Modify a USB KKL 409.1 Vagcom Cable for BMW Bike K-Line Diagnostics

Reasons The Jephis Technology Ltd cables used by the car enthusiasts work well but are relatively expensive & include CAN Bus which is not needed for most machines.

These Vagcom cables are cheap & the PCB lends itself better to removing the OBDII plug, soldering on a USB socket & permanently wiring to the bike eliminating the need for the big BMW connector. (Suitable for K Line only machines like F650GS)

1/ Buy a Vagcom cable KKL409.1, ebay
 (cost $US9 inc shipping)
 ensure it uses chip FT232RL

 A reliable supplier is

  http://stores.ebay.com/carscanner

2/ If the cable is supplied without drivers
 & utilities, download them from FTDI

  http://www.ftdichip.com

3/ Install driver Plug in cable, WinXP will find cable,
    point to directory with drivers, windows installs.

4/ Set the USB Serial port parameters

 /MyComputer/Properties/DeviceManager/Ports(Com&LPT/SerialUSB/Advanced

 Set the Latency timer from default 16 msec. to 1 msec
 Check USB Port No matches Port No set in INPA/EDIABAS (OBD2.ini)

5/ Install Mprog & modify the programming of the eeprom FT232RL
 We need to invert RI # and DSR # signals to fool the detection of battery and ignition.

 After programming check your I/O Control settings, they must be :

 #C0 = RXLED #C1 = TXLED #C2 = POWERON #C3 = PWRON
 #C4 = SLEEP Invert RI ticked Invert DSR ticked

 Save settings

Setup a K+DCAN USB Interface Cable for BMW Bike Diagnostics

K+DCAN USB Cable

A reliable supplier is

http://www.one-stop-electronics.com

These cables must be INPA/EDIABAS
compatible, cost is about $US80

At this time only the K1600 is known to use
CAN bus for diagnostics

Notes

1/   Dependant on the software, model & adaptor cable used it may be necessary to invert RI #
      and DSR signals to for detection of battery and ignition as per the VAG KKL cable.

2/   This cable & access through the diagnostics port is yet to be tested

Software Install

1/ If the cable is supplied without drivers & utilities download them from FTDI

2/ Install driver   Plug in cable, WinXP will find cable,
                           point to directory with drivers, windows installs.

3/ Set the USB Serial port parameters

      /MyComputer/Properties/DeviceManager/Ports(Com&LPT/SerialUSB/Advanced

      Set the Latency timer from default 16 msec. to 1 msec
      Check USB Port No matches Port No set in INPA/EDIABAS (OBD2.ini)

4/   Install Mprog & modify the programming of the eeprom FT232RL
      We need to invert RI # and DSR # signals to fool the detection of battery and ignition.

      After programming check your I/O Control settings, they must be :

      #C0 = RXLED   #C1 = TXLED   #C2 = POWERON   #C3 = PWRON
      #C4 = SLEEP   Invert RI ticked   Invert DSR ticked

      Save settings

Diagnostics Adaptor Cable

Where the connection to the bike is to be via the BMW 10 pin diagnostics socket an OBDII female to BMW 10 pin plug adaptor cable is needed to connect to the OBDII to USB cable.

A source for the BMW 10 pin plug is the Ignition cable from an E36/E39 6 cylinder car.

Cable harness, Ignition coil

Labelled as
Part No 1 744 589A

Used on E36/E39 6 cylinder

Also listed as P/N 12511744589
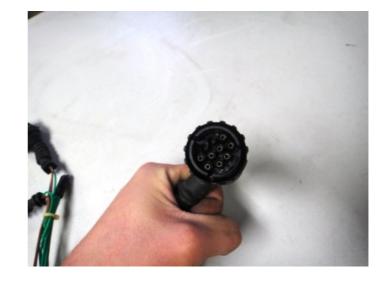
Pin Extraction Tool

Wurth 558 999 1

8 pins fitted but in wrong pin No's

Pin 01 – Vi/Sw
Pin 02 – Sw/Rt
Pin 04 – Ws/Ge
Pin 05 – Ws/Bl
Pin 07 – Ws
Pin 08 – Gn/Ws
Pin 09 – Br
Pin 10 – Gn

We need pins 1,2,4,6,7,9,10
(Pins 7 & 9 are K1600 CAN Bus)

Plug with bike socket

Adaptor Cable Wiring Diagram

K-Line only Adaptor   (F/G/X 650 & other models 2000 to 2011)

       Signal   OBDII Socket   BMW 10 pin Plug

```
K1 15 (Ignition On)        1------------------------------10
     Ground               4&5------------------------------4
     K-Line 1 (BMS)         7-------------------------------1
     K-Line 2 (ABS)         8-------------------------------2
   KL 30 (Bat+)            16-------------------------------6
```


For use with VAG KKL 409 USB cable

Universal K-Line & CAN BUS Adaptor   (K1600)

       Signal   OBDII Socket   BMW 10 pin Plug

```
K1 15  (Ignition On)        1------------------------------10
     Ground                4&5------------------------------4
     CAN Hi                 6-------------------------------7
     K-Line 1 (BMS)         7-------------------------------1
     K-Line 2 (ABS)         8-------------------------------2
     CAN Lo                14-------------------------------9
   KL 30 (Bat+)            16-------------------------------6
```


For use with K+DCAN USB Interface Cable

Adaptor Cable Notes

1/ The adaptor cable has been tested & works with ICOM-A & ISTA-D for F/G series machines

2/ The adaptor cable has been tested & works with INPA/EDIABAS for F/G series machines

3/ G450X needs a loop between pins 6 & 10 of the BMW 10 pin plug to stop ignition time out.

4/ Some Models (eg F/G 650) are 3 wire only to the diagnostics socket. (No ignition detection)

5/ Some models have (eg F/G 650) have K-Line 1 & 2 connected in the wiring harness.