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## HUAWEI B593s-22TCPU- V200R001B180D20SP00C209 Release Notes V1.0

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## Revision Record

Date	Revision version	FW Version	HW Version	Change Description	Author
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Abbreviations	Description
AC	Alternating Current
ARP	Address Resolution Protocol
AP	Access Point
APN	Access Point Name
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Server
DL	Down Link, Downlink
IP	Internet Protocol
ICMP	Internet Control Message Protocol
LAN	Local Area Network
LED	Light Emitting Diode
LTE	The Fourth Generation
NAT	Network Address Translation
RTT	Radio Transmission Technology
SCP	Service Control Point
SDRAM	Synchronous Dynamic Random Access Memory
TKIP	Temporal Key Integrity Protocol
UMTS	Universal Mobile Telecommunications System
UL	Up Link, Uplink
WAN	Wide Area Network
Wi-Fi	Wireless Fidelity

## 1 Main Features

The B593s-22 supports the following standards:

- Support network environments. The B593s-22 supports LTE FDD Band 1(2100MHz) /Band 3(1800MHz) /Band 7(2600MHz) /Band 8(900MHz)/Band 20(800MHz), LTE TDD Band38(2600MHZ), UMTS FDD Band8(900 MHz)/Band 1(2100MHz), GSM 1900/1800/900/850 MHz .
- High speed experience. Supports maximum throughput of 150 Mbps in the downlink and 50 Mbps in the uplink.
- Built-in DHCP Server and NAT. Provides high-speed routing capability.
- Comprehensive and robust security services. Provides instant protection to block potential security risks and intrusion attempts.
- Supports Windows XP, Windows Vista, Windows 7, Linux, MAC. Compatible with Browser include Internet Explorer, Firefox, Chrome, Safari, Opera.
- Intuitionist and convenient Web-based management.
- Ultrathin and artful appearance.
- Built-in LTE and WLAN high gain antenna. Ensured performance and easy portability. It is optional to select an external antenna, which is to ensure the normal use when the signal strength is weak.
- User-friendly design of LED indicator. Easy to observe the status of equipment.

## 2 Hardware

### 2.1 Version Description

Hardware Version:	Ver.B
Platform & Chipset:	Hi6920

### 2.2 Hardware Specifications

Item	Specifications	
Technical Standard	WAN: LTE/UMTS	
	LAN: IEEE 802.3/802.3u	
	WLAN: IEEE 802.11b/g/n	
Operating Frequency	LTE: FDD 800/900/1800/2100/2600 MHz, TDD 2600 MHz	
	UMTS: 900/2100 MHz	
	WLAN: 2.401–2.483 GHz	
Maximum Transmitter Power	LTE	FDD 800 MHz: 22.6 dBm
		FDD 900 MHz: 22.6 dBm
		FDD 1800 MHz: 22.5 dBm
		FDD 2100 MHz: 22.4 dBm
		FDD 2600 MHz: 22.3 dBm
		TDD 2600 MHz: 22.3 dBm
	UMTS	900 MHz: 23.6dBm
		2100 MHz: 23.5dBm
	GSM	GSM 850: Power Class 4 31.6dBm
		GSM 900: Power Class 4 31.6dBm
		DCS 1800:Power Class 1 29.5dBm
		PCS 1900:Power Class 1 29.5dBm
	WLAN	802.11n: 13 dBm
		802.11g: 16 dBm
		802.11b: 16 dBm
Maximum Power Consumption	≤ 11 W (adapter powered)	
Memory	Flash 512 MB, DDR 256 MB	
External Interfaces	4 Ethernet interface	
	2 POTS interface	
	1 Power interface	
	1 USIM card interface	
	2 External antenna interface	
	1 USB interface	
	1 Reset button	
	1 WLAN button	
	1 WPS button	



	1 Power button	
Antenna	Built-in LTE/UMTS antenna	
	Built-out LTE/UMTS antenna (optional)	
	Built-in WLAN antenna	
Static Receiver Sensitivity	LTE	FDD 800 MHz: -94 dBm@10 MHz
		FDD 900 MHz: -94 dBm@10 MHz
		FDD 1800 MHz: -94 dBm@10 MHz
		FDD 2100 MHz: -97 dBm@10 MHz
		FDD 2600 MHz: -95 dBm@10 MHz
		TDD 2600 MHz: -97 dBm@10 MHz
	UMTS	900 MHz: ≤ -108.5 dBm@3.84 MHz
		2100 MHz: ≤ -108.4 dBm@3.84 MHz
	GSM	GSM850: ≤ -107.6dBm/200KHz
		GSM900: ≤ -107.6dBm/200KHz
		GSM1800: ≤ -107.5dBm/200KHz
		GSM1900: ≤ -107.5dBm/200KHz
	WLAN	802.11n: -64 dBm@65 Mbit/s
		802.11g: -65 dBm@54 Mbit/s
		802.11b: -76 dBm@11 Mbit/s
Power Supply	AC: 100–240 V, 50/60 Hz	
	DC: 12 V, 2A	
Dimensions (H × W × D)	176 mm × 190 mm × 35 mm	
Weight	About 390 g(power adapter excluded)	
Ambient Temperature	<ul style="list-style-type: none"><li>Working temperature: 0°C to +40°C</li><li>Storage temperature: -20°C to +70°C</li></ul>	
Humidity	10% to 95%	

## 3 Firmware

### 3.1 Version Description

Firmware Version:	V200R001B180D20SP00C209
Baseline information	Hisilicon C35 B180 base line

### 3.2 Firmware Specifications

Item	Description
Gateway	Router: Support the default routing (the routing address is 0.0.0.0).
	Support ARP
	Support DNS
	Support DDNS
	Support ICMP

Item	Description
	<p>NAT:</p> <ul style="list-style-type: none"> <li>• Support NAT, NAPT (compliant with RFC2663, RFC3022 and RFC3027)</li> <li>• Support fragment message identification for normal NAT</li> <li>• Support NAT traverse of SIP</li> </ul>
	<p>DHCP Server:</p> <ul style="list-style-type: none"> <li>• The default IP addresses of the DHCP server is from 192.168.1.2 to 192.168.1.254. The default gateway address is 192.168.1.1</li> <li>• The default DHCP lease time is 24 hours</li> <li>• The DHCP Server can be enabled or disabled</li> <li>• The address pool of the DHCP server can be configured</li> <li>• The lease time can be configured</li> <li>• The IP address status can be displayed, such as the host name, MAC address, IP address, and remaining lease</li> <li>• Support static IP reserve</li> </ul>
USB Storage	<ul style="list-style-type: none"> <li>• Support FTP</li> </ul>
	<ul style="list-style-type: none"> <li>• Support Samba</li> </ul>
	<ul style="list-style-type: none"> <li>• Support DLNA</li> </ul>
Data service	<ul style="list-style-type: none"> <li>• Downlink FDD LTE packet data service of up to 150 Mbit/s</li> <li>• Uplink FDD LTE packet data service of up to 50 Mbit/s</li> <li>• Downlink TDD LTE packet data service of up to 80 Mbit/s (configuration 1)</li> <li>• Uplink TDD LTE packet data service of up to 20 Mbit/s (configuration 1)</li> <li>• Downlink TDD LTE packet data service of up to 112 Mbit/s (configuration 2)</li> <li>• Uplink TDD LTE packet data service of up to 10 Mbit/s (configuration 2)</li> <li>• DC-HSPA+ downlink packet data service at a maximum transmission rate of 43.2 Mbit/s</li> <li>• HSPA+ downlink packet data service at a maximum transmission rate of 21.6 Mbit/s</li> <li>• HSPA downlink packet data service at a maximum transmission rate of 14.4 Mbit/s</li> <li>• DC-HSPA+/HSPA+/HSPA uplink packet data service at a maximum transmission rate of 5.76 Mbit/s</li> </ul>
LAN	10 Mbit/s and 100 Mbit/s auto-negotiation
	MDI/MDIX auto-sensing

Item	Description
	IEEE802.3/802.3u is compatible
WLAN	Broadcast and hide the SSID
	Authentication: <ul style="list-style-type: none"> <li>• Open System and shared key authentication</li> <li>• 64/128-digit WEP encryption</li> <li>• 256-digit WPA-PSK/ WPA2-PSK encryption</li> <li>• TKIP ciphering algorithm</li> <li>• AES ciphering algorithm</li> <li>• TKIP and AES ciphering algorithm synchronously</li> </ul>
	MAC address authentication: up to 8 MAC address items
	Ratio adjustment: <ul style="list-style-type: none"> <li>• Automatically</li> </ul>
	STA management: support limit of access users (up to 32 users)
Access Device Management	Manage access device
Upgrade	Auto http upgrade and local upgrade
SIM	PIN Management, SIM card Authentication
Dial-up	Support automatic, manual connect
Configuration import and export	Encryption backup current settings and restore the backup settings
SNTP	Support DST(Daylight Saving Time)
Maintenance	Export current diagnosis results and operation logs
System requirement	CPU: Pentium 500 MHz or above Memory: 128 MB RAM or above Hard disk: 50 MB free disk space OS: Windows XP/Windows Vista/ Windows 7/ Linux/Mac Display resolution: 800 × 600 or above (1024 × 768 is recommended) Internet Explorer: IE7.0,8.0/firefox3.6/safari5.0/opera10/chrome8 or above

### 3.3 Improvement in the Previous Version

Index	Case ID	Issue Description
Firmware Version		V200R001B180D20SP00C209
Previous Version	Firmware Version	/



Index	Case ID	Issue Description
1	New Features	N/A

## 4 WebUI

### 4.1 WebUI Specifications

Item	Description	
Gateway	Parameter configuration	LAN: <ul style="list-style-type: none"><li>• DHCP</li><li>• IP address</li></ul>
		WLAN: <ul style="list-style-type: none"><li>• Wireless status</li><li>• SSID</li><li>• Mode (802.11 b/g/n)</li><li>• Channel</li><li>• Hidden SSID</li><li>• Tx Power</li><li>• Authentication (Open System and Shared Key)</li><li>• Security (WEP, WPA and WPA2)</li><li>• Access list (MAC)</li><li>• Country</li></ul>
		WAN: <ul style="list-style-type: none"><li>• WAN connection profile, such as user name, password, APN</li><li>• Network mode</li><li>• Network selection</li><li>• Data APN</li></ul>
		Firewall: <ul style="list-style-type: none"><li>• LAN MAC Filter</li><li>• IP Filter</li><li>• SPI filter</li><li>• URL Filter</li><li>• DMZ</li><li>• Port Forward</li><li>• Service Access Control</li></ul>

Item	Description	
	Status	<ul style="list-style-type: none"> <li>• Signal strength</li> <li>• Network type</li> <li>• Network connection status</li> <li>• SIM card status</li> <li>• System mode, and so on</li> </ul>
	Other functions	Network connection settings:
		<ul style="list-style-type: none"> <li>• Automatic network registration</li> <li>• Manual network registration</li> </ul>
		Selection of network connection types: Auto/4G/3G/2G
		PIN management: Enable/Disable PIN verification
		USB Storage:
		<ul style="list-style-type: none"> <li>• FTP</li> <li>• Samba</li> <li>• DLNA</li> </ul>

## 5 Reference

### 5.1 Standards and Communication Protocols of the Products

Item	Description
Physical layer	RFC894
ARP	RFC826
IP	RFC791, RFC1122, RFC1071, RFC1141, RFC1624, RFC792, RFC950, RFC1256
ICMP	RFC792, RFC950, RFC1256
TCP	RFC793
UDP	RFC768
DHCP	RFC1531, RFC1533
NAT	RFC1631

### 5.2 Standards and Communication Protocols of the Wireless Uu Interface

FDD-LTE R9  
 WCDMA/HSDPA R5  
 HSUPA R6

HSPA+ R7  
DC-HSPA+ R8  
GSM/GPRS/EGPRS R6

Item	Description
Layer1 Specifications (Physical)	3GPP TS 36.211, "Physical channels and modulation" 3GPP TS 36.212, "Multiplexing and channel coding" 3GPP TS 36.213, "Physical layer procedures" 3GPP TS 36.214, "Physical layer; Measurements"
Layer 2 Specifications (MAC/RLC/PDCP)	3GPP TS 36.321, "Medium Access Control (MAC) protocol specification" 3GPP TS 36.322, "Radio Link Control (RLC) protocol specification" 3GPP TS 36.323, "Packet Data Convergence Protocol (PDCP) specification"
Layer 3 Specifications (RRC)	3GPP TS 36.331, "Radio Resource Control (RRC); Protocol specification"
Layer 3 NAS/Core Network (MCM)	3GPP TS 24.301, "Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS)"
General Specifications	3GPP TS 36.201, "LTE physical layer; General description" 3GPP TS 36.300, "Overall description"
Performance/Test Specifications	3GPP TS 36.508, "Common test environments for User Equipment (UE) conformance testing" 3GPP TS 36.509, "Special conformance testing functions for User Equipment (UE)" 3GPP TS 36.521-1, "User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Conformance testing" 3GPP TS 36.521-2, "User Equipment (UE) conformance specification; Radio transmission and reception; Part 2: Implementation Conformance Statement (ICS)"
USIM Specifications	3GPP TS 31.102, "Characteristics of the Universal Subscriber Identity Module (USIM) application"