WLAN

Huawei WLAN ● Wi-Fi Experience
Interoperability Test Reports

Test Report on Terminal Compatibility of Huawei's WLAN Products

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HUAWEI

1 Overview

WLAN technology defined in IEEE 802.11 is gaining wide popularity today. WLAN access can replace wired access as the last-mile access solution in scenarios such as public hotspot, home broadband access, and enterprise wireless offices. Compared with other wireless technologies, WLAN is easier to operate and provides higher bandwidth with lower costs, fully meeting user requirements for high-speed wireless broadband services.

Wi-Fi terminals are major carriers of WLAN technology and play an essential part in WLAN technology promotion and application. Mature terminal products available on the market cover finance, healthcare, education, transportation, energy, and retail industries. On the basis of WLAN technology, the terminals derive their unique authentication behaviors and implementation methods, for example, using different operating systems. Difference in Wi-Fi chips used by the terminals presents a big challenge to terminal compatibility of Huawei's WLAN products.

Figure 1-1 Various WLAN terminals

To identify access behaviors and implementation methods of various WLAN terminals and validate Huawei WLAN products' compatibility with the latest mainstream terminals used in various industries, Huawei WLAN product test team carried out a survey on mainstream terminals available on market. Based on the survey result, the team used technologies and methods specific to the WLAN field to test performance indicators of Huawei's WLAN products, including the access capability, authentication and encryption, roaming, protocol, and terminal identification. The test aims to validate terminal compatibility of Huawei's WLAN products and provides compatibility-related references and instructions.

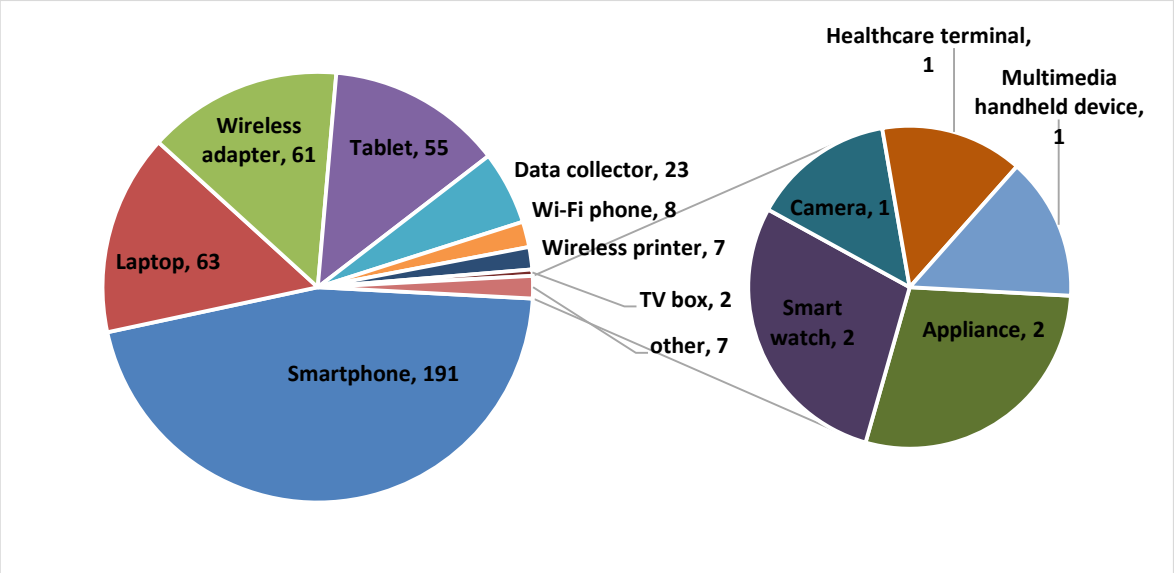
2 Test Items

Given different implementation methods and access behaviors of terminals, the test verifies the compatibility between Huawei WLAN devices and mainstream terminals in the market, covering basic Wi-Fi connection protocols and roaming. The test results show that Huawei's WLAN products are compatible with mainstream terminals. The WLAN functions kept available during the test.

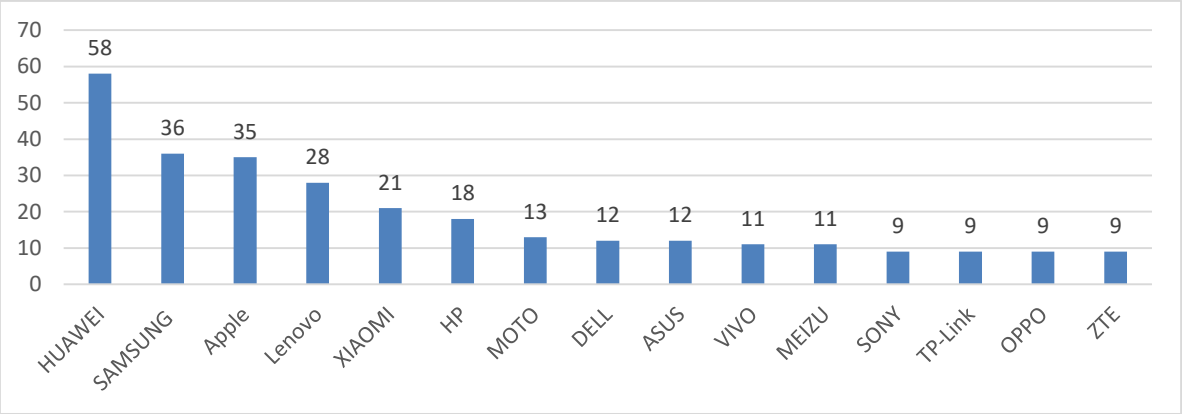
3 Terminal List

The WLAN terminal compatibility test team analyzes WLAN terminals from multiple dimensions, including the operating system, Wi-Fi chip, terminal type, and manufacturer. The test selects the final test objects based on the ranking of mainstream websites, and verifies terminal compatibility with Huawei interoperation lab as the test platform.

Until now, a total of 417 terminals are selected for the test, including 191 mobile phones, 63 laptops, 55 tablets, 61 wireless adapters, 23 data collectors, 8 Wi-Fi phones, 7 wireless printers, 2 TV boxes, 2 appliances, 2 smart watches, 1 multimedia portable entertainment device,1 camera ,and 1 healthcare terminal.



The terminals come from mainstream manufacturers in the industry, including Apple, Lenovo, HP, Acer, Samsung, Dell, ASUS, Toshiba, Sony, Fujitsu, HTC, Huawei, Coolpad, ZTE, Xiaomi, MEIZU, Nokia, BlackBerry, and Hasee. The following chart shows the number of tested terminals from top manufacturers.



Operating systems of these terminals cover the mainstream mobile and desktop operating systems, including iOS, Android, and Windows, and other operating systems such as BlackBerry.

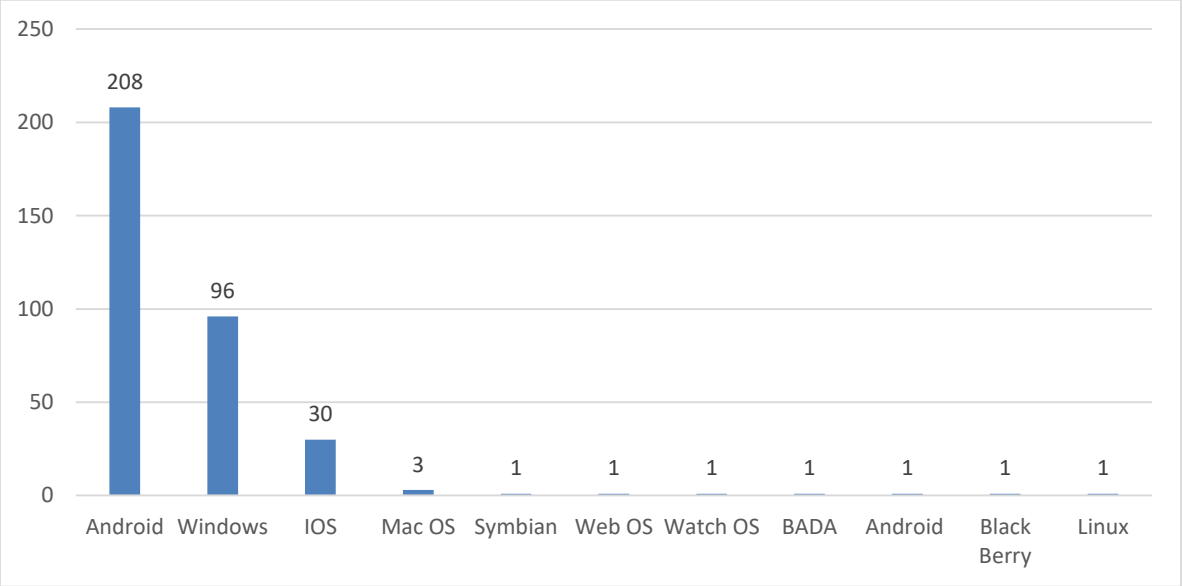


Table 3-1 Laptops

Brand	Model	Operating System	Wi-Fi Chip
DELL	Dell XPS 9370	Windows 10	
DELL	E6400	Windows xp sp3	Intel Centrino Ultimate-N 6300 AGN
DELL	G7	Windows 10	Intel AX200
DELL	Ins15ud-4748S	Windows 7	Intel Dual band Wireless-AC 3160
DELL	Inspiron 14 3000	Windows 8.1	Dell Wireless 1705 802.11b/g/n(2.4GHZ)
DELL	Inspiron 15 5000	Windows 7	
DELL	Inspiron N4110	Windows xp sp3	Intel wifi link 5300 AGN
DELL	Latitude 14 5000	Windows 7	
DELL	Latitude E5250	Windows 8.1	Intel Dual Band Wireless-AC 7265

DELL	Latitude E5400	Windows xp sp3	Intel wifi link 5300 AGN
DELL	M4600	Windows 7	DW1501 Wireless_N WLAN Half-Mini
DELL	XPS11R	Windows 10	Intel Dual Band Wireless-AC 7260
TOSHIBA	C850-T07B	Windows 7	Reltek RTL8188CE-Wireless LAN 802.11N PCI-E-NIC
TOSHIBA	L850-T01B	Windows 7	Atheros AR9485 Wireless Network Adapter
TOSHIBA	R30-A	Windows 7	Atheros AR946x Wireless Network Adapter
Fujitsu	LIFEBOOK LH531	Windows xp sp3	Intel wifi link 5300 AGN
Acer	S3-951-2464G52nss	Windows 7	Broadcom 802.11n
Acer	S4250-E302GMnKK	Windows xp sp3	Atheros AR5B1252 Wireless Network Adapter
Acer	W5000-C62G03iss	Windows 7	Atheros AR5BW225 Wireless Network Adapter
ASUS	A45V	Windows 7	Atheros AR9485 Wireless Network Adapter
ASUS	N43EI241SL-SL	Windows 7	Atheros AR9002WB-1NG Wireless Network Adapter
ASUS	N53XI245SM-SL	Windows 7	Ahteros AR9002WB-1NG Wireless Network Adapter
ASUS	R557L1	Windows 10	Atheros AR956x Wireless Network Adapter
ASUS	U4000	Windows 10	Intel Dual Band Wireless-AC 8260
ASUS	X54XI235HR-SL	Windows 7	Broadcom 802.11g
HP	2540p	Windows xp sp3	Intel Centrino Advanced-N 6200 AGN
HP	4436S	Windows xp sp3	Ralink RT5390 802.11n b/g/n wifi adapter
HP	8440p	Windows 7	USB-DWA 133
HP	8470p	Windows 7	Intel Centrino Ultimate-N 6300 AGN
HP	EliteBook 1040 G3	Windows 10	
HP	Elitebook	Windows 7	Intel Dual Band Wireless-N 7265
HP	Folio1040 G2	Windows 7	Intel Dual Band Wireless-N 7265
HP	GTX 3	Windows 10	
HP	OMEN 15-ce001TX	Windows 10	Realtek RTL8822BE 802.11ac PCI-E Adapter
HP	OMEN 15-dc1068TX	Windows 10	Intel Wireless-AC 9560
HP	Pavilion 14 X360	Windows 10	Intel Wireless-AC 9461
HP	Pavilion G4	Windows 8	Ralink RT5390 802.11n b/g/n wifi adapter
HP	ProBook 430G2	Windows 8.1	Broadcom BCM943228HMB
HP	Probook 440 G4	Windows 10	Realtek RTL8723BE 802.11 bgn Wi-Fi Adapter
Lenovo	G470AL	Windows xp sp3	Ahteros AR285 Wireless Network Adapter
Lenovo	K2450	Windows 7	Intel Wireless-N 7260
Lenovo	L440	Windows 7	Intel Dual Band Wireless-AC 7260

Lenovo	ThinkPad E425	Windows 8	1*1 11b/g/n wireless LAN PCI Express Half Mini card Adapter
Lenovo	ThinkPad S1 Yoga	Windows 8.1	Intel Dual Band Wireless-AC 7260
Lenovo	ThinkPad S220 5038A25	Windows 7	1*1 11b/g/n wireless LAN PCI Express Half Mini card Adapter
Lenovo	ThinkPad T410	Windows 7	Intel Centrino Advanced-N 6200 AGN
Lenovo	ThinkPad T420	Windows xp sp3	Intel Centrino Advanced-N 6205
Lenovo	ThinkPad T420i 4179GPC	Windows xp sp3	1*1 11b/g/n wireless LAN PCI Express Half Mini card Adapter
Lenovo	ThinkPad X1	Windows 7	Intel Centrino Advanced-N 6205
Lenovo	ThinkPad X220	Windows 7	Intel Centrino Advanced-N 6205
Lenovo	ThinkPad X260	Windows 10	Intel Dual Band Wireless-AC 8260
Lenovo	V480A	Windows xp sp3	Intel Centrino Wireless-N 2230
Lenovo	Xiaoxin Chao 7000	Windows 10	Realtek 8821CE Wireless LAN 802.11ac PCI-E NIC
Lenovo	Xiaoxin Pro 13	Windows 10	Atheros QCA61*4A Wireless Network Adapter
Lenovo	Zhaoyang K42-80	Windows 10	Atheros QCA61x4A Wireless Network Adapter
Apple	Apple MacBook Pro	Mac OS 11.14	
Apple	Macbook Air 11	Windows 7	Broadcom 802.11ac network adapter
Apple	Macbook Pro 13.3	Mac OS X10.8.3	AirPort Extreme（Broadcom BCM43xx 1.0）
SAMSUNG	950XBE-X02	Windows 10	
SAMSUNG	NP530U3B-A01CN	Windows 7	Intel Centrino Advanced-N 6230
SONY	SVS13117EC	Windows 7	Intel Centrino Advanced-N 6235
SONY	SVS13118EC	Windows 7	Intel Centrino Ultimate-N 6300 AGN
SONY	SVS131A11T	Windows 7	

Table 3-2 Smartphones

Brand	Model	Operating System
360	Q5plus	Android 6.0.1
HTC	Diamond II	Windows Mobile @6.5 ce
HTC	Hero	Android 1.5
HTC	HTC 10	Android 6.0.1
HTC	HTC ONE X9	Android 6.0
HTC	M8si	Android 5.0.2
HTC	Sprint 4G(HTC_T9199)	Windows Mobile @6.5 ce
HTC	T328d	Android 4.0.3
HTC	TouchFLO 3D	Windows Mobile @6.1 ce
LG	G5	Android 6.0.1

LG	V10	Android 6.0
OPPO	Find X	Android 8.1
OPPO	K1	Android 8.1
OPPO	R11s	Android 7.1.1
OPPO	R15	Android 8.1
OPPO	R15X	Android 8.1
OPPO	R17 Pro	Android 8.1
OPPO	R7s	Android 5.1.1
OPPO	R9	Android 5.1
OPPO	Reno3	Android 10
TCL	M2U	Android 4.4.4
VIVO	IQOO	Android 9
VIVO	IQOO3	Android 9
VIVO	VIVO NEX	Android 8.1
VIVO	X20 PLUS	Android 7.1.1
VIVO	X21	Android 8.1
VIVO	X27	Android 9
VIVO	X30	Android 9
VIVO	X5 ProD	Android 5.0
VIVO	X7	Android 5.1.1
VIVO	X7 plus	Android 5.1.1
VIVO	Z3	Android 8.1
Smartisan	Smartisan M1L	Android 6.0.1
Google	Nexus 5X	Android 7.0
Google	Pixel XL	Android 7.1
BlackBerry	9780 3G wifi	Black Berry 6
HUAWEI	ARE-AL00B	Android 7.0
HUAWEI	Ascend P1	Android 4.0
HUAWEI	D1	Android 4.0
HUAWEI	Enjoy 10	Android 9
HUAWEI	Enjoy 5S	Android 5.1
HUAWEI	G9 Lite	Android 4.3
HUAWEI	G9plus	Android 6.0
HUAWEI	HIMA	Android 5.1
HUAWEI	Honor 20	Android 9
HUAWEI	Honor 30pro	Android 10
HUAWEI	Honor 30pro+	Android 10
HUAWEI	Honor 3C	Android 4.2.2
HUAWEI	Honor 6	Android 4.4.2
HUAWEI	Honor 7	Android 5.0
HUAWEI	Honor 8	Android 6.0

HUAWEI	Honor 9	Android 7.0
HUAWEI	Honor Play 5A	Android 6.0.1
HUAWEI	Honor Play 5C	Android 6.0
HUAWEI	Honor Play 5X	Android 5.1.1
HUAWEI	Honor Play 6X	Android 6.0
HUAWEI	Honor V30	Android 10
HUAWEI	Honor V8	Android 5.0
HUAWEI	Honor X1S	Android 4.4.2
HUAWEI	IDEOS X5	Android 2.2.1
HUAWEI	M2-101L	Android 5.1.1
HUAWEI	Mate	Android 4.1.2
HUAWEI	Mate 10	Android 8.0
HUAWEI	Mate 20	Android 9
HUAWEI	Mate 30	Android 10
HUAWEI	Mate 40 Pro	Android 10
HUAWEI	Mate 7	Android 4.4
HUAWEI	Mate 8	Android 6.0
HUAWEI	Mate 9	Android 8.0
HUAWEI	Mate S	Android 4.4
HUAWEI	Nova3	Android 8.1
HUAWEI	Nova6	Android 10
HUAWEI	P10	Android 8.0
HUAWEI	P10plus	Android 5.1
HUAWEI	P20	Android 8.1
HUAWEI	P30	Android 9
HUAWEI	P40	Android 5.1
HUAWEI	P40pro	Android 5.1
HUAWEI	P7	Android 4.4.2
HUAWEI	P8	Android 5.0
HUAWEI	P9	Android 6.0
HUAWEI	P9plus	Android 7.0
HUAWEI	S8600	Android 2.3.4
HUAWEI	U8800	Android 2.2.2
HUAWEI	U8860	Android 2.3.6
Gionee	M6 plus	Android 6.0
Gionee	S8	Android 6.0
Coolpad	8180	Android 2.3.7
Coolpad	9930	Android 2.3.7
Coolpad	Dazen F1	Android 4.2.2
LETV	Letv Max2	Android 6.0.1
LETV	Letv Phone 1	Android 5.0

LETV	Letv X600	Android 5.0.2
LETV	Letv X900+	Android 6.0.1
Lenovo	3G W100	Android 1.6
Lenovo	K50	Android 5.0
Lenovo	LePhone	Android 2.3.6
Lenovo	P2c72	Android 6.0.1
Lenovo	S2005A-H	Android 2.3
Lenovo	Z6 Pro	Android 9
MEIZU	16T	Android 9
MEIZU	16th	Android 8.1
MEIZU	16X	Android 8.1
MEIZU	M9	Android 2.2
MEIZU	Meizu PRO 5	Android 5.1
MEIZU	MX3	Android 4.2.1
MEIZU	MX4	Android 5.1
MEIZU	MX4 PRO	Android 4.4.4
MEIZU	MX6	Android 7.1.1
MEIZU	Note MAX	Android 6.0
MEIZU	Note9	Android 9
MOTO	Moto Z	Android 7.1.1
MOTO	XT882	Android 2.3
NOKIA	C5-03	SymbianS60V5
Apple	iPhone 11	IOS 13
Apple	iPhone 11 Pro	IOS 13
Apple	iPhone 11 Pro Max	IOS 13
Apple	iPhone 12	IOS 14.3
Apple	iPhone 4	IOS 4
Apple	iPhone 5C	IOS 7.1
Apple	iPhone 5S	IOS 7.03
Apple	iPhone 6	IOS 8.1
Apple	iPhone 6 plus	IOS 8
Apple	iPhone 6S	IOS 9.1.0
Apple	iPhone 7	IOS 10.1.1
Apple	iPhone 7 plus	IOS 10.2
Apple	iPhone 8	IOS 11.0.3
Apple	iPhone SE	IOS 10.0 Beta2
Apple	iPhone SE2	IOS 13.4
Apple	iPhone X	IOS 11.3.1
Apple	iPhone Xr	IOS 12
Apple	iPhone Xs	IOS 12.3.1
Apple	iPhone XS Max	IOS 12

SAMSUNG	A9	Android 6.0.1
SAMSUNG	A90	Android 9
SAMSUNG	Galaxy S20	Android 10
SAMSUNG	GT-8500	BADA 1.0
SAMSUNG	i8000	Windows Mobile @6.5 ce
SAMSUNG	J3 Pro	Android 5.1.1
SAMSUNG	Note 10plus	Android 9
SAMSUNG	Note 20	Android 10
SAMSUNG	Note 3	Android 4.3
SAMSUNG	Note 4	Android 6.0.1
SAMSUNG	Note 5	Android 5.0.1
SAMSUNG	Note 9	Android 8.1
SAMSUNG	S II（i9100）	Android 2.3
SAMSUNG	S10	Android 9
SAMSUNG	S3	Android 4.1.2
SAMSUNG	S4	Android 4.4.2
SAMSUNG	S5	Android 4.4.2
SAMSUNG	S5 G900F(Europe)	Android 5.0
SAMSUNG	S5830i	Android 2.3.6
SAMSUNG	S6 Edge	Android 7.0
SAMSUNG	S7	Android 6.0.1
SAMSUNG	S7 Edge	Android 6.0.1
SAMSUNG	S9	Android 8.0
SONY	Xperia MT25i	Android 4.0.4
SONY	Xperia XZ3	Android 9
Microsoft	Lumia 535	Windows Phone 8.1
Microsoft	Lumia 640XL	Windows 8.1
Microsoft	Lumia 920	Windows Phone 8
Microsoft	Lumia 950	Windows 10
XIAOMI	CC9 Pro	Android 9
XIAOMI	MI 1SC	Android 4.0.4
XIAOMI	MIX2	Android 7.1.1
XIAOMI	Note	Android 4.4
XIAOMI	Note Pro	Android 5.0.2
XIAOMI	Redmi 3s	Android 6.0.1
XIAOMI	Redmi K20	Android 9
XIAOMI	Redmi K30	Android 10
XIAOMI	Redmi Note7	Android 9
XIAOMI	Xiaomi Mi 10	Android 10
XIAOMI	Xiaomi Mi 4c	Android 4.4.4
XIAOMI	Xiaomi Mi 5	Android 6.0

XIAOMI	Xiaomi Mi 6	Android 8.0
XIAOMI	Xiaomi Mi 8	Android 8.1
XIAOMI	Xiaomi Mi 9	Android 9
XIAOMI	Xiaomi Mi 9SE	Android 9
XIAOMI	Xiaomi Mi MAX	Android 6.0
XIAOMI	Xiaomi Mi MIX3	Android 9
OnePlus	6T	Android 9
OnePlus	7T Pro	Android 10
ZTE	AXON	Android 5.0.2
ZTE	Axon 10 Pro	Android 10
ZTE	Axon 9 Pro	Android 8.1
ZTE	Blade V10	Android 9
ZTE	Nubia Z11 Max	Android 5.1.1
ZTE	Nubia Z7 Mini	Android 4.4.2
ZTE	Nubia Z9	Android 5.0.2
ZTE	U880E	Android 2.3.7
ZTE	U970	Android 4.0.3

Table 3-3 Tablets

Brand	Model	Operating System
Hasee	A10B D1	Windows 7
Hasee	A120	Android 4.0.3
ASUS	Eee Pad MeMO 171	Android 3.2.1
ASUS	Eee pad Slider SL101	Android 3.2.1
ASUS	Eee pad Transformer F101	Android 3.0.1
Jumper	EZpad 6s Pro	Windows 10
SAMSUNG	Galaxy Tab A(2017)	Android 8.1
Lenovo	IdeaPad 2010A-F	Android 3.2
HUAWEI	IDROS S7 Slim	Android 2.2.2
Apple	iPad 2	IOS 6
Apple	iPad Air	IOS 7.03
Apple	iPad Air 5	IOS 12.1
Apple	iPad Mini	IOS 12
Apple	iPad Mini5	IOS 12.3.1
Apple	iPad Pro	IOS 9.3.2
Apple	iPad Pro A1852	IOS 11.4.1
Apple	iPad Pro A1876	IOS 12.1
Apple	iPad Pro A1980	IOS 12.1.4
Lenovo	LePad K1	Android 3.1

Lenovo	LePad S2005A-H 2G	Android 2.3.6
Lenovo	LePad S2007A-D	Android 3.2
HUAWEI	Media PAD 10 FHD	Android 4.0.4
HUAWEI	MediaPad M1（S8-301W）	Android 4.4.2
HUAWEI	MediaPad M1（S8-303L）	Android 4.2
HUAWEI	MediaPad S7-301u	Android 3.2
HUAWEI	MediaPad T1-821L	Android 4.4.4
MOTO	Moto MZ606	Android 3.0.1
MOTO	Moto XOOM	Android 3.0.1
Newsmy	NEW PAD A2	Android 4.0.3
Newsmy	NEW PAD T7	Android 4.0.3
TECLAST	P10(M3F5)	Android 7.1.2
Lenovo	PAD A1-07	Android 2.3.4
Microsoft	Surface	Windows 8
Microsoft	Surface Pro 3	Windows 10
Microsoft	Surface Pro 6	Windows 10
EBEN	T4	Android 2.3.4
SAMSUNG	Tab A 10.5	Android 8.1
SAMSUNG	Tab E	Android 4.4.4
SAMSUNG	Tab P3110	Android 4.0
SAMSUNG	Tab P6200	Android 3.2
SAMSUNG	Tab P7300	Android 3.1
SAMSUNG	Tab P7310	Android 3.2
SAMSUNG	Tab S4	Android 8.1
SAMSUNG	Tab2 7.0 p3100	Android 4.0.3
SAMSUNG	Tab2 7.7 p6800 16G	Android 3.2
SAMSUNG	Tab2 p5110	Android 4.0.3
SONY	Tablet S	Android 3.2
SONY	Tablet SGP1T112CN/S	Android 3.2
SONY	Tablet SGPT111CN/S	Android 3.2
SONY	Tablet SGPT212CN/H	Android 3.2
HP	Touchpad	Web OS 3.0.4
ViewSonic	View pad 7	Android 2.2.2
TECLAST	X98 Air 3G	Windows Phone 8.1
XIAOMI	Xiaomi Mi Pad2	Windows 10
XIAOMI	Xiaomi Mi Pad4	Android 8.1

Table 3-4 Wireless adapters

Brand	Model

SMC	Portable WiFi3
ASUS	F7D4101
SMC	BL-150SM
Intel	KW-157ON
Intel	CF-912AC
MERCURY	CF-WU810N
TP-Link	CF-WU815N
TP-Link	DWA 133
ToTo Link	DWA-140
Netgear	FW150UH
ASUS	FW150UM
ASUS	FW150US
IWNCOMM	FW300UM
Intel	5300 dual-band NIC
Netgear	5350 dual-band NIC
B-LINK	AX200
COMFAST	Intel 6000
COMFAST	G200U 11bg NIC
COMFAST	N300U 11n 300M NIC
Founder	NW360
D-Link	RTL8192SU 802.11N
D-Link	11b/g packet capture NIC
Belkin	11n dual-band 150 m packet capture NIC
FAST	U1
FAST	U12
FAST	U6
FAST	W51U
ipTIME	W541U
Huada	802.11n N500UA
Intel	721 wireless adapter 150M
Card-king	721 wireless adapter 300M
Cisco	TL-WDN5200H
Cisco	TL-WDN6200
Cisco	TL-WN322G+
Cisco	TL-WN725N
Cisco	TL-WN821N
MERCURY	TL-WN821N v3.0 11n 300M
MERCURY	TP-Link821N
MERCURY	WL-WN688A2
MERCURY	Dual-band wireless adapter (WAPI)
ipTIME	HED08W04SUA

Netcore	11bg NIC
EDUP	AC1200 NIC
360	AC68 NIC
Netcore	54M NIC
TP-Link	MW150UM
TP-Link	MW150US
TP-Link	MW150US (free driver)
TP-LINK	MW300UM
TP-LINK	Linksys AC600
TP-Link	Linksys AE3000
TP-Link	Linksys NG-AC NIC
Tenda	Linksys WUSB600N V1
Tenda	Linksys WUSB600N V2
Tenda	A6200 Wifi USB Adapter
Netgear	BCM chip
Tenda	USB NIC
Tenda	WNDA3100v2-RangeMax
IWNCOMM	AirSec WL T3324U
Wavlink	WAPI 11bg NIC
Netgear	Portable WiFi

Table 3-5 Other terminals

Terminal Type	Brand	Model	Operating System
Wi-Fi phone	Spectralink	8440	-
Wi-Fi phone	Cisco	8821	-
Wi-Fi phone	Cisco	CP-7925G	-
Wi-Fi phone	DYNA	E10	Windows CE
Wi-Fi phone	HUAWEI	eSpace 8950	Android 4.2.2
Wi-Fi phone	Ascom	i62	-
Wi-Fi phone	Flyingvoice	IP622W	-
Wi-Fi phone	Cisco	WIFI DX70	Android 4.4.1
TV box	Apple	Apple TV	IOS 7.0.1
TV box	HUAWEI	Huawei MediaQ	Android 4.1
Multimedia handheld device	Apple	Ipod Touch5	IOS 8.2
Camera	XIAOMI	MJSXJ03CM	-
Data collector	Seuic	AUTOID8R-S5W4	Windows CE 6.0
Data collector	Keyence	BT-W250GSS	Windows embedded 7.00
Data collector	MOTO	C40	Android 4.1.1

Data collector	Intermec	CK3R	Windows CE 5.2
Data collector	Honeywell	Dolphin 6100	Windows CE 5.00
Data collector	Datalogic	Falcon X3	-
Data collector	Datalogic	Falcon X3plus	Windows CE 6.0
Data collector	Unitech	HT680	Windows CE 5.00
Data collector	MOTO	MC3190-Z	Windows Mobile 6.5 Classic Edition
Data collector	MOTO	MC32N0	Windows CE
Data collector	MOTO	MC40	Android 4.1
Data collector	MOTO	MC40N0	Windows CE 5.00
Data collector	MOTO	MC55A0	Windows CE 5.2.29217
Data collector	MOTO	MC7090CN	Windows CE 5.00
Data collector	MOTO	MC9090	Windows CE
Data collector	MOTO	MC9190	Windows CE
Data collector	Zebra	MC9200	-
Data collector	NEWLAND	NLS-PT80	Linux
Data collector	LANDI	P990	Android 4.2.2
Data collector	Honeywell	ScanPal EDA50	Android 4.4.4
Data collector	Datalogic	skorplo	Android 4.4.4
Data collector	UROVO	UROVO-i60XX	Windows CE 5.00
Data collector	Zebra	ZEBRA-TC51	Android 7.1.2
Wireless printer	HP	HP 8500A	Windows CE
Wireless printer	HP	HP Color Laser jet Pro M252dw	-
Wireless printer	HP	HP Officejet Pro 6230	-
Wireless printer	Canon	iC MF628Cw	Windows CE
Wireless printer	Zebra	QL220 plus	Windows CE
Wireless printer	Zebra	QL320 plus	Windows CE
Wireless printer	Zebra	ZT230_Zebra	-
Appliance	Lenovo	A9050 I3 4170	Windows 7
Appliance	Apple	iMac MK452CH cofe	Mac OS X El Capitan
Healthcare terminal	EMH	M-53	-
Smart watch	Apple	Apple Watch	Watch OS
Smart watch	HUAWEI	WATCH 2 Pro	Android Wear 2.0

Table 3-6 Industry terminals that passed compatibility tests in projects

Terminal Type	Model
Data collector	SF-HHT-4TH
Data collector	DENSO BHT-700

Data collector	MOTO MC70
Healthcare PDA	ZEBRA MC40-HC
On-vehicle wireless terminal	HUADONG HD-RWT8002
POS machine	Lvmama POS machine
Printer	Zebra-QL320
Printer	HP 8500A
Smartphone	Huawei Mate8
Tablet	Samsung P7500

4 Issue List

No.	001
Affected Terminals	Xiaomi Note, Xiaomi MAX, and Xiaomi 5 running MIUI8.5
Symptom	These STAs cannot be associated with the SSID in WAPI-PSK authentication.
Condition	• A smartphone runs MIUI8.5. • The VAP uses WAPI-PSK authentication.
Impact	These STAs cannot be associated with the SSID in WAPI-PSK authentication.
Root Cause Analysis	The STAs do not initiate authentication requests, which is caused by a compatibility issue. The same symptom occurs on these STAs in the comparison test using other vendors' WLAN products.
Solution	Deploy service VAPs in other encryption and authentication modes on the network where these mobile phones run. Alternatively, upgrade the MIUI version of the mobile phones.
Precautions	None

No.	002
Affected Terminals	Data collector: Motorola MC40
Symptom	When the Wi-Fi signal has severe interference, if a STA attempts to associate with the WLAN, the message "Saved" is displayed but association fails.
Condition	Wi-Fi interference is high in the environment.
Impact	When the Wi-Fi signal has severe interference, if the STA attempts to associate with the WLAN, the message "Saved" is displayed but association fails. Users have to repeatedly attempt to associate.
Root Cause Analysis	This issued is caused by a defect of the STA itself.
Solution	Repeatedly click the association button. The same issue occurs when the STA attempts to associate with WLAN APs of other vendors.
Precautions	None

No.	003
Affected Terminals	Laptop: HP ProBook 430 G2 Laptop: Lenovo X220 Laptop: Lenovo X1 Laptop: HP Folio1040 Mobile phone: Huawei KIW-AL10 Mobile phone: Lenovo K50 Mobile phone: SONY Xperia XZ3 Wi-Fi phone: Flyingvoice IP622W Wi-Fi phone: Cisco DX70 Tablet: Huawei M2-101L Data collector: LANDI P990 Data collector: Honeywell Dolphin 6100 Data collector: Motorola MC7090CN Printer: Zebra QL220+ (EOP)
Symptom	These STAs do not support SSIDs containing UTF-8 Chinese codes. Such SSIDs cannot be properly displayed.
Condition	An SSID in Chinese is configured.
Impact	The SSID name cannot be displayed on the STA.
Root Cause Analysis	These STAs do not support SSIDs containing UTF-8 Chinese codes.
Solution	SSIDs containing UTF-8 Chinese codes are not recommended.
Precautions	None

No.	004
Affected Terminals	Data collector: Intermec CK3R Data collector: Keyence BT-W250GSS
Symptom	A STA can detect a Chinese SSID that is properly displayed, but cannot be associated with it.
Condition	An SSID in Chinese is configured.
Impact	The STA fails to associate with the SSID.
Root Cause Analysis	A STA can detect a Chinese SSID that is properly displayed, but cannot be associated with it. This issue occurs when the STA attempts to associate with WLAN APs of other vendors. Therefore, the issue is caused by a defect of the STA itself.
Solution	Use English SSIDs.
Precautions	None

No.	005
Affected Terminals	PCs and laptops running the Windows 7 operating system
Symptom	If the AP password is changed to start or end with a space, for example, " **huawei123abc** ", STAs fail to associate with the AP.
Condition	• A STA uses the Windows 7 operating system. • On the STA, the password is changed to start or end with a space.
Impact	STA association fails after the password is changed.
Root Cause Analysis	When the password is changed on the STA page, the STA running the Windows 7 operating system automatically filters out the space prefix and suffix in the password, therefore leading to a terminal association failure. However, when you set a password starting or ending with a space for the first time, this issue does not occur.
Solution	It is recommended that you do not change the Wi-Fi password to start or end with a space. If such a password has been configured, delete the wireless settings saved on the STA and configure a new password instead of directly changing the password.
Precautions	None

No.	006
Affected Terminals	PCs and laptops using the following Intel wireless adapter: Intel® Centrino® Ultimate-N 6300 AGN
Symptom	Services are interrupted after a STA with a wireless adapter of an early version roams.
Condition	There is a high probability that this issue occurs when the following conditions are met: • The NIC driver of an earlier version is used. • The STA initiates roaming.
Impact	Services are interrupted after STA roaming.
Root Cause Analysis	When this wireless adapter uses an earlier-version driver, there is a high probability that the BSSID of data packets is incorrectly written during roaming. As a result, services are unavailable after roaming. The same issue occurs in the comparison test using other vendors' WLAN products.
Solution	Upgrade the wireless adapter driver to the latest version (launched on 2015/4/30).
Precautions	None

No.	007
Affected Terminals	Wireless adapter: ASUS AC68 NIC
Symptom	The maximum air interface rate can reach only 700 Mbit/s.
Condition	The ASUS AC68 NIC is used to perform the ultimate performance test.
Impact	The extreme performance of the air interface does not meet the requirement.
Root Cause Analysis	The ASUS AC68 NIC supports a maximum air interface rate of only 700 Mbit/s.
Solution	This issue affects only the ultimate performance only but does not affect common services. Therefore, no workaround is required.
Precautions	None

No.	008
Affected Terminals	Tablet: Microsoft Surface Pro 3
Symptom	STAs fail to access the network when the PMF function is enabled.
Condition	The PMF function is enabled.
Impact	STAs fail to access the network when the PMF function is enabled.
Root Cause Analysis	When the PMF function is enabled, the format of association packets sent by a Surface Pro 3 does not comply with the protocol.
Solution	The software version released by Huawei provides optimization specifically for this STA. Upgrade to a version later than WLAN V200R007C10SPC800.
Precautions	None

No.	009
Affected Terminals	Data collector: Motorola MC55A0 Wi-Fi phone: DYNA E10
Symptom	In 802.1X authentication mode, STAs may be rejected by some servers and cannot access the network.
Condition	The 802.1X authentication mode is configured.
Impact	STAs fail to access the Wi-Fi network.
Root Cause Analysis	The cipher suite of such a STA has low security. Therefore, the STA is rejected upon 802.1X authentication.
Solution	Modify the authentication mode. Do not use 802.1X.
Precautions	None

No.	010
Affected Terminals	WLAN terminals that use Broadcom chips, for example: Laptop: Apple MacBook Pro Laptop: Apple MacBook Air Mobile phone: Samsung S3 Mobile phone: Huawei Honor 6
Symptom	When the periodic PTK update function is enabled, a STA may go offline after the key is updated.
Condition	• The PTK update function is enabled on the AP. • A STA uses the Broadcom chip.
Impact	The STA goes offline when the PTK key is updated.
Root Cause Analysis	STAs that use Broadcom Wi-Fi chip do not support the key update function.
Solution	• After the STA goes offline, re-associate it with the AP • Disable the PTK update function on the AP.
Precautions	None

No.	011
Affected Terminals	Printer: Zebra QL220+ (EOP)
Symptom	A STA cannot connect to a hidden SSID.
Condition	• SSID hiding is enabled. • The STA is associated with the VAP mapping the hidden SSID.
Impact	The STA cannot connect to a hidden SSID.
Root Cause Analysis	The format of Probe Request packets sent by the printer is incorrect. The AP cannot process such packets.
Solution	It is recommended that the SSID hiding function be disabled on a network where this printer is deployed.
Precautions	None

No.	012
Affected Terminals	Wi-Fi phone: Cisco 8821
Symptom	STAs fail to obtain IP addresses using DHCP when going online on an AP.
Condition	STAs attempt to obtain IP addresses using DHCP when going online on an AP.
Impact	STAs fail to obtain IP addresses using DHCP when going online on an AP.
Root Cause Analysis	After this type of STA broadcasts DHCP Discover messages, an AP responds with a broadcast DHCP Offer message. However, the STA does not respond with a Request message and therefore fails to obtain an IP address. According to the test result, the same issue occurs when the STA attempts to use DHCP to obtain an IP address from WLAN APs of other vendors.
Solution	Enable the function of converting DHCP broadcast packets to unicast packets on the Huawei AP.
Precautions	None

No.	013
Affected Terminals	Data collector: Keyence BT-W250GSS
Symptom	It takes a long time for a STA to go online on an AP.
Condition	• The STA has been connected to another network segment and obtained an IP address before going online. • The d**hcp server force response** command is not executed on the DHCP server.
Impact	STA access is slow when going online on the AP.
Root Cause Analysis	If such a STA functioning as a DHCP client has been connected to a network segment and obtained an IP address, it still uses this IP address for lease renewal even when the STA enters a new environment. Specifically, the STA sends a DHCP request carrying the original IP address for lease renewal. The DHCP server finds that the IP address is invalid and does not reply with any DHCP message. The STA considers that the DHCP server does not receive the DHCP request and continues to send the request carrying the original IP address. As a result, the access period is long.
Solution	Run the **dhcp server force response** command to force the DHCP server to reply with a DHCP NAK message. Then the DHCP client can quickly enter the four-step process for going online and apply for a new IP address.
Precautions	None

No.	014
Affected Terminals	PCs and laptops using one of the following Intel wireless adapters: Intel@Dual Band Wireless-AC 7260 Intel@Dual Band Wireless-AC 7265 Intel@Dual Band Wireless-AC 8260 Intel@Dual Band Wireless-AC 8265 Intel@Dual Band Wireless-AC 3165 Intel@Dual Band Wireless-AC 3168 Intel@Wireless-AC 9260 Intel@Wireless-AC 9560 Intel@Wireless-AC 9461 Intel@Wireless-AC 9462
Symptom	The STA cannot connect to an 802.11ax AP (for example, AP7060DN).
Condition	• The STA uses one of the preceding Intel wireless adapters with the driver version earlier than 20.70.0. • The STA attempts to connect to an 802.11ax AP.
Impact	The STA fails to connect to an 802.11ax AP.
Root Cause Analysis	This issue occurs when the STA attempts to associate with WLAN APs of other vendors. Therefore, the issue is caused by a defect of the STA itself.
Solution	Upgrade the NIC driver to 20.70.0 or later.
Precautions	None

No.	015
Affected Terminals	Mobile phone: ZTE Nubia Z7 Mobile phone: MEIZU MX4 Mobile phone: Xiaomi Mi 4 Mobile phone: MEIZU MX3 Mobile phone: Samsung Note 3
Symptom	• After a WAPI certificate is imported to a ZTE Nubia Z7, a message is displayed indicating that this type of certificate is not supported. • The WAPI certificate cannot be imported to a MEIZU MX4, with the process stuck in the password input step. • After a WAPI certificate is imported to a Xiaomi 4 and MEIZU MX3, the imported certificate cannot be selected during Wi-Fi signal association. • A Samsung Note 4 cannot be associated with WAPI signals. The STA does not initiate a DHCP request.
Condition	The WAPI authentication mode is configured for a VAP.
Impact	The STA fails to associate with the AP.
Root Cause Analysis	This type of STA is incompatible with WAPI certificate authentication.
Solution	Deploy service VAPs in other encryption and authentication modes on the network where these mobile phones run.
Precautions	None

No.	016
Affected Terminals	Wi-Fi phone: Cisco DX70 Laptop: Apple MacBook Air Laptop: HP 2570P Laptop: Dell E4300 Mobile phone: Samsung S3
Symptom	After the 802.11r function is enabled on an AP, these STAs cannot identify the network type.
Condition	The 802.11r function is enabled.
Impact	After 802.11r is enabled, these STAs may have compatibility risks.
Root Cause Analysis	This issue occurs when the 802.11r function is enabled on WLAN APs of other vendors. Therefore, the issue is caused by a defect of the STA itself.
Solution	When such STAs exist on the network, disable the 802.11r function.
Precautions	None

No.	017
Affected Terminals	Mobile phone: Microsoft Lumia 950 PCs and laptops using the following Intel wireless adapter: Intel(R) Dual Band Wireless-AC 8260
Symptom	A STA supports the 802.11r function. However, each time the STA connects to the FT-PSK signal, the STA accesses the network in non-802.11r mode.
Condition	The 802.11r function is enabled.
Impact	When the FT-PSK signal is connected, the STA accesses the network in non-802.11r mode.
Root Cause Analysis	The issue is caused by a defect of the STA itself.
Solution	When such STAs exist on the network, disable the 802.11r function.
Precautions	None

No.	018
Affected Terminals	Mobile phone: Samsung Note 3
Symptom	After a STS roams to a new AP and initiates re-authentication, the STA goes offline and then online.
Condition	• The 802.11r function is enabled. • 802.1X re-authentication is configured.
Impact	After roaming, STAs go offline and then online upon 802.1X authentication.
Root Cause Analysis	After roaming to a new AP, the STA sends a re-authentication request, the STA does not respond. After several retransmissions, authentication times out, and the STA goes offline and then online. This issued is caused by a defect of the STA itself.
Solution	Do not enable both 802.11r and 802.1X re-authentication.
Precautions	None

No.	019
Affected Terminals	Mobile phone: Apple iPhone 6s
Symptom	A STA goes offline and then online due to a key negotiation failure after 802.1X re-authentication.
Condition	• The 802.11r function is enabled. • 802.1X re-authentication is configured.
Impact	A STA goes offline and then online due to a key negotiation failure after re-authentication.
Root Cause Analysis	When both 802.11r and 802.1X re-authentication are configured, the STA uses the non-802.11r processing mode after re-authentication. As a result, the key negotiation fails.
Solution	Do not configure 802.11r and Dot1x re-authentication simultaneously. For Apple terminals, this issue has been resolved in versions later than iOS 10.3.2.
Precautions	None

No.	020
Affected Terminals	Apple iPod Touch5 Apple iPad 4
Symptom	A STA cannot associate with the SSID on a 5 GHz low-frequency channel (lower than channel 149).
Condition	The VAP is configured on a 5 GHz low-frequency channel (lower than channel 149).
Impact	The STA cannot associate with the SSID on a 5 GHz low-frequency channel (lower than channel 149).
Root Cause Analysis	An Apple iPoD Touch 5 can detect 5 GHz signals (lower than channe1 149) but cannot associate with the signals due to its own issues.
Solution	Configure WLAN APs to work on 5 GHz frequency channels higher than 148.
Precautions	None

No.	021
Affected Terminals	Mobile phone: Apple iPhone 8
Symptom	A STA cannot associate with an SSID in WAPI-PSK encryption mode.
Condition	The WAPI-PSK encryption mode is configured for a VAP.
Impact	A STA cannot associate with an SSID in WAPI-PSK encryption mode.
Root Cause Analysis	These smartphones cannot associate with an SSID in WAPI-PSK encryption mode but can associate with an SSID in WPA2-AES authentication mode. This issue occurs when the STA attempts to associate with an SSID in WAPI-PSK encryption mode on WLAN APs of other vendors. Therefore, the issue is caused by a defect of the STA itself.
Solution	WAPI-PSK on these terminals has a compatibility issue. It is recommended that other encryption and authentication modes be configured for service VAPs.
Precautions	None

No.	022
Affected Terminals	iPhone mobile phones with 360 Total Security installed
Symptom	When an iPhone with 360 Total Security installed attempts to connect to an unencrypted Wi-Fi network, the Wi-Fi icon highlighting is slow.
Condition	• The VAP is not encrypted. • 360 Total Security is installed on an iPhone.
Impact	When an iPhone with 360 Total Security installed attempts to connect to an unencrypted Wi-Fi network, the Wi-Fi icon highlighting is slow.
Root Cause Analysis	This is a compatibility issue between the STA and app.
Solution	• Configure WPA2 encryption (recommended) for the Wi-Fi network. • Uninstall this app on the iPhone (not recommended).
Precautions	None

No.	023
Affected Terminals	Apple iPhone running iOS 10
Symptom	An iPhone running iOS 10 cannot be redirected to the Wi-Fi connection page through the button during WeChat QR code scanning for Wi-Fi access. The user must **manually switch to the Wi-Fi connection page for Wi-Fi access** and then go back to the WeChat page for authentication.
Condition	• An iPhone runs the iOS 10 operating system. • The iPhone uses WeChat QR code scanning to connect to the Wi-Fi network.
Impact	During WeChat QR code scanning for Wi-Fi access on an iPhone running iOS 10, the user must **manually switch to the Wi-Fi connection page for Wi-Fi access** and then go back to the WeChat page for authentication.
Root Cause Analysis	This is a compatibility issue between the STA and WeChat, which needs to be fixed.
Solution	In WeChat QR code scanning for Wi-Fi access, **manually access the Wi-Fi connection page**.
Precautions	None

No.	024
Affected Terminals	Apple iPhone running iOS 11
Symptom	The Portal authentication page uses the HTTPS protocol but has an invalid certificate. In this case, when an iPhone running iOS 11 receives an HTTP or HTTPS redirection URL, the STA proactively disconnects from the WLAN.
Condition	• An iPhone runs the iOS 11 operating system. • Portal authentication is configured. • The mobile phone receives an HTTPS redirection URL (or an HTTP redirection URL but the Portal authentication page is HTTPS), and the certificate is invalid.
Impact	The mobile phone actively disconnects from the Wi-Fi network.
Root Cause Analysis	This issue is caused by the processing mechanism of the iOS operating system.
Solution	Solution 1: The Portal authentication page uses the HTTPS protocol and a valid certificate. Solution 2: Configure the HTTP protocol for the Portal authentication page. Solution 3: Enable the CNA bypass function on the STA. Solution 1 is recommended. Solution 2 has poor security, and Solution 3 does not support automatic pushing of the Portal authentication page after a smartphone is associated with the WLAN.
Precautions	None

No.	025
Affected Terminals	Apple iPhone running iOS 11.3
Symptom	When a STA uses WeChat to connect to Wi-Fi, a pop-up window is displayed, indicating that WeChat authentication fails.
Condition	• An iPhone runs the iOS 11.3 operating system. • The STA uses WeChat to connect to the Wi-Fi network.
Impact	WeChat authentication fails, and the STA cannot connect to the network.
Root Cause Analysis	A fault occurs on the app when a STA attempts to use WeChat for Wi-Fi access.
Solution	• Workaround: Workaround: Tap **Cancel** in the upper right corner of the displayed window and select **Do not use Internet connections**. Then, open the web browser and access any web page. After the web browser is redirected to the Wi-Fi network, the user can access the Internet. • Solution: Wait for WeChat to fix this fault.
Precautions	None

No.	026
Affected Terminals	iPhone, iPad, and Apple Watch
Symptom	Apple terminals, such as iPad, iPhone, and smart watch, cannot be pinged after their screens are locked for a period of time.
Condition	An Apple Wi-Fi STA is used, and its screen is locked for a period of time.
Impact	The Wi-Fi function cannot be used after the STA screen is locked.
Root Cause Analysis	The issue is caused by the power-saving design of STAs.
Solution	None
Precautions	None

No.	027
Affected Terminals	iPhones running iOS 9.3.1 and iOS 10 Beta
Symptom	The authentication page is displayed about 40 seconds after Portal authentication is performed to connect to the Wi-Fi network.
Condition	• An iPhone runs the iOS 9.3.1 or iOS 10 Beta operating system. • Portal authentication is configured.
Impact	The authentication page is displayed about 40 seconds after Portal authentication is performed to connect to the Wi-Fi network.
Root Cause Analysis	ASTA running iOS 9.3.1 or iOS 10 Beta attempts to connect to the WLAN in Portal authentication mode. When receiving the first redirection packet, the STA starts the browser and sends an HTTP request for the second time after about 40s to complete the authentication page. During this 40s period, the STA cannot be redirected to the authentication page and may be disconnected from Wi-Fi signals. Users fail to access the Internet.
Solution	1. Wait for a period of time. Alternatively, you can cancel the automatic WLAN access function in the Wi-Fi setting and open the browser to implement redirection. 2. Enable CNA-bypass on the AC. Then you can manually open the browser to access any website. The authentication page will be displayed.
Precautions	None

No.	028
Affected Terminals	Apple terminals (such as iPhones) running iOS 11 and iOS 12
Symptom	When such a terminal attempts to connect to Wi-Fi in Portal authentication mode, the authentication page is not displayed automatically.
Condition	• An Apple terminal runs the iOS 11 or iOS 12 operating system. • Portal authentication is configured for the WLAN. • The terminal attempts to associate with the WLAN for more than 30 times.
Impact	When a terminal attempts to connect to Wi-Fi in Portal authentication mode, repeated association occurs and the authentication page is not displayed automatically.
Root Cause Analysis	When an Apple terminal running the iOS 11 or iOS 12 attempts to access a WLAN in Portal authentication mode, the terminal attempts to associate for multiple times but does not send Captive packets.
Solution	Manually open a browser to jump to the authentication page.
Precautions	None

No.	029
Affected Terminals	Samsung S10 series smartphones、Apple iPhone11 series smartphones
Symptom	When a station is associated with the 2.4 GHz radio on the Wi-Fi 6 AP7060DN in HE20 mode, the maximum air interface rate in a shielding room is 229 Mbit/s (MCS9), which does not reach 286 Mbit/s (MCS11).
Condition	• A station to connect to the 2.4 GHz radio of an AP7060DN. • The air interface performance is tested in a shielding room environment.
Impact	The air interface performance cannot reach the theoretical maximum value.
Root Cause Analysis	By comparing the Qualcomm demo board and other vendors' Wi-Fi 6 APs, none of them can reach the maximum link setup rate with the smartphone on the 2.4 GHz band. It is determined that the current station version may restrict the use of 1024-QAM on the 2.4 GHz radio.
Solution	1. Wait for the possible Samsung S10、Apple iPhone11 version upgrade. 2. Switch to the 5 GHz radio.
Precautions	None

No.	030
Affected Terminals	Samsung S10 series smartphones、Apple iPhone11 series smartphones
Symptom	When using this type of mobile phone to connect to the Wi-Fi6 wireless access point AP7060DN, the 2.4G radio only supports 20M bandwidth.
Condition	• A smartphone to connect to the 2.4 GHz radio of an AP7060DN.
Impact	2.4G can only support 20M channels, affecting air interface performance.
Root Cause Analysis	The terminal's own specifications are different, and the terminal device only supports 20M channels under the AP of other vendors.
Solution	None
Precautions	None

No.	031
Affected Terminals	PICO neo VR
Symptom	When the VR optimization switch is enabled, if the terminals do not support uplink and downlink unequal spatial streams, the uplink and downlink spatial streams of these terminals will be limited to 1 spatial stream.
Condition	• Terminals such as PICO neo VR that do not support uplink and downlink unequal spatial flow. • VR optimization switch is enabled.
Impact	The downlink performance of the terminal will be impaired.
Root Cause Analysis	By comparing the performance of other terminals, when the VR optimization switch is turned on, if some terminals do not support uplink and downlink non-equivalent spatial streams, these terminals always declare their capabilities as single-stream in the packets interacting with the AP, and the AP cannot detect Terminal real ability.
Solution	Wait for the version update of the terminal manufacturer.
Precautions	None

No.	032
Affected Terminals	SONY Tablet SGPT212CN/H SAMSUNG Tab E
Symptom	After the terminal accesses the WALN network, the delay and packet loss problems occur.
Condition	• The terminal supports traditional power saving and requires the AP to repeatedly send a beacon to wake up the terminal.
Impact	Increased air interface delays and packet loss issues, resulting in reduced service quality.
Root Cause Analysis	After such a terminal enters the power saving state, the AP needs to send the beacon frame carrying the TIM field multiple times to wake up the STA, resulting in excessive packet delay.
Solution	1.Waiting for the version update of the terminal manufacturer 2. Due to the terminal itself, some terminals may become abnormal when entering the power-saving state. In this case, it is recommended to enable the function that inhibits the terminal from entering the power-saving state (active-dull-client enable). The AP frequently sends nulldata frames to the terminal so that the terminal does not enter the power saving state. However, after enabling the function of inhibiting the terminal from entering a power saving state, the terminal consumes power faster. If there is no abnormality in the power saving state of the terminal, it is recommended to disable the function of inhibiting the terminal from entering the power saving state.
Precautions	None

No.	033
Affected Terminals	Jumper EZpad 6s Pro 11.6
Symptom	EZpad 6s Pro 11.6 cannot access WLAN network using 802.1x authentication.
Condition	• Configure the WLAN network to 802.1x authentication.
Impact	STA cannot access the network.
Root Cause Analysis	Compared with other WLAN vendors, this terminal also failed to access, and it was analyzed as the terminal's own defects.
Solution	Waiting for the version update of the terminal manufacturer.
Precautions	None

No.	034
Affected Terminals	intel AX200
Symptom	Intel AX200 cannot access WLAN network using WPA-802.1x-AES authentication.
Condition	• Configure the WLAN network to WPA-802.1x-AES. • Intel AX200 with the driver version earlier than 21.30.3.2.
Impact	STA cannot access the network.
Root Cause Analysis	It was analyzed as the terminal's own defects.
Solution	Upgrade the NIC driver to 21.80.2.1 or later.
Precautions	None

No.	035
Affected Terminals	Google Pixel 3
Symptom	When a STA associates with a hidden SSID, the message "The network is out of range" is displayed on the STA.
Condition	When a VAP with a hidden SSID policy is configured on the AP, the STA is associated with the network.
Impact	STA cannot access the network.
Root Cause Analysis	The STA does not support hidden SSID.
Solution	Configur ing a VAP to Use a Non-hidden SSID
Precautions	None

No.	036
Affected Terminals	Honeywell EDA50
Symptom	Long packet delay on the STA.
Condition	• After the STA is associated with the AP, ping the STA.
Impact	Long packet delay on the STA.
Root Cause Analysis	The STA does not support the traditional power saving function. After the STA enters the sleep mode, the AP cannot wake up the STA through the beacon frame even if the beacon frame sending time and the TIM field are correct.
Solution	This defect cannot be avoided.
Precautions	None

No.	037
Affected Terminals	iPhone11
Symptom	STAs Fail to Access the Network When the WEP Key Is Configured with a 10-Bit Hex Code 0000000000.
Condition	• When the AP is configured as the VAP of the WEP security policy, the key is configured with a 10-bit hex code "0000000000". • The iPhone 11 is associated with the WLAN.
Impact	The STA fails to associate with the AP and no Internet connection is available.
Root Cause Analysis	It was analyzed as the terminal's own defects.
Solution	1. Change the encryption policy of other VAPs. 2. Change the WEP key to a non-all-zero value.
Precautions	None

No.	038
Affected Terminals	LENOVO XIAOXIN Pro13
Symptom	There Is a High Probability that STAs Fail to Roam in 802.11r over the Air Mode.
Condition	• STA model: Lenovo XIAOXIN Pro13 • NIC model: QCA61x4A • NIC driver version: 12.0.0.912
Impact	There Is a High Probability that STAs Fail to Roam in 802.11r over the Air Mode.
Root Cause Analysis	It was analyzed as the terminal's own defects.
Solution	Upgrading the NIC Driver of the Laptop.
Precautions	None

No.	039
Affected Terminals	LENOVO XIAOXIN Pro13
Symptom	STA occasionally fail to roam within an AC in 802.11r mode.
Condition	• STA model: Lenovo XIAOXIN Pro13 • Perform intra-AC 802.11r roaming.
Impact	STA occasionally fail to roam within an AC in 802.11r mode.
Root Cause Analysis	The pmkid carried in the association request sent by the STA is unavailable.
Solution	Disabling 802.11r.
Precautions	None

No.	040
Affected Terminals	Bull Wi-Fi smart socket Nintendo Switch Xiaomi Mi Family Floor Sweeping Robot
Symptom	The AP is not connected to the Internet, and the STA cannot associate with the SSID. STAs fail to associate with APs because no Internet connection is available.
Condition	• The AP is not connected to the Internet.
Impact	The STA cannot associate with the SSID.
Root Cause Analysis	It was analyzed as the terminal's own defects. The AP is not connected to the Internet, and the STA cannot associate with the SSID.
Solution	Connecting APs to the Internet.
Precautions	None

No.	041
Affected Terminals	Xiaomi 5C
Symptom	WPA2-PSK authentication, Xiaomi 5C mobile phone roaming failure.
Condition	• WPA2-PSK scenario, mobile phone roaming.
Impact	Mobile phone roaming failure.
Root Cause Analysis	The STA does not respond to the 1/4 packet sent by the AP during roaming. In the same configuration environment, the problem symptom is the same as that of the non-Huawei AP.
Solution	Change the authentication mode to open in the scenario where the terminal is located.
Precautions	None

No.	042
Affected Terminals	LG V30+
Symptom	When 802.11r over air is enabled for wpa2-psk authentication, packet loss occurs during roaming of LG V30 .
Condition	• 802.11r over air is enabled for WPA2-PSK authentication, and 802.11r roaming is enabled for STAs.
Impact	Packet loss during roaming.
Root Cause Analysis	The problem is caused by the STA itself. After the 802.11r roaming interaction process of the STA is complete, the STA sends a Disassoc message to go offline with the cause value "unspecific reason". The STA re-associates with the AP, causing packet loss.
Solution	Disable the 802.11r function.
Precautions	None

No.	043
Affected Terminals	TCL M2U
Symptom	When the default configuration is used on the 5 GHz radio of an AP, the STA repeatedly goes online and offline through the TCL M2U association.
Condition	• Default configuration of the AP 5 GHz radio. • Mobile TCL M2U go-live.
Impact	STAs repeatedly go online and offline after association.
Root Cause Analysis	It was analyzed as the terminal's own defects.
Solution	The 2.4 GHz radio is used to provide network services for the STA.
Precautions	None

No.	044
Affected Terminals	Letv X900+
Symptom	When the AP's 2.4 GHz radio bandwidth is 40 M, the performance of the LeTV X900+ mobile phone is low. When the bandwidth is 40 M, terminals send packets only at 20 M.
Condition	• 2.4 GHz radio bandwidth of the AP: 40 MHz, default configuration. • Use LeTV X900+ to perform services.
Impact	Terminal performance deteriorates.
Root Cause Analysis	The 2.4G extended protocol 256QAM of the Letv X900 is defective. As a result, the performance is only half of the downlink traffic rate.
Solution	This defect cannot be avoided.
Precautions	None

No.	045
Affected Terminals	OPPO reno3
Symptom	After 802.1x authentication is enabled and re-authentication is enabled, the OPPO reno3 frequently goes offline.
Condition	• 802.1x authentication with re-authentication enabled.
Impact	STA Disconnection
Root Cause Analysis	It was analyzed as the terminal's own defects.The EAP response returned by the STA is not encrypted during re-authentication. The symptom is the same as that of other vendors' APs.
Solution	Disable 802.1x re-authentication.
Precautions	None

No.	046
Affected Terminals	SAMSUNG S20 SAMSUNG A90
Symptom	Traffic decreases and performance deteriorates significantly after traffic is transmitted on the STA for a period of time.
Condition	• Test the traffic transmission after the terminal goes online.
Impact	The performance deteriorates.
Root Cause Analysis	It was analyzed as the terminal's own defects.
Solution	This defect cannot be avoided.
Precautions	None

No.	047
Affected Terminals	ZTE Axon 9 OPPO R15X VIVO X27 OPPO Find x Redmi Note 7
Symptom	5 GHz radio 40 MHz channel with low performance in default configuration.
Condition	• Traffic injection test on a 5 GHz radio 40 MHz channel with default configurations.
Impact	The performance deteriorates.
Root Cause Analysis	The receive and demodulation capability of these STAs is weak. The time sequence in the short GI is insufficient and the high-order PPDU cannot be parsed.
Solution	On the AC, set the GI to longGI by running the guard-interval-mode normal command in the radio-5g-profile view.
Precautions	None

No.	048
Affected Terminals	Huawei Honor Play LG V30
Symptom	In open authentication mode, after STA is associated with an AP and goes online, the AC pings the STAs with long delay and packet loss occurs.
Condition	• After the STA goes online, the AC pings the STA.
Impact	Long packet delay and packet loss.
Root Cause Analysis	The AP fails to wake up the STA due to power saving exceptions. As a result, packet loss occurs.
Solution	The function of suppressing STAs from entering the power saving state is enabled, but the active-dull-client enable command does not take effect on some STAs.
Precautions	None

No.	049
Affected Terminals	Huawei matebook x pro
Symptom	After the WLAN function is disabled and then enabled, or the STA goes online again after power saving, there is a possibility that the STA fails to go online.
Condition	• In 802.1x authentication scenarios, the STA goes online and associates with the AP again.
Impact	The STA occasionally fail to go online.
Root Cause Analysis	802.1x authentication fails. The STA does not send a client hello message and goes offline through deauth.
Solution	Updating the NIC Driver.
Precautions	None

No.	050
Affected Terminals	Apple iPhone 11
Symptom	After the STA is associated, the traffic sending performance is low.
Condition	• Traffic is sent after the STA is associated.
Impact	The performance deteriorates.
Root Cause Analysis	The iPhone 11 aggregation level is insufficient due to STA defects.
Solution	This defect cannot be avoided.
Precautions	None

No.	051
Affected Terminals	Microsoft surface pro 6
Symptom	Ping packets are lost after surface pro6 roams successfully.
Condition	• After the neighbor report function is enabled, packet loss occurs after roaming.
Impact	Ping packet loss after roaming.
Root Cause Analysis	The STA does not respond to downlink packets from the AP within a short period of time due to compatibility issues when processing neighbor requests. As a result, ping packets are lost. The test results on the non-Huawei device are the same.
Solution	This defect cannot be avoided.
Precautions	None

No.	052
Affected Terminals	Intel Wireless-AC 9560
Symptom	Wi-Fi network disconnection.
Condition	• Enable the SMPS function for the terminal network adapter.
Impact	Wi-Fi network disconnection.
Root Cause Analysis	After the SMPS function is enabled on the STA, the STA is incompatible with the AP.
Solution	In the wireless network adapter settings, set the MIMO power saving mode to disable SMPS.
Precautions	None

5 Appendix

This document is released at:

http://enterprise.huawei.com/topic/wlan-Interworking-en/index.html

Recently, at its Song Shan Lake Branch, UL Verification Services designed and executed interoperability and compatibility test schemes for Huawei's latest Wi-Fi 6 (802.11ax) AP7060DN. The test was successfully completed, indicating the interoperability and openness of Huawei's Wi-Fi 6 AP7060DN. For details about the test report, visit Huawei official website at:

https://e.huawei.com/cn/material/networking/wlan/b72cf1106cb04e1f837028124dc56a26

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