



BCP01 RTA

User Manual

HW version:113.000.001

SW version:130.040.045

Making every drive better™

BCP21 RTA

Intended Use

- Body Domain Controller device for controlling several vehicle functions

Specifications

- Voltage: 13,5 V
- Current: 1,3 A
- Frequency: 125kHz
- Software Version: 130.040.045
- Hardware Version: 113.000.001

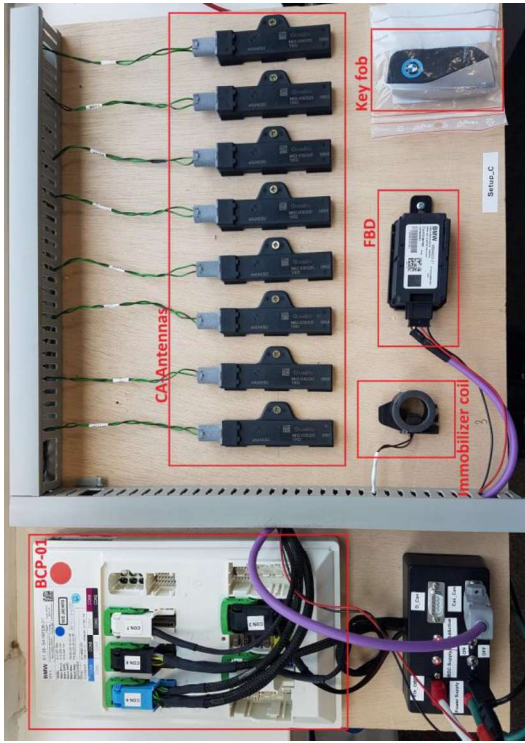
- This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:
 - (1) This device may not cause harmful interference, and
 - (2) this device must accept any interference received, including interference that may cause undesired operation



Manual for homologation testing

BCP21 RTA

Index/Process Checklist



Process Steps	Page	Verification
SW tools and Setup Preparation	3	✓
Setup and connectors	4 & 5	✓
Diagnoser Connection	7 & 8	✓
Diagnoser Script Selection	9	✓
Diagnoser Script Execution	10 & 11	✓
Diagnoser Script modification (if needed)	12	✓
Transponder Coil Function	13 & 14	✓

BCP21 RTA

SW tools and Setup Preparation

Before start, we need to assure that we have installed the following SW programs on the computer:

-Diagnoser



-Ediabas and the .prg file related to **BCP21** project(BCP_SP21.prg)



The script needed for automatic cyclical requests:

- RTA_transp+Ant_testing.SKR diagnoser Script



Manual for homologation testing

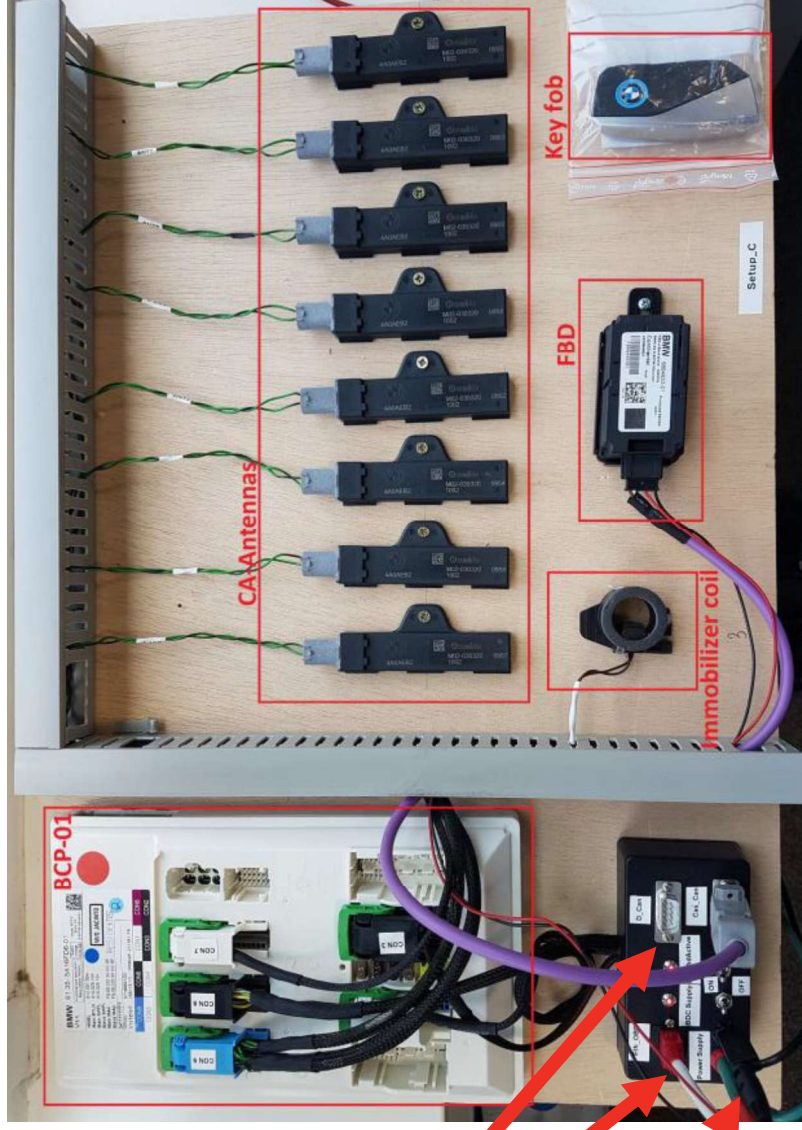
BCP21 RTA

Setup and connectors

Ethernet Port and D_CAN:
Establish communication with
SW tools Diagnoster and Ediabas

Supply Line: 13,5 Vdc and Gnd

Manual for homologation testing



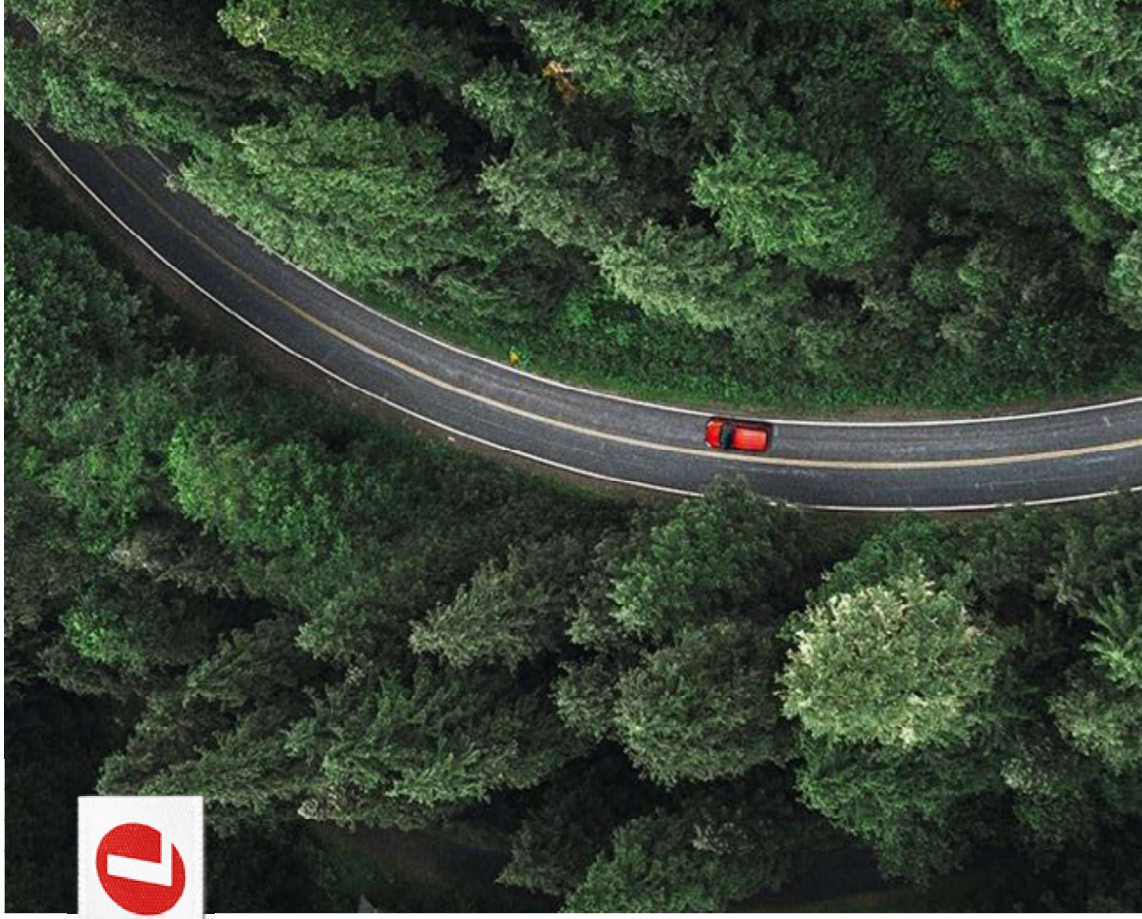
Setup and connectors

Once the part is powered up and ETH_ACT is activated, both LED indicators must be turned on in order to indicate the correct status of the part.



Making every drive better™

Be Inclusive
Be Inventive
Get Results the Right Way

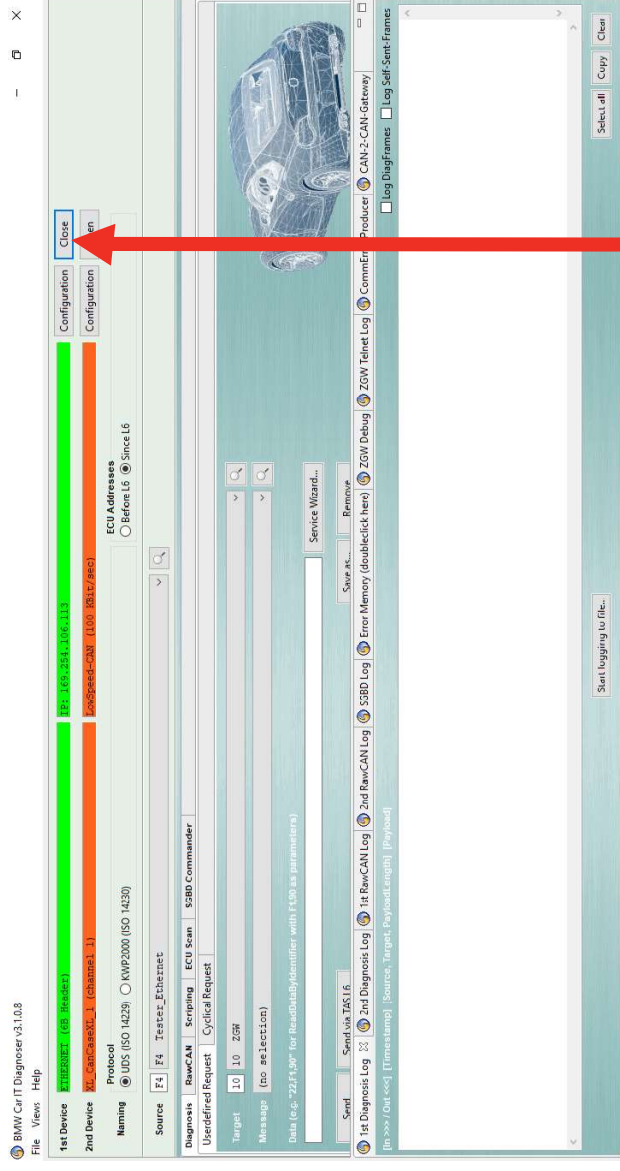
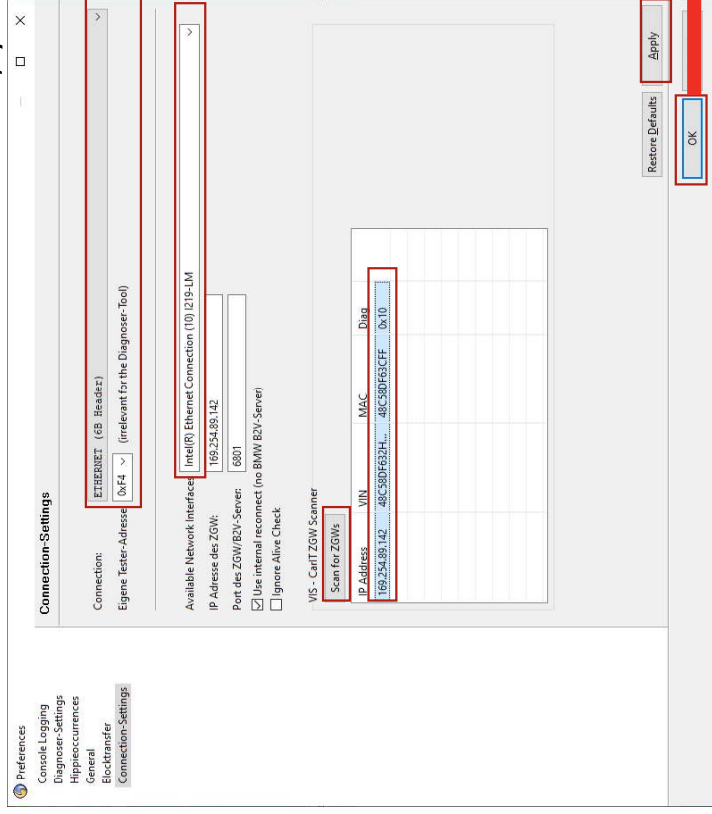


Diagnoser Connection

BCP21 RTA

Diagnoser Connection

Click on Scan for ZGWs and you will find the part's IP, click on it, then "Apply" and finally "OK". After that, click on "OPEN". If the connection is well established, you will see the green window as shown in the below image:



Manual for homologation testing

BCP21 RTA

Diagnoser Script Selection

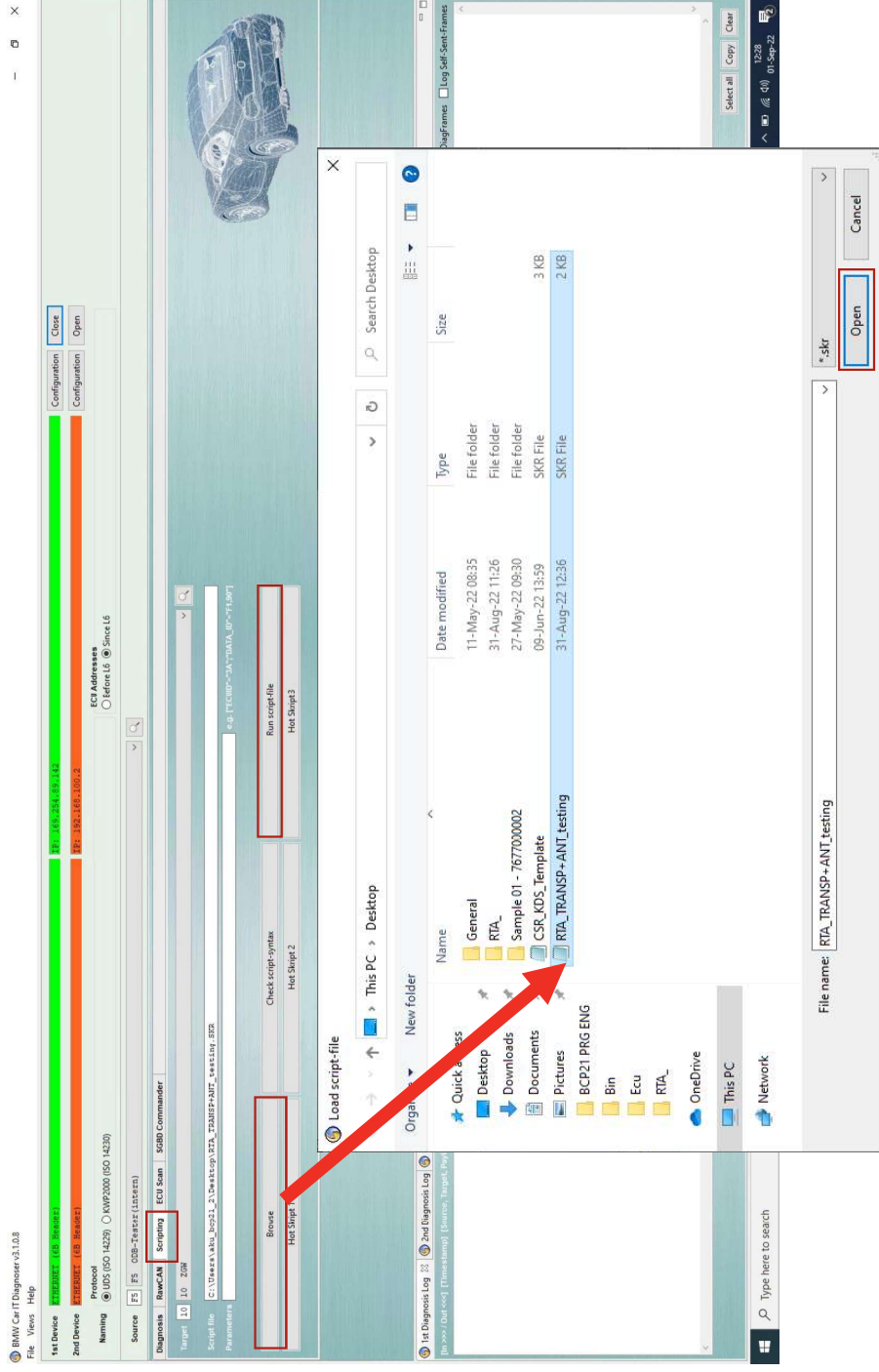
Go to Scripting widows;

Click on "Browse" to select the script;

Select "RTA_transp+Ant_testing.SKR "



Click on "Run script-file" to execute it.



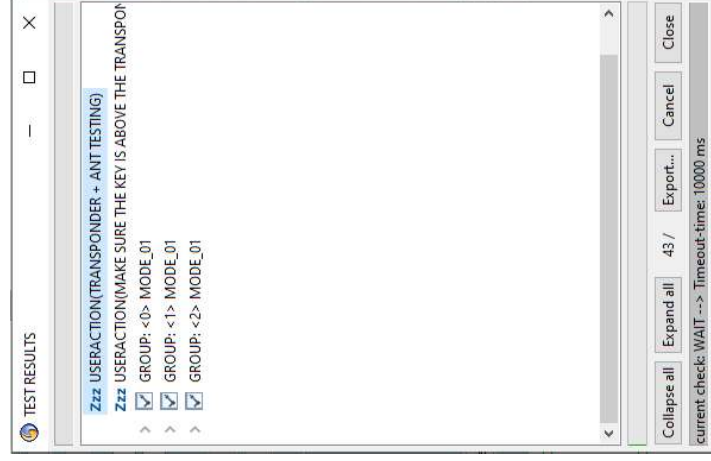
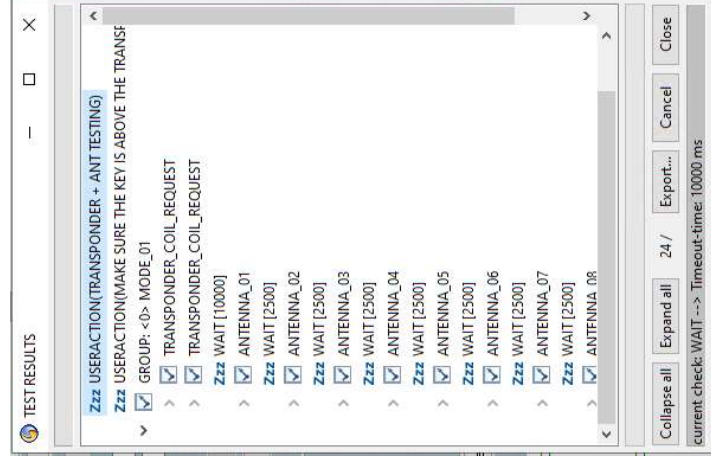
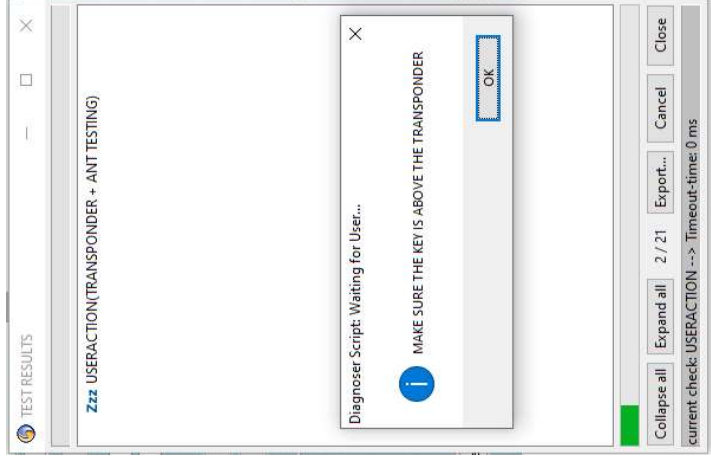
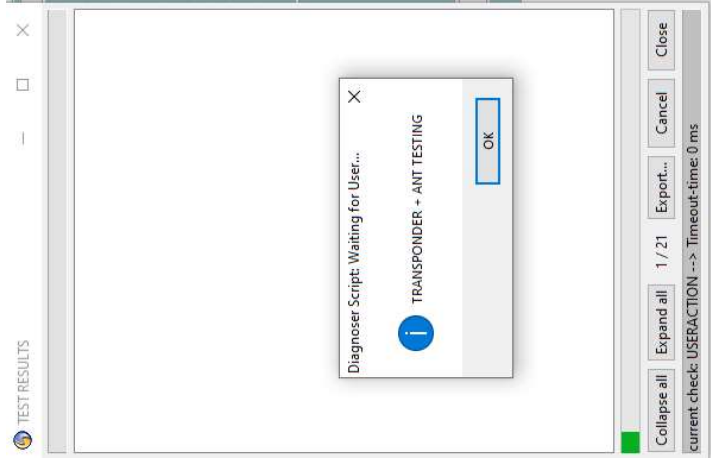
Manual for homologation testing



BCP21 RTA

Diagnoser Script Execution

Click OK on both prompts, then the cyclical testing will start. Each group is a complete set of testing.

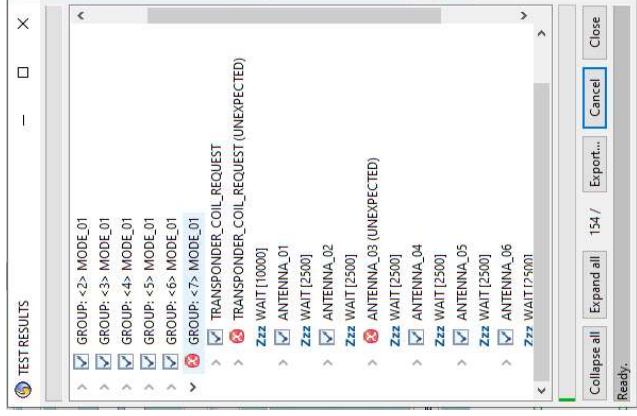


Manual for homologation testing

BCP21 RTA

Diagnoser Script Execution

If an error is found, the GROUP will be marked with the red marking and will specify which load is presenting an issue. For the bellow example, we simulated an open load at the transponder coil and antenna_03. To stop the testing click on "cancel" then "close".



Manual for homologation testing

Diagnoser Script modification (if needed)

```
RJA TRANSP + ANT_testing - Notepad
File Edit Format View Help
USERACTION("Transponder + Ant testing")
USERACTION("Make sure the KEY is above the Transponder")

LOOPSTART [MODE_01] [COUNT [1000]]
//FIRST READING DONT DETECT THE DTC
DIAG[Transponder_Coil_Request] SEND[22,D2,63] EXPECT[62,D2,63,??,??,??,??,??,??,??,??,??,??,??,*] TIMEOUT[10000]
//SECOND READING DETECT IF THERE ARE DTC OPEN LOAD OR SHORT-CIRCUIT
DIAG[Transponder_Coil_Request] SEND[22,D2,63] EXPECT[62,D2,63,??,??,??,??,??,??,??,??,??,??,??,*] TIMEOUT[10000]
WAIT[10000]
DIAG[Antenna_01] SEND[31,01,AC,53,00,01] EXPECT[71,01,AC,53,01] TIMEOUT [10000]
WAIT[2500]
DIAG[Antenna_02] SEND[31,01,AC,53,00,02] EXPECT[71,01,AC,53,01] TIMEOUT [10000]
WAIT[2500]
DIAG[Antenna_03] SEND[31,01,AC,53,00,03] EXPECT[71,01,AC,53,01] TIMEOUT [10000]
WAIT[2500]
DIAG[Antenna_04] SEND[31,01,AC,53,00,04] EXPECT[71,01,AC,53,01] TIMEOUT [10000]
WAIT[2500]
DIAG[Antenna_05] SEND[31,01,AC,53,00,05] EXPECT[71,01,AC,53,01] TIMEOUT [10000]
WAIT[2500]
DIAG[Antenna_06] SEND[31,01,AC,53,00,06] EXPECT[71,01,AC,53,01] TIMEOUT[10000]
WAIT[2500]
DIAG[Antenna_07] SEND[31,01,AC,53,00,07] EXPECT[71,01,AC,53,01] TIMEOUT [10000]
WAIT[2500]
//DIAG NOT CODIFIED.c SEND[31,01,AC,53,00,08] EXPECT[71,01,AC,53,01] TIMEOUT [10000]
//WAIT[2500]
DIAG[Antenna_08] SEND[31,01,AC,53,00,09] EXPECT[71,01,AC,53,01] TIMEOUT [10000]
WAIT[2500]
LOOPEND [MODE_01]
```

Transponder and individual Antenna testing can also be modified according to lab needs.

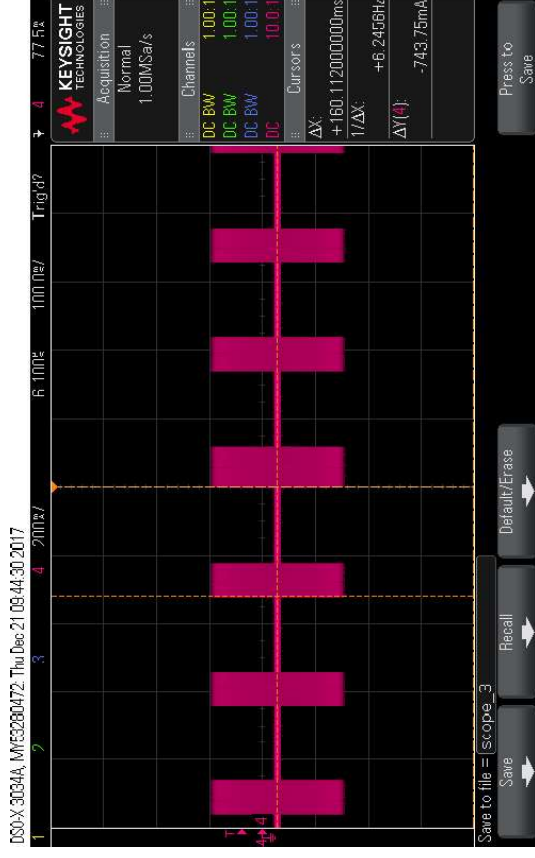
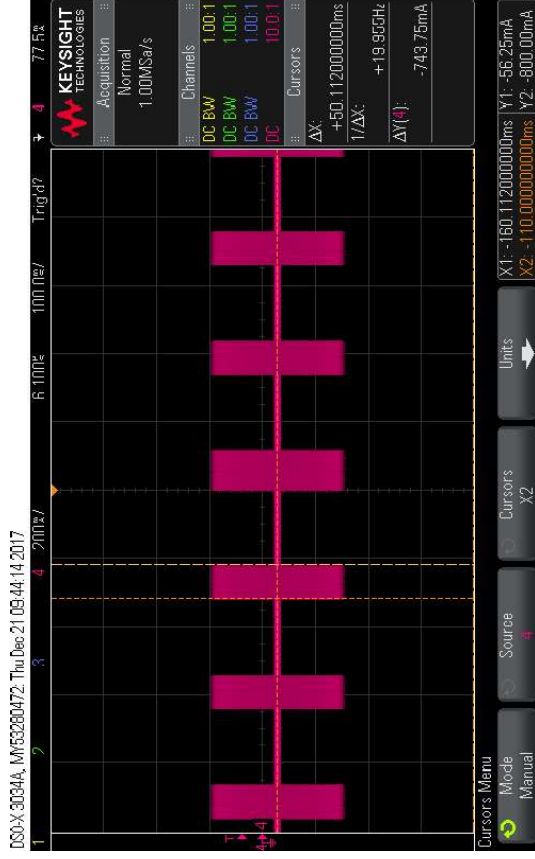
In order to skip some steps just needs to apply “//” before the line in order to comment on it.

BCP21 RTA

Transponder Coil Function

When the key has a low battery and the car can't be started via the keyless go function, the key must be placed next to the transponder coil and trigger the communication.

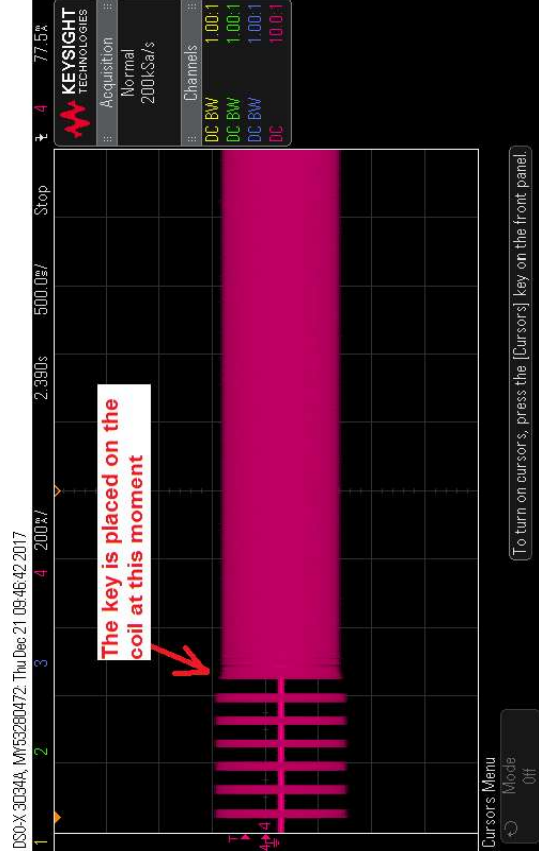
When there is no key placed on the transponder coil and the immobilizer is activated:



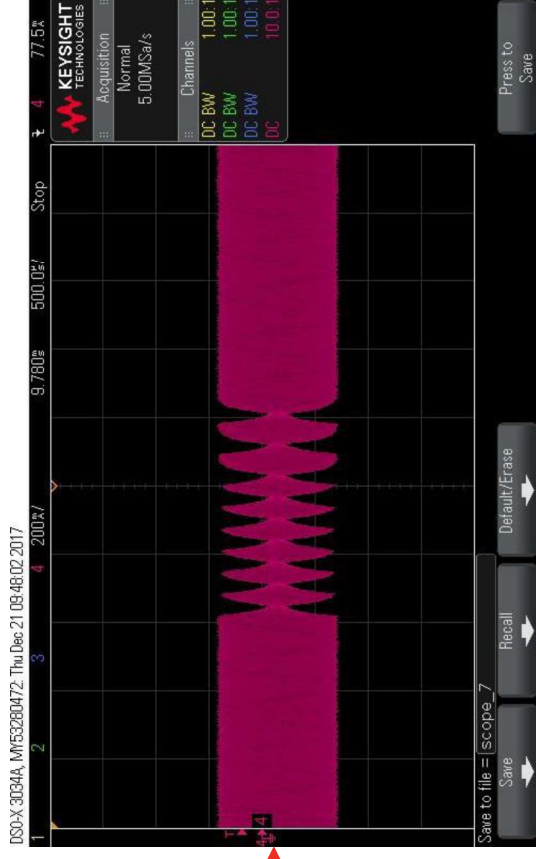
Manual for homologation testing

BCP21 RTA

Transponder Coil Function



Zoomed:



If you see that the signal is changed as it is in the last two pics that means the key is identified and the SW will decide if this key is the right key and if the car can be started.



Manual for homologation testing