

**BMW Extended Camera Emulator for Fxx CIC/NBT HeadUnit
SW Ver 1.28.1X**

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1. Designation

This module is designed for installation on BMW cars with head unit HU CIC and it emulates the functioning of TRSVC control unit. In case if the car is not equipped with PDC module emulates functioning of PDC. The module also adds markings to rear view camera image of the path of the vehicle depending on the steering angle (hereinafter - **the parking lines**).

2. Description

Design of the module and its pins are shown on the picture 1.

Module analyses data bursts from CAN bus and if control unit PDC is not installed on the car then while engaging rear gear during pressing the button of engaging parktronic of the climate control unit IHKA or during switching of PDC control unit in active mode. In other cases module activate switching of the head unit into the mode of showing video signal from the rear view camera (RVC) and also activate output "RCam ON". In case if control unit PDC is not installed when changing gear from R in some other position or by pressing standard parktronic activation button or during switching ECU PDC to passive state when PDC installed module activates switching of head unit to common state of showing the image and also switch output "RCam ON" to passive state.

Module has the function of cyclic activation of the image RVC on the display of head unit with the help of multifunctional button "Star" on the right side of the steering wheel.

In case if you press and hold (more than 1 second) this button module will change to the signal from RCV.

In case if you press the button second time and hold (more than 1 second) then it will be switched to the board computer (BC) of the car.

Module has 8 jumpers for switching on and off for additional options. The function of switching is shown in the Table 1. You can find recommended positioning of the jumpers are shown in the list 2.

Table 1

	HU NBT, CIC F30		HU CIC F01, F02, F10, F13, F25	
	Opened	Closed	Opened	Closed
SW0	Video in motion off	Video in motion on	Do not close	
SW1	Navi activation off	Navi activation on	Do not close	
SW2	Do not close		Do not close	
SW3	Do not close		Close	
SW4	Do not close		Do not close	
SW5	Do not close		Do not close	
SW6	Do not close		Do not close	
SW7	Internal OSD menu disabled	Internal OSD menu enabled	Internal OSD menu disabled	Internal OSD menu enabled

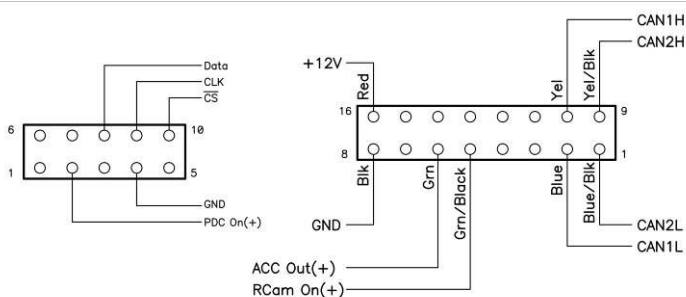
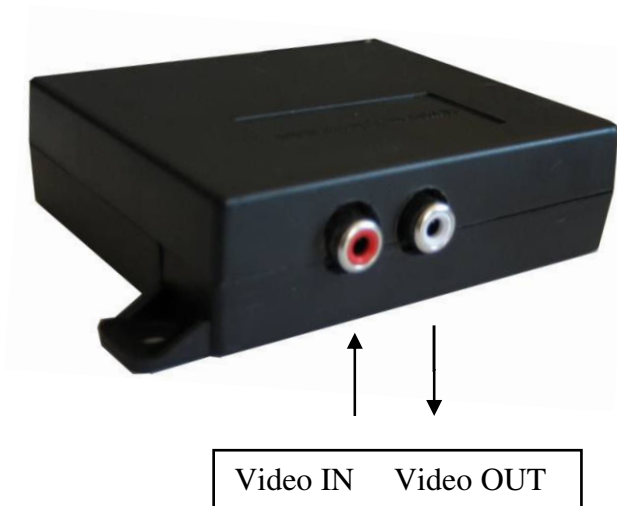
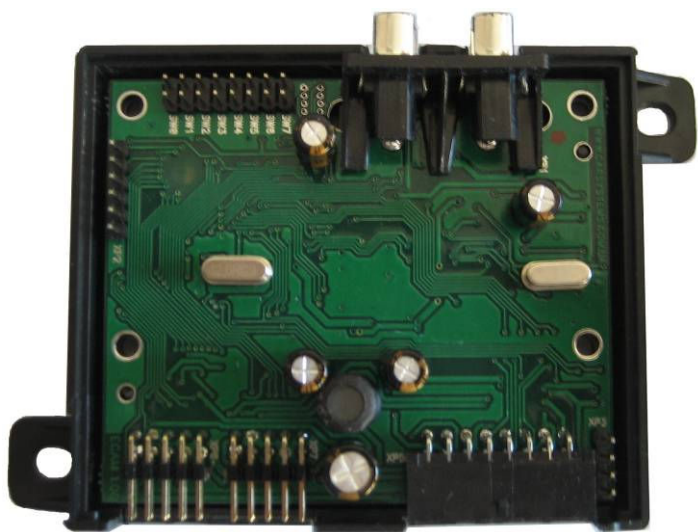
Module can be issued as well with the soft version which contains function of working together with external parktronic PTS400M6 (SteelMate). If the PDC is not installed then its emulation will be switched on automatically. If the soft version of the module support operation of the external control unit of the parktronic and it is connected to the module then in the data burst will be operational data received from external control unit. Our module also operate the sound of the parktronic like on the original PDC. Circuit of the switching-in of our module with external parktronic is shown on the pic 4. PTS400M6 and its pins shown on the pic 2. Our module can be accomplished with cable and plug for connection to the plug X1 of the parktronic.

Module has also output "ACC Out" for the controlling of the external relay. Output is activated when key switched to the position ON.

3. Connection

Module has to be connected into CAN bus of the car directly at the connector 3 of the head unit. If rear camera is present module connected to the video gap (between the camera and the head unit).

Circuit coupling depends on the car modification. On the pic 4 you'll see the most typical connection. Numbering of pin X and Y depends on car complication. Possible combinations you can find on the table 4.



Pic. 1 Design and pins of the module

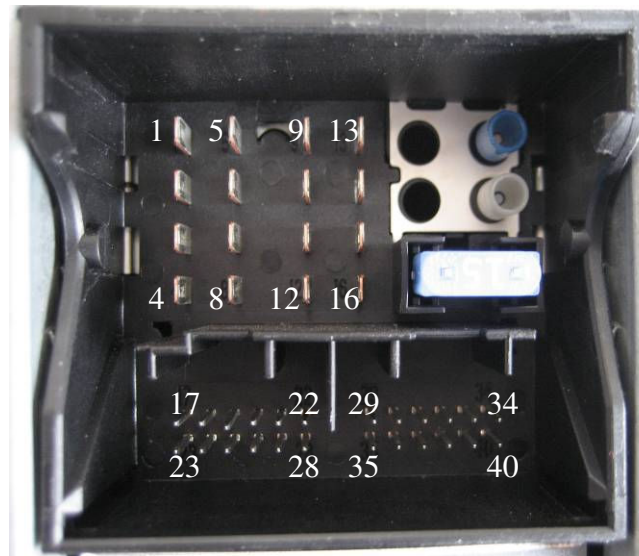
For correct functioning with the head unit of the car you need to code head unit with the following options like it is shown in the table 4.

Table 2. Required options for the correct operation of head unit

Option PDC	Option for RFK
508	3AG



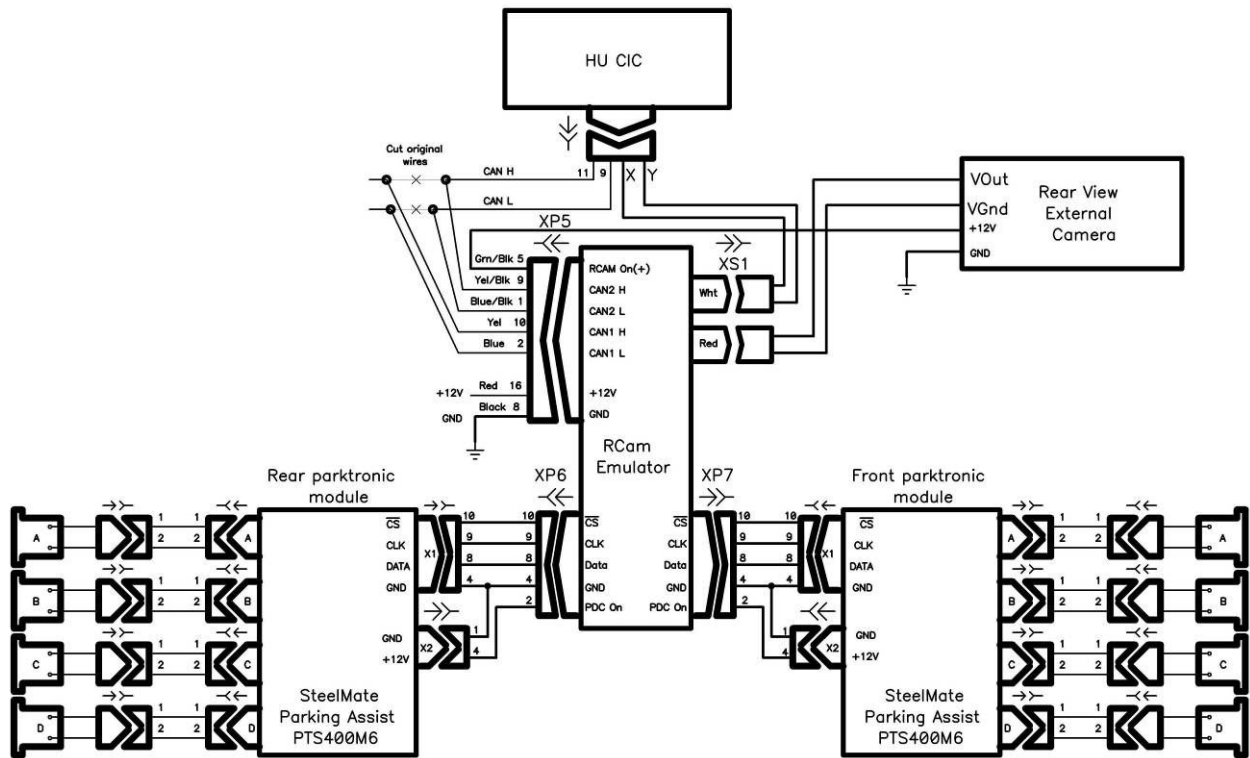
Pic 2. Design of external control unit PTS400M6 and pins



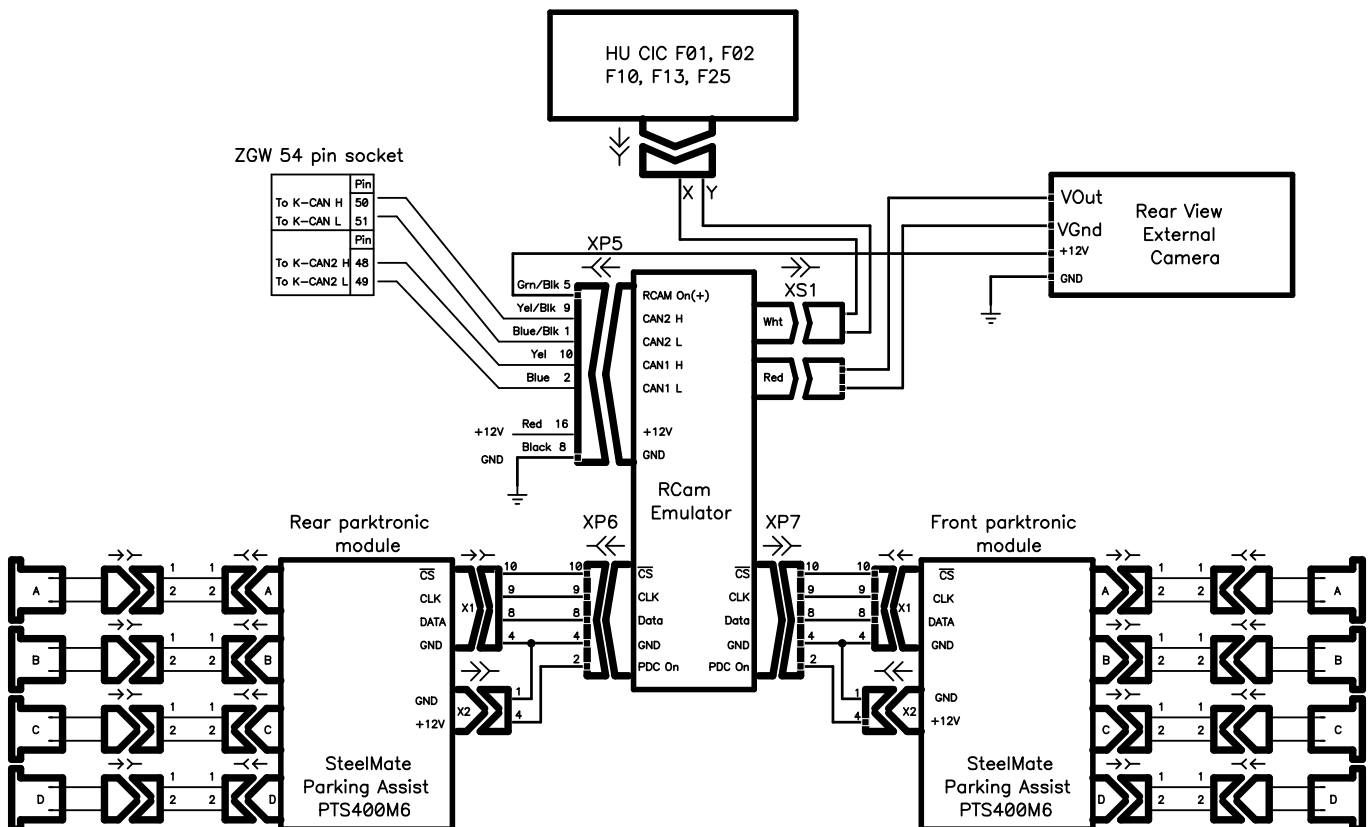
Pic 3. Pin of the connecting plug for head unit

Table 3

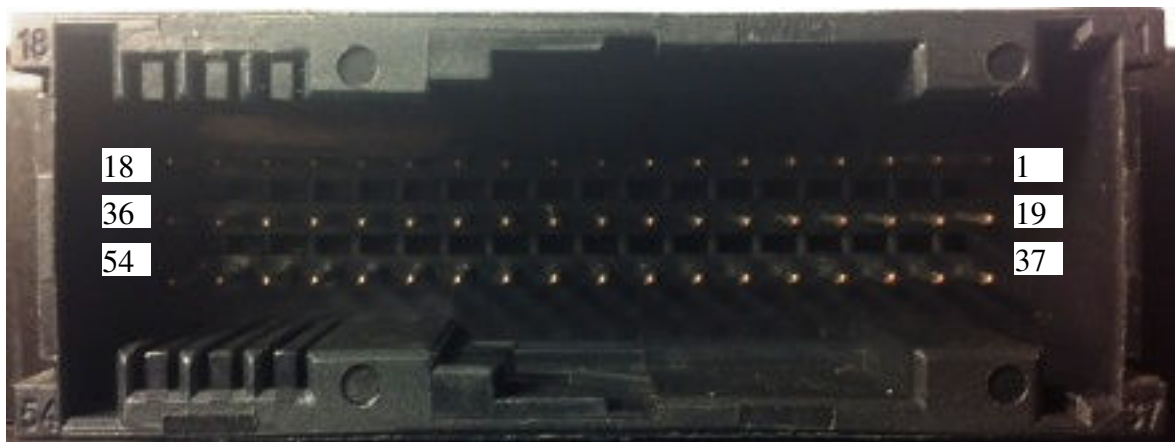
	VideoIn(X)	VideoGround(Y)
Variant 1	18	28
Variant 2	19	26
Variant 3	21	24
NBT	21	24



Pic 4a. Typical connecting diagrams of the module with CIC F30, NBT



Pic 4b. Typical connecting diagrams of the module with HU CIC F01, F02, F10, F13, F25.



Pic 5. ZGW design and pins.

Table 4. ZGW pins.

Pin#	Name	Color
50	K-CAN H	Orange/Green
51	K-CAN L	Green
48	K-CAN2 H	Yellow/Red
49	K-CAN2 L	Yellow/Brown
39	+12V	Red/Blue
19	GND	Brown/Black