

BMW rear view cam emulator for CIC HeadUnit SW Ver 1.07.X

Function.

This module has been designed for installation into BMW vehicles with the HU CIC head unit to emulate the operation of TRSVC unit. If there is no PDC unit installed, this module emulates its operation as well.

Description.

The external appearance of the module and the pinout scheme of its connecting slot have been shown at Picture 1.

This module analyzes packets from the vehicle's data line and, in case the vehicle has no PDC unit installed, should it finds that the rear gear is engaged, or the onboard button to switch on the parktronic of the IHKA air control is pressed, or otherwise the PDC unit is turned into an active state, the module initiates the switching of the head unit into the mode, displaying the signal from the rear view cam output (**hereinafter referred to as the RVC**), and also activates the "RCam ON" quantized output of OK type. In case there is no PDC unit installed, when the reverse gear of the transmission is changed into something different, or when onboard button to switch on the parktronic is pressed, or otherwise when the PDC unit becomes inactive, the module initiates the switching of the head unit into the original display mode and also turns the "RCam ON" quantized output of OK type into a passive state.

This module also has a function for the cyclic activation of the RVC image at the head unit display with the help of the multifunctional “Star” button at the right section of the steering wheel.

When the button is pressed for more than 1 second, the module initiates the switching of the head unit into the mode, displaying the signal from the RVC output.

If the button has been pressed for more than 1 second once again, and the **SW7** jumper has not been installed, there will be the switching over to the onboard computer (**hereinafter referred to as the OC**). If the **SW7** jumper has been installed, the “FCam On” output of “OK” type will be activated, and the head unit will remain in external video signal display mode. Using the “FCam On” output you can control the external relay and commutate signals from the RVC and other sources (for instance, the front view camera – **hereinafter referred to as the FVC**). If the button has been pressed for more than 1 second once again, there will be the switching over to the onboard computer.

The module contains eight Jumper-type switches to turn on/off the additional options. Functions of these switches are specified in Table 1. Recommended values of the switches for different initial and final configurations are specified in Table 2 .

Table 1

	SW0	SW1*	SW2	SW3	SW4	SW5	SW6	SW7
Closed position	Video in motion is on	Activation of the navigation is on	Old model parktronic exchange protocol transformation (E90**)	New model parktronic emulation is on (E70, E84)	Old model parktronic emulation is on (E60, E90)	RVC emulation is on (E70, E71, E84, E90**)	Special RVC control mode is on E60)	FCam On output control (FVC) is on
Open position	Video in motion is off	Activation of the navigation is off	Old model parktronic exchange protocol transformation is off	New model parktronic emulation is off	Old model parktronic emulation is off	RVC emulation is off	Special RVC control mode is off	FCam On output control (FVC) is off

* - for versions with even minor numbers: 1.07.2, 1.07.4 and etc. For other versions the switcher is ignored

** - for CIC E90 encoded for operation with the rear view camera

Note: While installing options with the help of jumpers, to ensure proper operation of the module with the head unit, you should install one of two jumpers SW2 or SW3, and one of two jumpers SW4 or SW5.

Table 2

Initial -> Final Configuration	SW0	SW1	SW2	SW3	SW4	SW5	SW6	SW7
E70 -> E70 + PDC	X	X	-	+	-	+	-	-
E70 -> E70 + PDC + RFK	X	X	-	+	-	+	-	X
E70 + PDC -> E70 + PDC + RFK	X	X	-	+	-	+	-	X
E90 -> E90 + PDC	X	X	-	-	+	+	-	-
E90 -> E90 + PDC + RFK	X	X	-	+	-	+	-	X
E90 + PDC -> E90 + PDC + RFK	X	X	+	-	-	+	-	X
E60 -> E60 + PDC	X	X	-	-	+	+	-	-
E60 -> E60 + PDC + RFK	X	X	-	-	+	-	+	X
E60 + PDC -> E60 + PDC + RFK	X	X	-	-	+	-	+	X

“X” – can be any, “-” – open position, “+” – closed position.

The module may be produced with a version of the micro-program, which includes the functions of operation with the external unit of PTS400M6 type parktronic, manufactured by SteelMate. The support of this functional is indicated at the module’s label. In case the vehicle has no PDC unit installed, its emulation is switched on automatically. If at that the version of the module’s micro-program supports the operation with the external unit of the parktronic, and the latter has been connected to the module, the packets of emulation will contain actual data,

received from the external unit. The module also controls the volume of sound during the parking process, just like the original PDC unit does. The scheme of connection of the module with the external parktronic unit has been shown at Picture 4. The external appearance of the PTS400M6 parktronic unit and the pinout scheme of its connecting slots have been shown at Picture 2. The module may also have a cable enclosed, which includes an installed socket for connection to plug X1 of the parktronic.

The module has the “ACC Out” output of “OK” type to control the external relay. This output is activated when the key is found in the ignition lock.

When the option of the special RVC control mode is being switched on for E60 vehicles (these vehicles have no RVC installed by the manufacturing plant), the switching sequence is shown in Table 3.

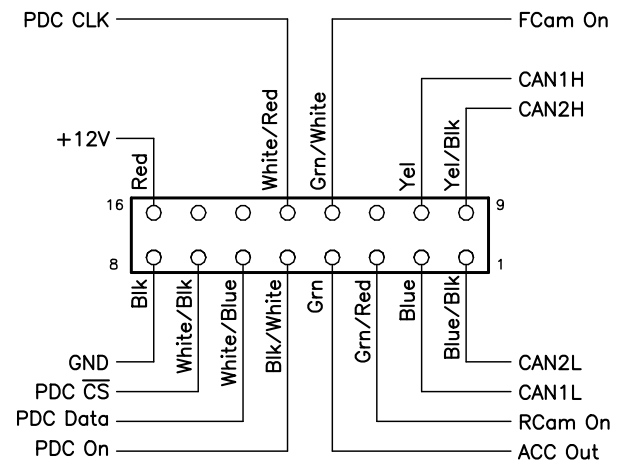
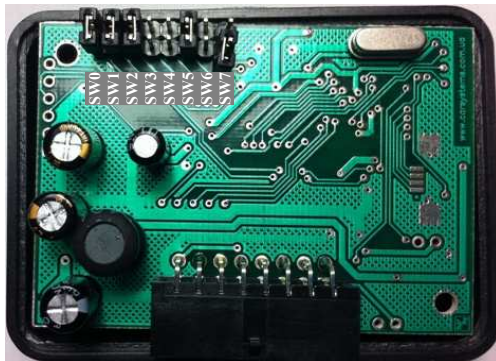
Table 3. Switching sequence under the special control mode.

	Triggering event	Performance with the manufacturer's PDC unit installed	Performance with the manufacturer's PDC unit not installed
1	Reverse gear is switched on	Activation of the image from RVC, from PDC – sound only	Activation of the image from RVC, emulation PDC sound only
2	Any other gear is switched on	Deactivation of the image from RVC, activation of the image from PDC or OC	Deactivation of the image from RVC, PDC not active, the display shows the OC image
3	Prolonged pressing of a wheel's button	The PDC's state is not changed, and each time the button is pressed, the image is switched over to different sources: (PDC or OC) -> (RVC) -> (FVC if SW6 is installed) -> (PDC or OC) -> and so on	The PDC's state is not changed, and each time the button is pressed, the image is switched over to different sources: (PDC or OC) -> (RVC) -> (FVC if SW6 is installed) -> (PDC or OC) -> and so on
4	Pressing of the button to switch on the PDC unit of IHKA	Deactivation of the image from RVC, activation of the image from PDC or OC	Each time the button is pressed, the sources are changed in the following way: 1 PDC 2 RVC, PDC sound only 3 OC

Connection.

The module is connected to the opening of the CAN data bus-line of the vehicle right near the slot (Picture 3) of the head unit, and also controls external relays, commutating video signals and power of external devices.

The scheme of module's connection depends on the configuration of the vehicle. Picture 4 shows the standard connection scheme. Numeration of **X** and **Y** pins depends on the configuration of the vehicle. Possible combinations are shown in Table 4.



Picture 3.

