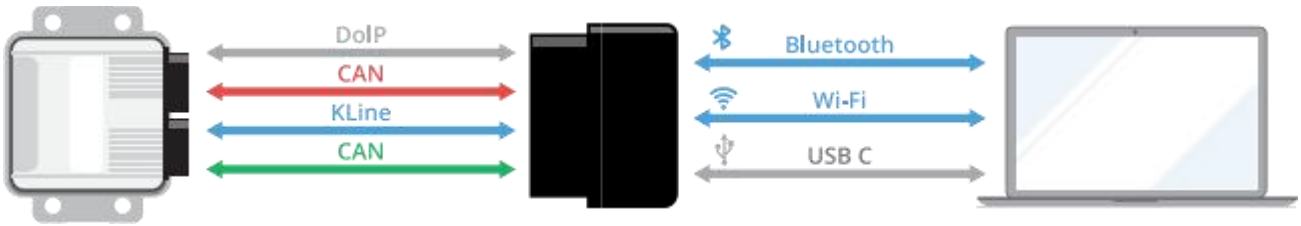
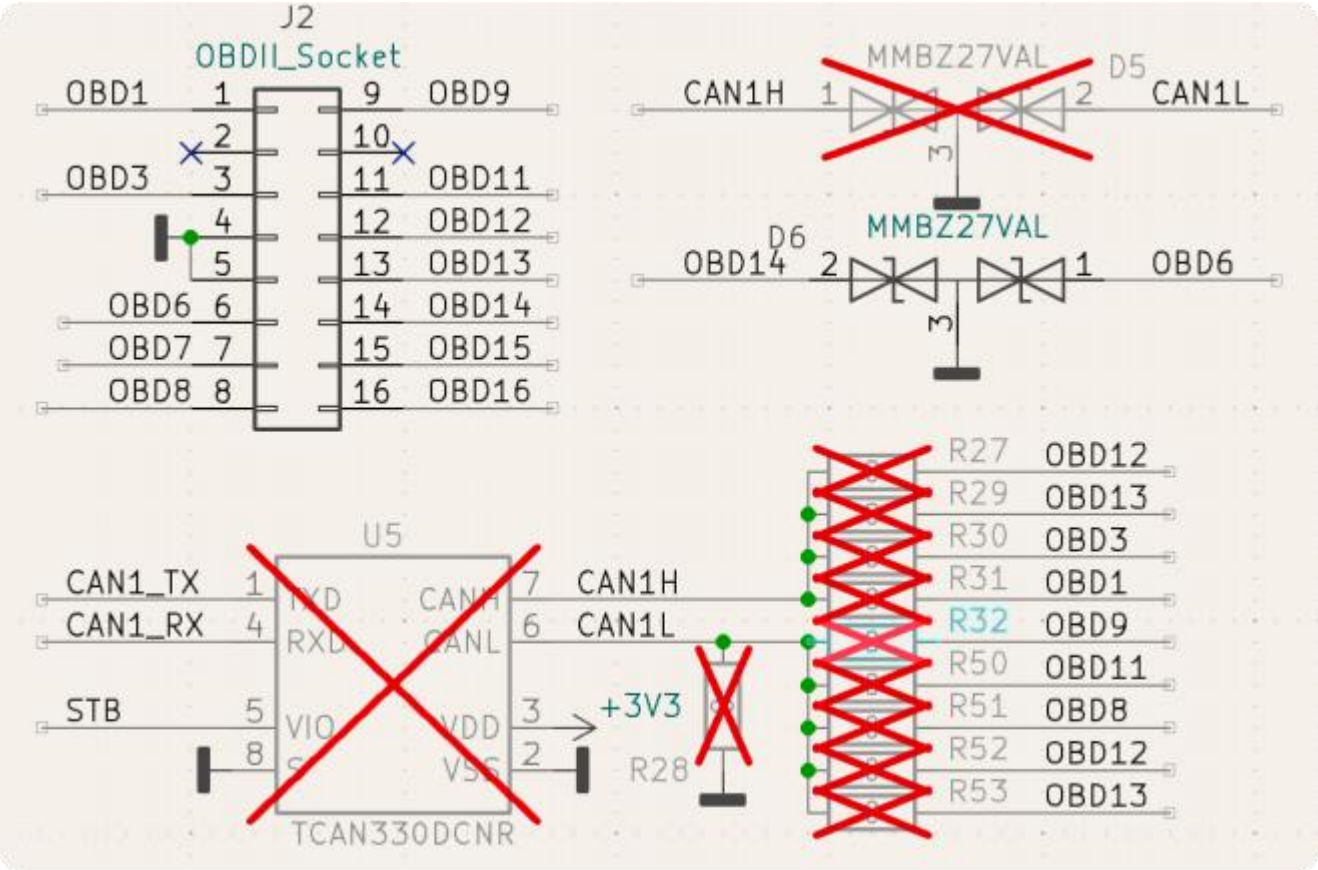
ScanDoc Nano

Brief description

The ScanDoc Nano series of adapters provides communication between a smartphone or computer and a car. Data communication between the adapter and the smartphone occurs via Wi-Fi or Bluetooth using the J2534 protocol. Data communication with the car occurs via CAN, Ethernet or Kline interfaces, using SAE/ISO automotive protocols.



There are five types of adapters. Each works only with its own group of car brands. All five adapters have the same circuit and printed circuit board. The difference is in the switching of the CAN interface pins of the OBDII connector and the presence or absence of an Ethernet interface for communication with the car.



Device variant	Communication interface with ECU (OBDII output)	Printed circuit board
Scandoc nano MB	DoIP (3,11,12,13) HS-CAN (6,14) KL (7,15)	
Scandoc nano FD	HS-CAN (6,14) FT-CAN (3,11) KL (7,15)	
Scandoc nano FT	H-CAN (6,14) FT-CAN (1,9) KL (7,15)	
Scandoc nano PG	HS-CAN (6,14) HS-CAN (3,8) KL (7,15)	

Device variant	Communication interface with ECU (OBDII output)	Printed circuit board
Scandoc nano OP	HS-CAN (6,14) SW-CAN (1) KL (7,15)	

Appearance


ScanDoc
NANO
Rueckertstr. 10
32257 Buende, DE
www.quantexlab.com
S/N: N39525
XXX-XXXXXX
XXX-XXXXXX
FCC ID: XXXXX-XXXXXXXX

Communication and protocol processing processor are implemented on the **ESP32-PICO-MINI-02** (https://www.espressif.com/sites/default/files/documentation/esp32-pico-mini-02_datasheet_en.pdf) module.

Module Certificates (https://www.espressif.com/en/support/documents/certificates?keys=&field_product_value%5B%5D=ESP32-PICO-MINI-02)

Technical characteristics

- Diagnostic interfaces: KL-Line, CAN+Ethernet or 2xCAN;
- Protocols: J2534-1/2, EL327, KW71, KW81, KW82, KW1284, DS2, ISO8, ISO14230, ISO9141, ISO15765, J1979, J1850, TP2.0, J1939;

- Communication:
  - WI-FI: IEEE 802.11b 100mW, 11 or 14 (Japan) channels, 150 Mbit/sec (theoretical), range in open areas from 10 to 50 m;
  - Bluetooth: 4.2, Low Energy;
  - UBS: Type C 12 Mbit/s.
- Power: 9-30V DC.

For test

0:00 / 4:16

HS-CAN test (all device variants)

Step 1. Install the application

Download and install the application on your smartphone:

Θ **QuantexJ2534Demo.apk** (/en/develop/QuantexJ2534Demo.apk)

Step 2. Switching on

When power is supplied, the LED will light dimly, then brightly, and after passing internal tests, it will go out. After that, the device is ready for operation.

The device can withstand incorrect power supply connections. If you use a control unit from a car for joint testing, please note that the control unit does not have reverse polarity protection. Disconnect the control unit if you need to perform a power stress test.

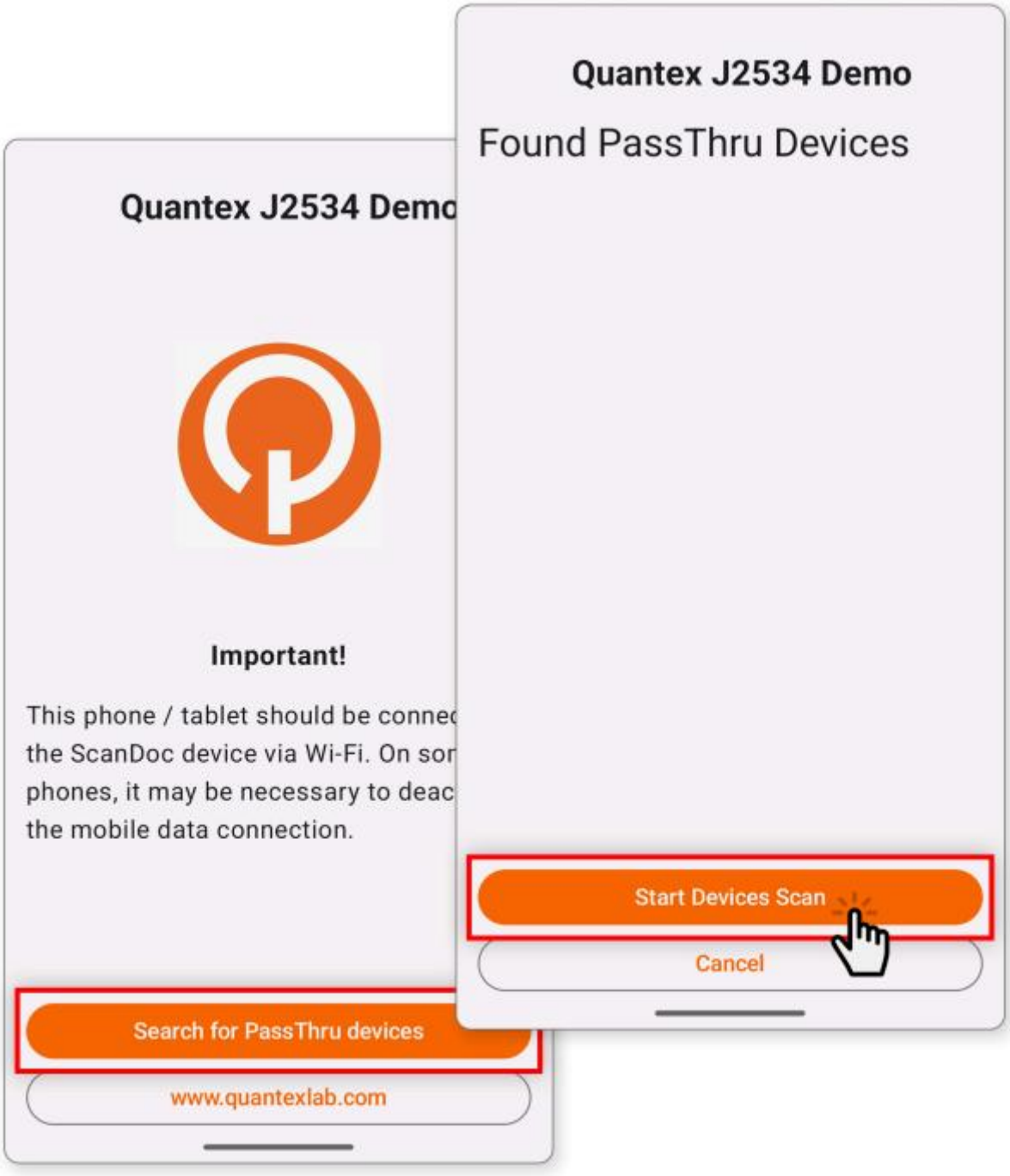
Step 3. Pairing

After power is applied, ScanDoc turns on Bluetooth and Wi-Fi simultaneously and waits for the smartphone to connect to it. If pairing occurs via Bluetooth, then Wi-Fi is disabled. And vice versa. When connecting a smartphone to ScanDoc as an access point, it disables the Bluetooth interface. After pairing or connecting via Wi-Fi, the device remembers the choice until the power is removed.

If you want to change the connection mode, disconnect the device from the power supply, break the Wi-Fi connection, or delete the remembered Bluetooth pairing in the Android settings.

Bluetooth LE - **Name:**QSNxxxxx, **password**123456

Wi-fi - **SSID:**QSNxxxxx, **password**:scandocxxxxx



Step 3. Launch the program and connect to the adapter

Launch the program on your smartphone with Android up to version 15. Click the **"Search for PassThru devices"** button, then **"Start Devices Scan"**.

After a while, a list of found devices will appear. If you want to connect via Wi-Fi, then click on **sdn;n:192.168.12.3**. If you want to connect via Bluetooth, then select **QSN;bxx:xx:xx:xx:xx**

Then a connection with the adapter will be established and you will see the Hadrware and Software versions of the adapter

ScanDoc Nano

Step 4. Periodic data communication

To ensure constant data communication, press the **"Connect to Car"** button. The scanner will begin constant communication with the vehicle control unit via the CAN bus. It will also show the supply voltage at pin 16 of the OBD-II connector. The LED on the device will light up when sending and go out when receiving a packet.

Ethernet Check (ScanDoc nano MB only)

Step 1. Installing the application

Download and install the application: **Ping IP network utility** (https://play.google.com/store/apps/details?id=com.rtsoftware.pingtool&hl=en) on your smartphone. Or a similar program that can send and receive ping. You can also use a computer.

Step 1. Switching on

When power is supplied, the LED will light dimly, then brightly, and after passing internal tests, it will go out. After that, the device is ready for operation.

The device can withstand incorrect power supply connections. If you use a control unit from a car for joint testing, please note that the control unit does not have reverse polarity protection. Disconnect the control unit if you need to perform a power stress test.

Step 1. Establishing a connection

ScanDoc in Ethernet (DoIP) mode works only via Wi-Fi connection. It creates a bridge between Wi-Fi and Ethernet. Connect to the device via Wi-Fi.

Wi-fi - **SSID:**QSNxxxxx, **password**:scandocxxxxx

Step 2. Periodic data communication

Using the application, send ping commands to the address 192.168.12.4 . In this case, the indicator on the device will blink with the transmission of each packet over Ethernet. If blinking does not occur, then change the address to 192.168.12.5

↑ Up

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment