DIREKTRONIK

Integrated maintenance terminal for Telecom operators & enginners

Scence description

A professional test terminal focus on telecom maintain & install managemnet and testing needs which integrated infomation collection, testing, transmission, with multifunction and durable perforamnce.

Network operation and maintenance is the reliable support of the communication network. A large number of maintenance personnel of the end (access) are key links.

The installation personnel need various instruments and operating tools to diagnose obstacles, test indicators and improve efficiency. With one PDA, all malfunction were solved.

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Telecom Operators

- Low installation and maintenance efficient
- Various region filed engineers are hard to manage
- High installation and maintenance cost
- Service installation/maintenance can not performance intelligent

Enginners

- Heavy workload ,carry all tools everyday
- Complex operation and so many trainings spend too much time.
- Working for long time but low work efficiency
- Customer complain due to slow service
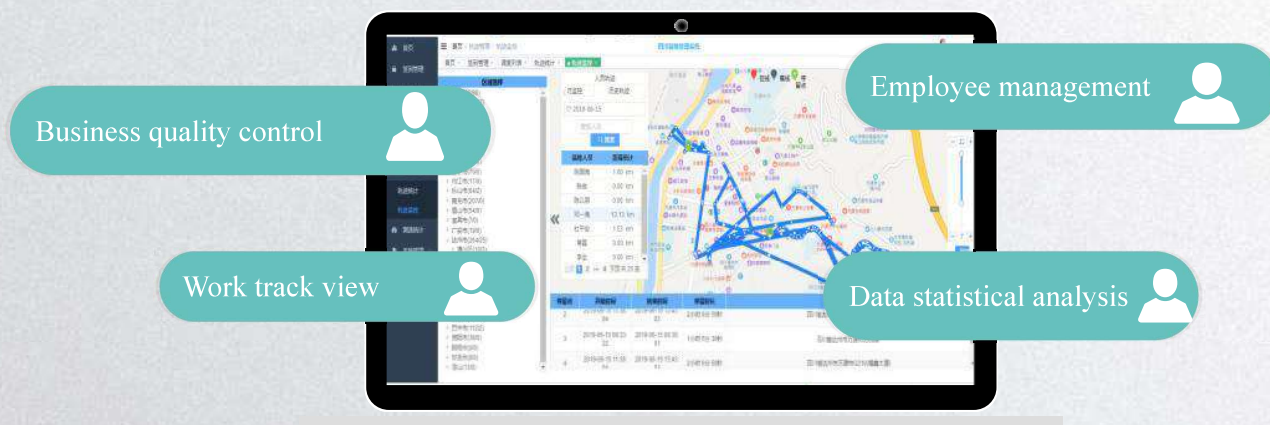- Need to use personal cellpone to finish certain testing

Help Me

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PDA management platform: Make worker management/Operation standardization,paperless, work high efficiency

PDA Integrated Management Platform

SENTER PDA is not only a tool for telecom installation and maintaiance. While helping to improve the efficiency of the installation personnel, it provides management mechanisms for the control of the entire maintenance process, installtaion staff, PDA, other testers.Provides data support and control of operation and maintenance.
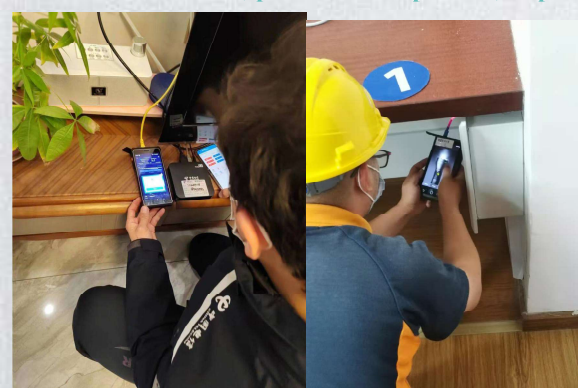

Business quality control

Employee management

Work track view

Data statistical analysis

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Muiti-function, less training, less cost:
 One PDA with multi function, improved the install and maintain speed and quality,reduced the purchase cost.

Improve the operator's brand image:
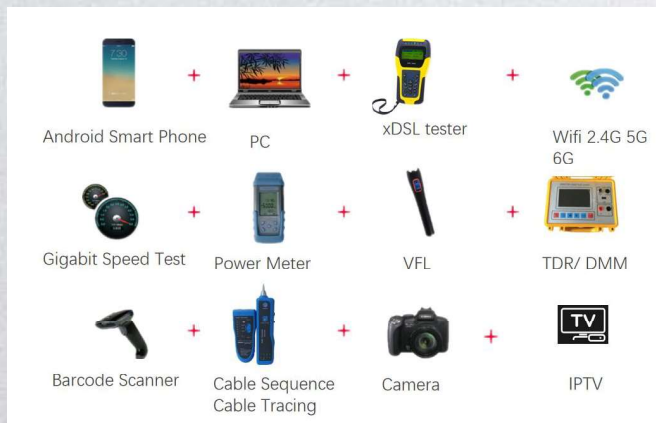Fast service, professional operator, improve customer's satisfaction.

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Before 😢

- Many tester to take, heavy and incovenient
- Disordered testers are easily damaged
- Speedtest mainly focus on PC and personal cellphone
- Can not open the IPTV service for user need to open this service
- Not have a multi function tester which is similar to cellphone
- Work use and personal use devices mix, hard to manage
- Effect telecom's professional image

Android Smart Phone + PC + xDSL tester + Wifi 2.4G 5G 6G

Gigabit Speed Test + Power Meter + VFL + TDR/ DMM

Barcode Scanner + Cable Sequence Cable Tracing + Camera + IPTV

✌️😁 Now

- Lighten filed worker's burden, and liberated their shoulders.
- One PDA in hand , do Speedtest, OPM, vfl, IPTV ect. professionally.
- Improve the install and maintain efficiency.
- Improve customer's satisfaction.

Items	S357 (5G PDA)
Appearance	
Speedtest result	WIFI: 1700mbps; WIRE: 2200mbps
Basic OS	Android 12
Network band	**5G:** CN: n1/ 28/ 41/ 78/ 79 EU: n1/ 3/ 5/ 7/ 8/ 20/ 28/ 38/ 40/ 41/ 77/ 78 **4G LTE:** CN: B1/ 3/ 5/ 8/ 34/ 38/ 39/ 40/ 41 EU: B1/ 3/ 5/ 7/ 8/ 20/ 28/ 32/ 38/ 39/ 40/ 41/ 42
CPU	8 CORE 2.7GHz
Screen size	6 inch
Screen resolution	2160*1080 TFT
Memory	RAM: 4G Flash: 64G
Waterproof	IP65
Drop test	1.2 meter drop resistance
Numeric Keypad	No
Portable Wrist Belt	YES
Ethernet port	Two Gigabit Ethernet ports(1G+2.5G)
HDMI Port	YES
RJ11 port	NO
Optical Power Interface	Universal interface
VFL Interface	VFL Interface
Charging interface	YES

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Application scene :

1. Multi-function test terminal

2. Gigibit speedtest--2.5G network card check & handover to user

3. Smart home service—More than Gigibit Wifi index testing, optimize WIFI distribute

3.TV emulation—Take more video business

4. Network test—Grab packet for IPTV, network ect. to analyze the hard troubles

Platform support:

—Android 10 OS
—160M bandwidth
—WiFi6
--1G/2.5G port
--1G/10G power meter(1310/1490/1577nm testing)
--VFL （More than 3km visual fault checking.2.5mm universial port)
--TV emulation(Suppot video recording,Compatible with 4K resolution)
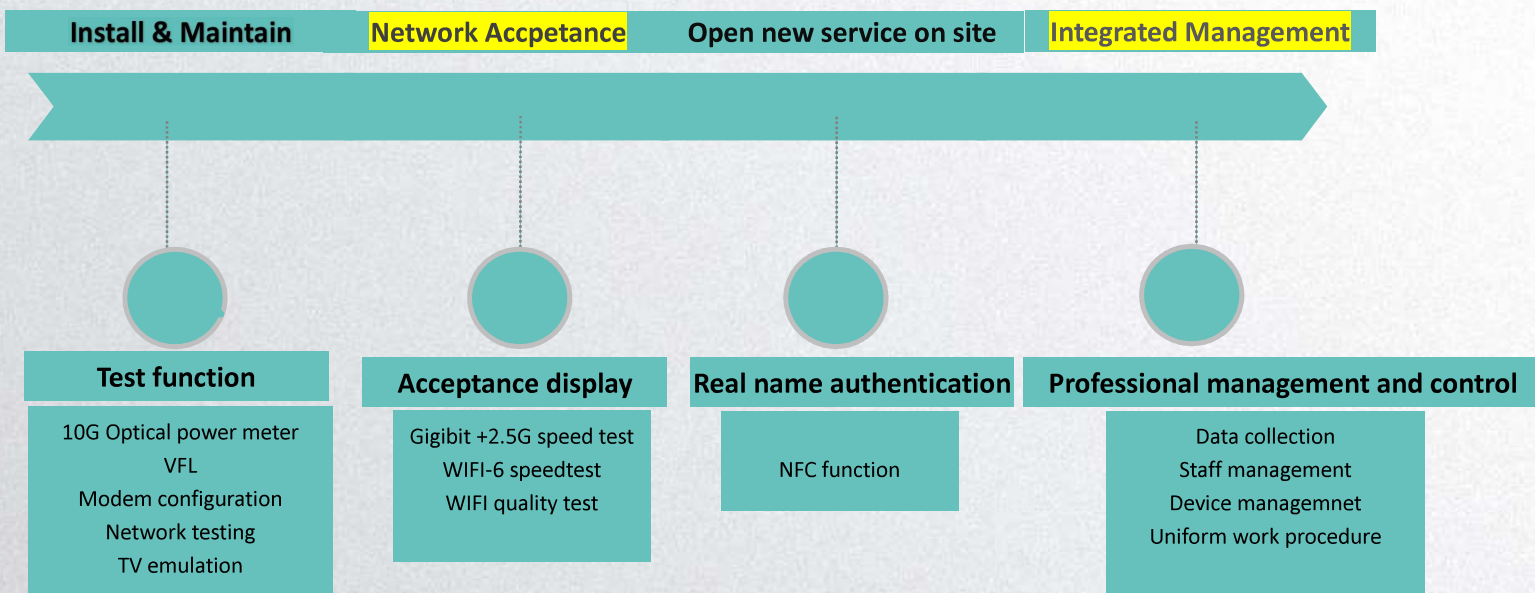--GPS
--Camera
--Speedtest for 1G and 2.5G wired network
---.........

Gigabit Speed Test
Can realized 2000 mbps through and WIFI and wired test

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Support Telecom Install & maintain Full Flow:

Install & Maintain	Network Accpetance	Open new service on site	Integrated Management

Test function	**Acceptance display**	**Real name authentication**	**Professional management and control**
10G Optical power meter VFL Modem configuration Network testing TV emulation	Gigibit +2.5G speed test WIFI-6 speedtest WIFI quality test	NFC function	Data collection Staff management Device managemnet Uniform work procedure

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Main Test functions:

Speedtest

Wire Gigibit Speedtest above 900M(2.5G port above 1.4Gbps)

Wifi 6 Gigibit Speedtest above 900M

10G OPM

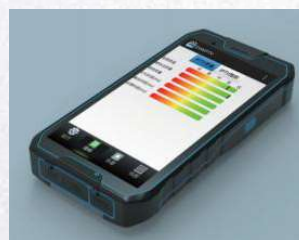**10G optical power meter Support 1490/1577nm mix optical power testing with ±0.1dBm accuracy**

Grab packet & Analyze

Support Wifi/Wire/Wifi/4G flow packet grab

Support cut out various network packet and do data analyze for packets

VFL

2.5mm universial adaptor CW/2Hz
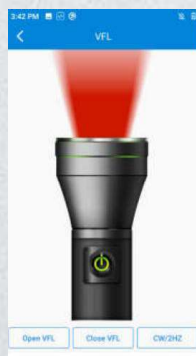
Network Troubleshooting

Support various network protocol's data grab,can save in pcap format Support IPTV/OTT data analyze for fault diagnose Support Ping, Ifconfig, Tracert, Route network testing

TV emulation

HDMI high resolution image, emulate TV, support 4K

Lock TV 's fault realized fault troubleshoot

Speed test

Wifi   DHCP   STATIC   PPPOE

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Application scene :

Now, more and more countries build 5G base stations to achieve nationwide coverage of the 5G network, which requires our PDA also need to support the 5G network to meet the new needs of network development.In the development of smart home network, FTTR and whole-house WiFi services, there are many new problems that need equipment and new technologies to solve.
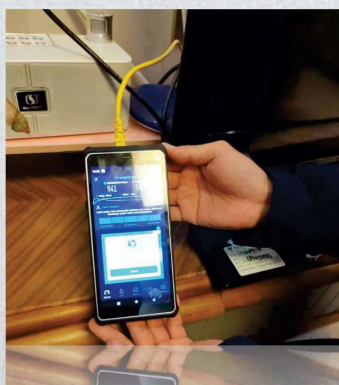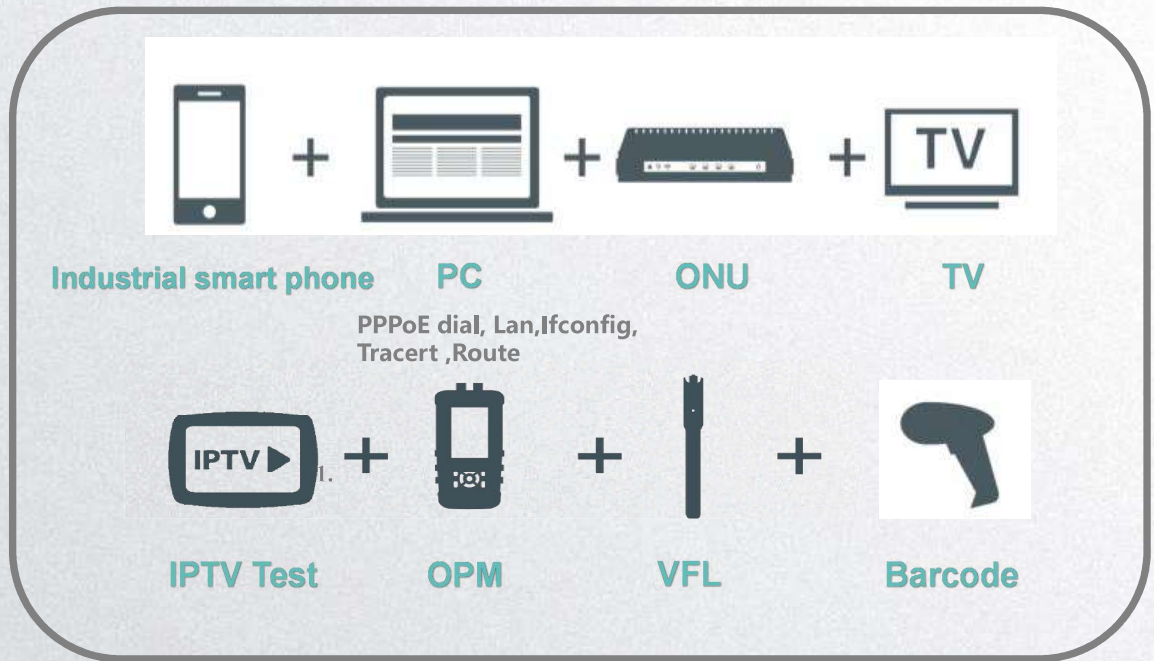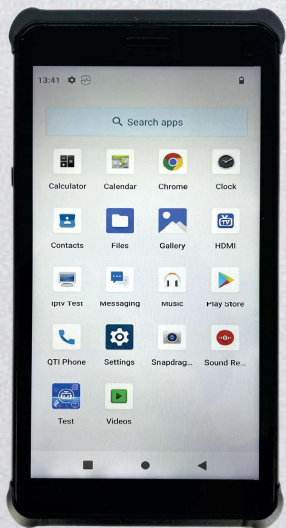
Main functions:

1.Snapdragon high-performance platform,with Android 12 OS,thin & light design,It can run various installation and maintenance work order APPs and daily APPs
2.Adopts 160M WiFi6 wireless Wifi6
3.OPM 10G-PON Power division OPM,auto-test after insertion
3.VFL:5mW,check the continuity of line
4.IPTV emulation, support HDMI HD,support VAG/720P/1080/4K tv Emulation,help troubleshot TV problem
6.Speedtest: Adopts 160M WiFi6 wireless Wifi6 + 2.5G wired network solution.
7.Network test:PING, TRACERT, IFCOFIG;PPPOE.LAN

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Troubleshooting and speed test

Industrial smart phone   PC   ONU   TV

PPPoE dial, Lan,Ifconfig,
Tracert ,Route

IPTV Test   OPM   VFL   Barcode

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Platform

New Snapdragon 7nm process 5G platform

Top performance in PDA industry

Fluency improved by 100%,ultra-thin, 17mm thickness

6 inch, 2160x1080 resolution,500 NIT

Clear display in the sunlight

性能跑分

SENTER 5G PDA S357 > HUAWEI MATE 50e

- 5G communication
- Top performance platform
- Thin & light design
- Android12
- 160M bandwidth WIFI 6
- Fast charging
- 2.5G wired network port
- Long duration
- Dual network ports
- WiFi interference analysis

◆ Run various installation and maintenance work order APPs and daily APPs

◆ The service life of new 5G PDA is greatly improved, the replacement cycle is prolonged, so the long-term purchase and use cost is reduced.

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S357 5G PDA Wired and Wireless Speedtest （S357 can realized Cable：2200Mbps WiFi 1800 Mbps）

WiFi Performance

Wired Performance

◆ 2.5G + 1G dual Lan port

◆ The 2.5G network port can realize wired network speed test above 2000M

Dual antenna 160M bandwidth WiFi6

◆ To meet the building construction acceptance requirements of FTTR

◆ The theoretical connection speed is up to 2400M, and it can realize wireless network speed test above 2000M

◆ Targeted optimization, the wifi speed and power consumption control have been greatly improved

WiFi interference signal analysis

According to the WiFi construction requirements of "smart home", "whole house WiFi" and other scenes, the product supports the analysis and evaluation of WiFi channel conditions and the analysis and positioning of WiFi interference signals, so as to realize the rapid deployment and optimization of WiFi that affecting the whole house

◆ The two network ports are simultaneously connected to the ONU or LAN of the router meantime.

◆ It is applicable to the construction acceptance scenario of gigabit ONU or router for 2000M

TV Simulation (IPTV Test)

Home broadband installation often encounter customers opened TV and video business, but no TV or other factors can not normally access the video of the set-top box display.

so the normal TV business can not open, often need two or three door-to-door service, directly affects the customer experience.
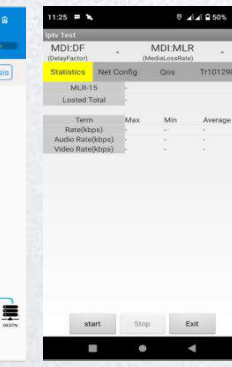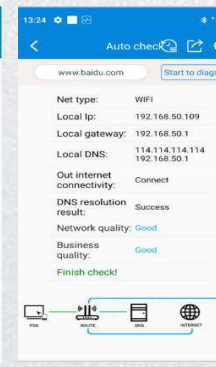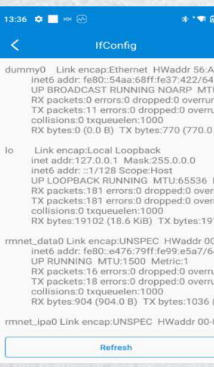
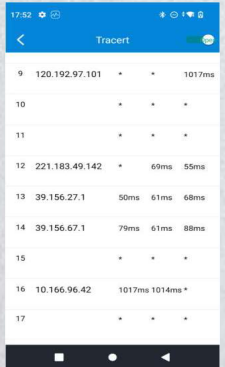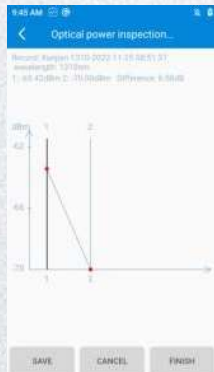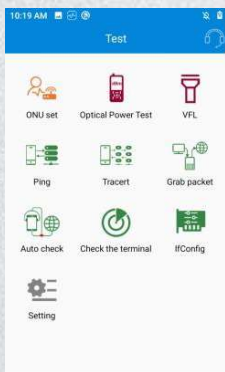**S357 can replace TV to plays video**

S357 is equipped with HDMI interface. You can connect the set-top box to the S357. -----------so, if the customers does not have a TV at home, the TV service can be activated and use.and Replace the user's home TV, troubleshoot TV faults
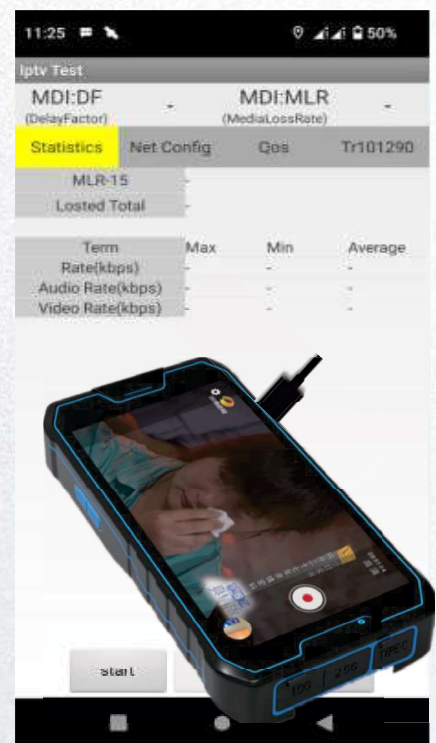
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S357 5G PDA Test functions:

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Application scene

- Telecom install and maintain enginner need take lot of testers to site.

- Gigibit network is popular now, but enginner still use the PC and personal cellphone to do the speedtest, that's easy to broke the PC and cellphone, not professional and incovnient.

- The TV service is important in the home bandboard business, but lack a special tester for IPTV business's monitor and check.If user wish to open this business, engineer have to visit the end user for 2-3 times.

- Normal testers cannot integrate with cellphone, so if the enginner's cellphone which used to accept the work order and tester are separate, its not professional.

- Telecom operator cannot manage and monitor enginner's working status and device's using status.

Super PC

Cellphone

Management Platform

Multifunction -in -one

Super PC

PPPoE Dial

PDA can through PPPoE dial connecting the network

LAN

PDA can access the Internet through DHCP or static IP mode.

PING, Ifconfig, Tracert, Route

PDA can conveniently test the network layer which including Ping test, ifconfig test, Route test and Tracert test. It will help field engineer to locate network faulty.
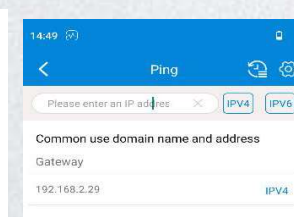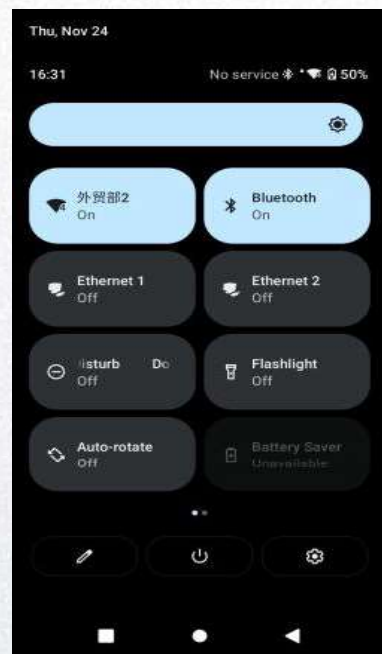
Super PC

Wired-network data testing

Network testing

- Configurate modem,brief the configurate process；
- Support Ping、Ifconfig、Tracert、Route network test
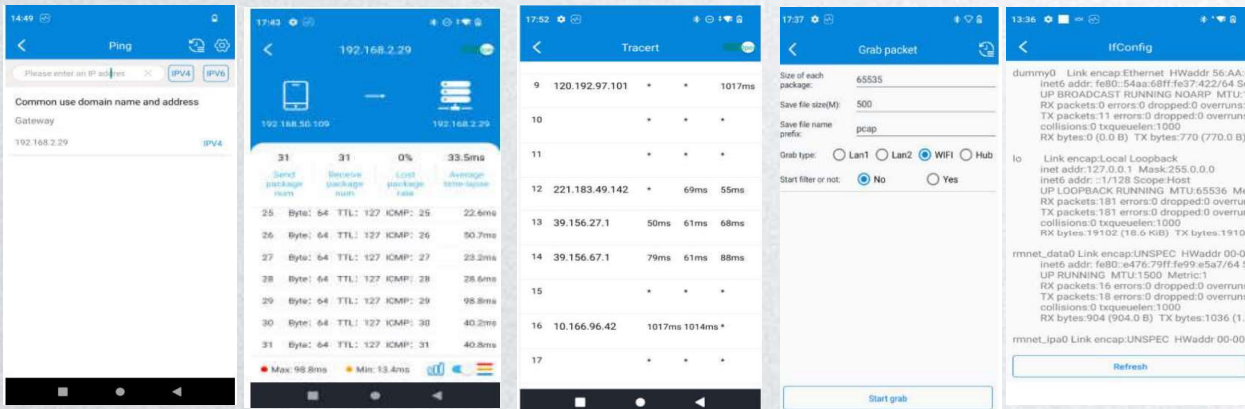
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Super PC

Speedtest: Wired Gigibit speedtest

Emulate PC to do Speedtest

1900M

Wired test DHCP/PPPoE rate more than950M

Full layer test

1min testing，support download upload、peak、average value、delay、loss ect.

More Precise

Not simulate speedtest,real broadband speedtest,result more precise

Customer satisfaction

Professional tester,improve customer satisfaction
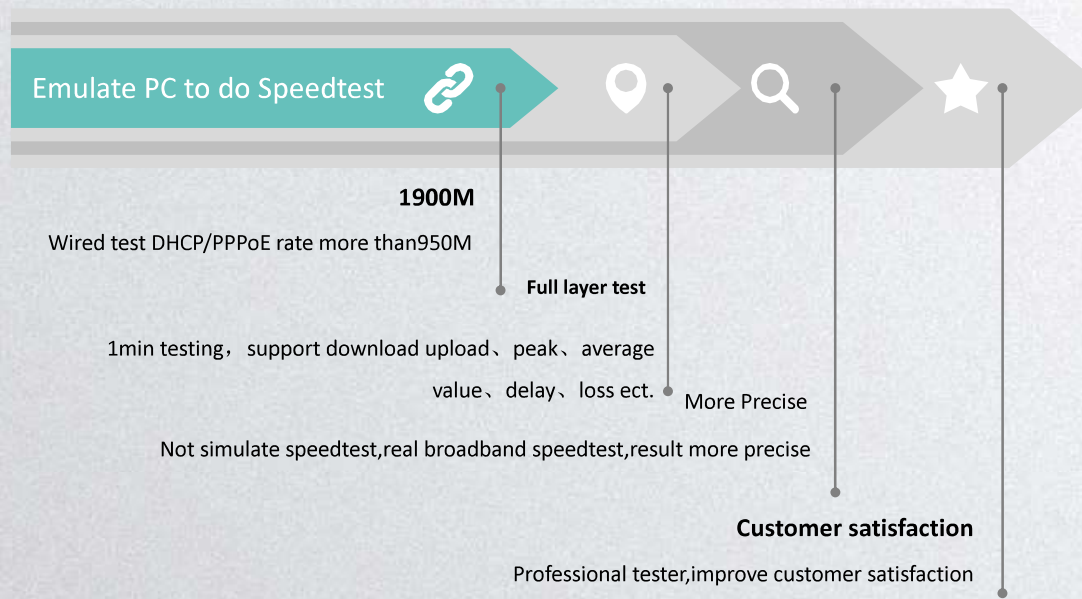
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Super PC Speedtest--WIFI network test

Smarthome WIFI networking test

WIFI networking test

Support testing for signal strength,channel, interferrance factor, network quality ect., thest indexs were shown in uniform standard

WIFI rate test

Support WIFI6 strength version (80M) , max test up to 920M, test better than normal cellphone

Support WIFI6 Gigibit speedtest request , uniform test standard

DIREKTRONIK

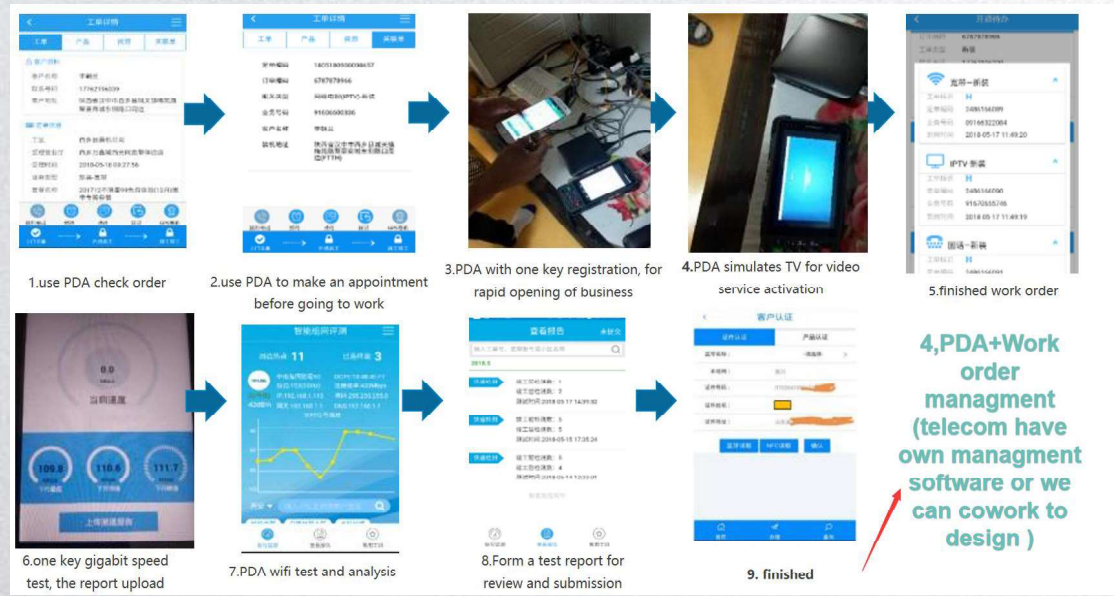**Cellphone platform- Support install Telecom's Work order App or any other needed App**

1.use PDA check order

2.use PDA to make an appointment before going to work

3.PDA with one key registration, for rapid opening of business

4.PDA simulates TV for video service activation

5.finished work order

6.one key gigabit speed test, the report upload

7.PDA wifi test and analysis

8.Form a test report for review and submission

9. finished

4,PDA+Work order managment (telecom have own managment software or we can cowork to design)

-- Android 12 operating system
--Telephone calls with Sim card
--Send & receive SMS
-- GPS location
-- Wi-Fi 2.4G and Wifi5G Wifi6
-- Bluetooth
-- Camera
--File management
-- Media play
-- Recorder
-- Flashlight
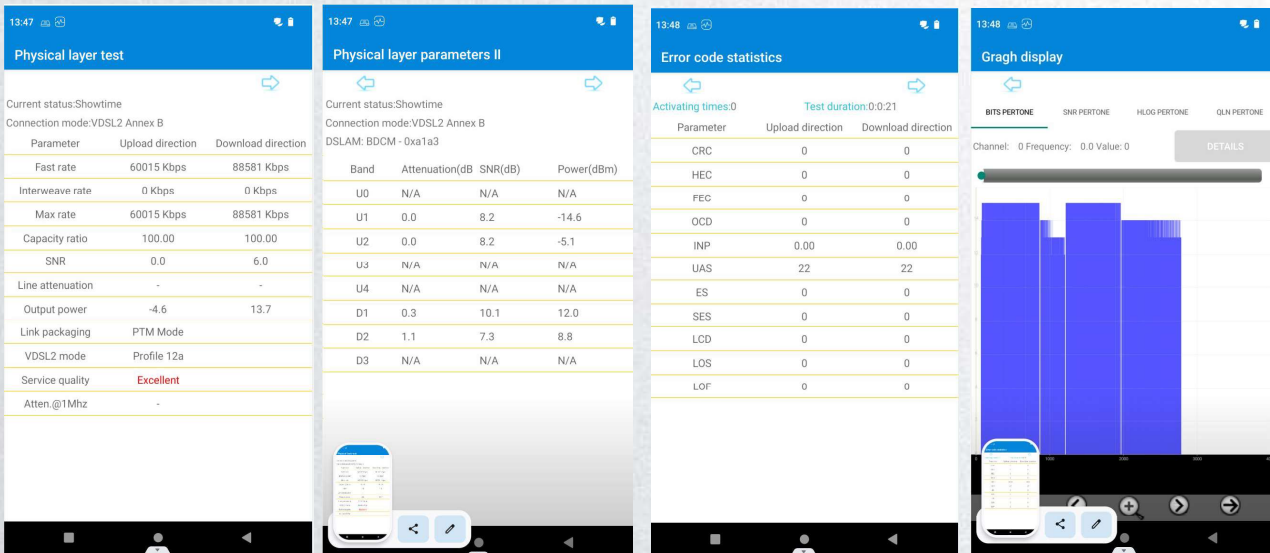--Google play
--Install App needed
....

Multi-function test

-- (G.fast/35b/VDSL/ADSL Tester)/ONU/OTDR
-- LAN Test/WAN Test
-- DMM test
-- TDR test
---Landline telephone
-- Optical Power Tester
---VFL
-- Cable Tracing
-- Chcek line sequence
-- IPTV/HDMI
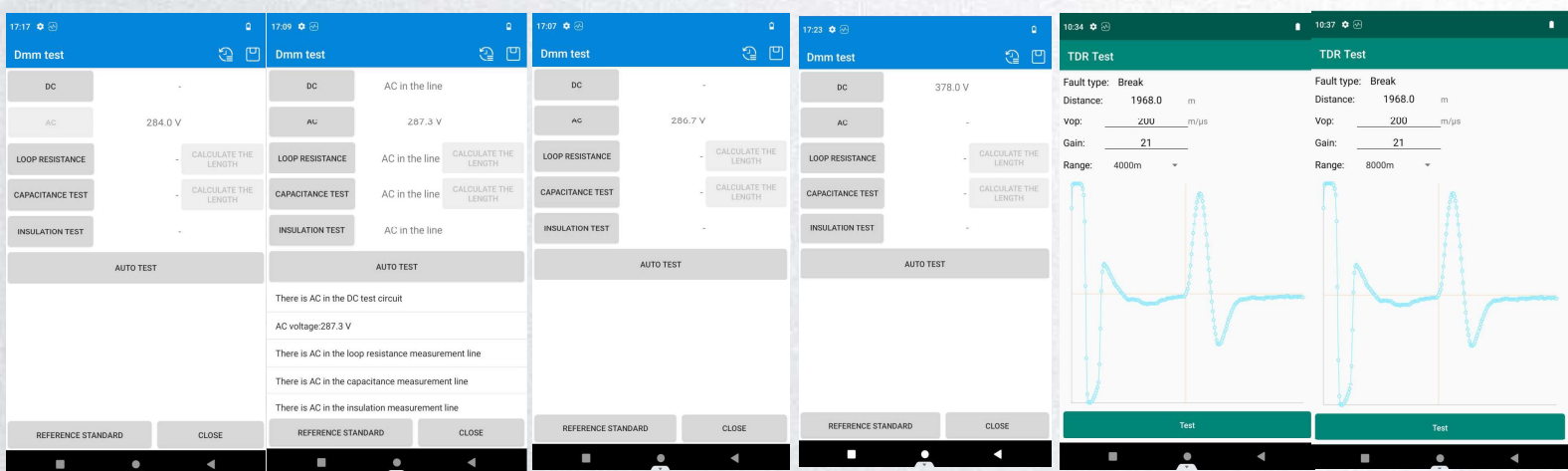--- Gigabit speed test(Wired/Wireless)
---Barcode scanner
---GPS
---NFC

Telecom test function--xDSL tester:

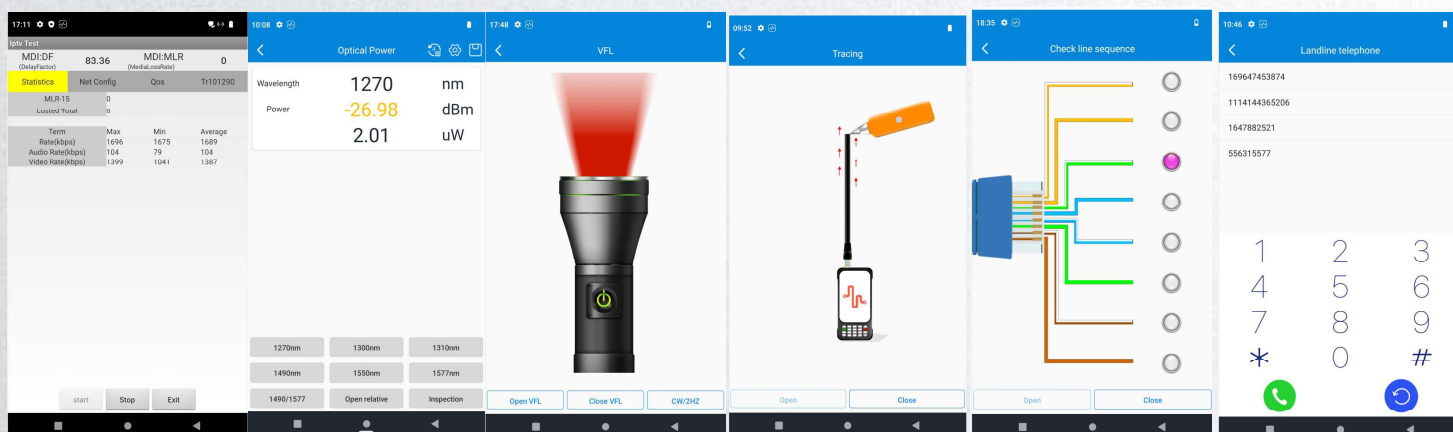**Screenshot 1 — Physical layer test**

13:47

Physical layer test

Current status:Showtime
Connection mode:VDSL2 Annex B

Parameter	Upload direction	Download direction
Fast rate	60015 Kbps	88581 Kbps
Interweave rate	0 Kbps	0 Kbps
Max rate	60015 Kbps	88581 Kbps
Capacity ratio	100.00	100.00
SNR	0.0	6.0
Line attenuation	-	-
Output power	-4.6	13.7
Link packaging	PTM Mode	
VDSL2 mode	Profile 12a	
Service quality	Excellent	
Atten.@1Mhz	-	

Screenshot 2 — Physical layer parameters II

13:47

Physical layer parameters II

Current status:Showtime
Connection mode:VDSL2 Annex B
DSLAM: BDCM - 0xa1a3

Band	Attenuation(dB	SNR(dB)	Power(dBm)
U0	N/A	N/A	N/A
U1	0.0	8.2	-14.6
U2	0.0	8.2	-5.1
U3	N/A	N/A	N/A
U4	N/A	N/A	N/A
D1	0.3	10.1	12.0
D2	1.1	7.3	8.8
D3	N/A	N/A	N/A

Screenshot 3 — Error code statistics

13:48

Error code statistics

Activating times:0   Test duration:0:0:21

Parameter	Upload direction	Download direction
CRC	0	0
HEC	0	0
FEC	0	0
OCD	0	0
INP	0.00	0.00
UAS	22	22
ES	0	0
SES	0	0
LCD	0	0
LOS	0	0
LOF	0	0

Screenshot 4 — Gragh display

13:48

Gragh display

BITS PERTONE   SNR PERTONE   HLOG PERTONE   QLN PERTONE

Channel: 0 Frequency: 0.0 Value: 0   DETAILS

Telecom test function-DMM+TDR:

Telecom test function:

PDA management platform

- Track statistics: Real time view PDA's location and personnel activity trail to facilitate background statistics management and lost tracking.

- Statistic PDA test function's using status

- Remote sending file,realizes the rapid sending and the synchronization of the business data file of same working group

- More functions can be added according to each telecom operator's request........

Platform preview

Personnel management

Gps location for engineers
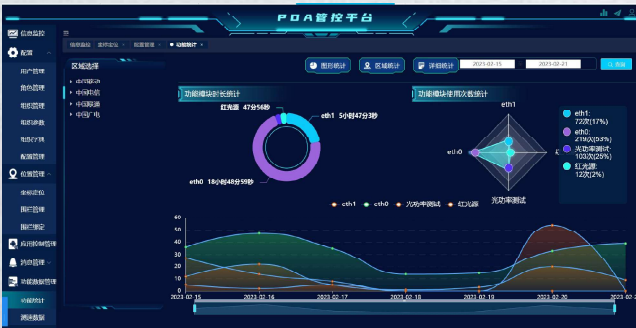
Function testing times statistics

Notice sending