | HSPA Equalizer and receive diversity
- | HSUPA data service of up to 2 Mbps (can be upgraded to 5.76 Mbit/s)
- | HSDPA data service of up to 7.2 Mbps
- | UMTS PS domain data service of up to 384 kbps
- | EDGE packet data service of up to 236.8 kbps
- | GPRS packet data service of up to 85.6 kbps
- | CS domain data service based on UMTS and GSM
- | SMS based on CS/PS domain of GSM and WCDMA
- | WCDMA/GSM voice service
- | USSD
- | EAP-SIM
- | Personal computer/Smart card (PC/SC) Driver
- | USB Extension Cable, easy to connect
- | Mini PCI Express interface
- | Windows 2000/ Windows XP/ Windows Vista/ Linux 2.6.18 or above

## 2.2 Technical specifications

### 2.2.1 Hardware

Table 2-1 lists the hardware specifications.

**Table 2-1** Hardware specifications

| Item                      | Specifications   |
|---------------------------|--|
| Technical standard        | <ul style="list-style-type: none"> <li>▮ WCDMA/HSDPA R5</li> <li>▮ GSM/GPRS/EDGE R99</li> </ul>  |
| Operating frequency       | HSDPA/UMTS 2100 MHz: <ul style="list-style-type: none"> <li>▮ Uplink: 1920–1980 MHz</li> <li>▮ Downlink: 2110–2170 MHz</li> </ul> HSDPA/UMTS 1900 MHz: <ul style="list-style-type: none"> <li>▮ Uplink: 1850~1910 MHz</li> <li>▮ Downlink: 1930~1990 MHz</li> </ul> HSDPA/UMTS 850 MHz: <ul style="list-style-type: none"> <li>▮ Uplink: 824~849 MHz</li> <li>▮ Downlink: 869~894 MHz</li> </ul> EDGE/GPRS/GSM 1900 MHz: <ul style="list-style-type: none"> <li>▮ Uplink: 1850–1910 MHz</li> <li>▮ Downlink: 1930–1990 MHz</li> </ul> EDGE/GPRS/GSM 1800 MHz: <ul style="list-style-type: none"> <li>▮ Uplink: 1710–1785 MHz</li> <li>▮ Downlink: 1805–1880 MHz</li> </ul> EDGE/GPRS/GSM 900 MHz: <ul style="list-style-type: none"> <li>▮ Uplink: 880–915 MHz</li> <li>▮ Downlink: 925–960 MHz</li> </ul> EDGE/GPRS/GSM 850 MHz: <ul style="list-style-type: none"> <li>▮ Uplink: 824–849 MHz</li> <li>▮ Downlink: 869–894 MHz</li> </ul> |
| External interfaces       | Mini PCI Express interface: supporting PCI Express Mini Card Specification 1.2   |
|                           | Antenna interface: Hirose U.FL-R-SMT   |
| Maximum transmitter power | HSUPA/HSDPA/UMTS 850/1900/2100 MHz: +24dBm (Power Class 3)   |
|                           | GSM/GPRS 850/900 MHz: +33 dBm (Power Class 4)  |
|                           | GSM/GPRS 1800 MHz/1900 MHz: +30 dBm (Power Class 1)  |



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