

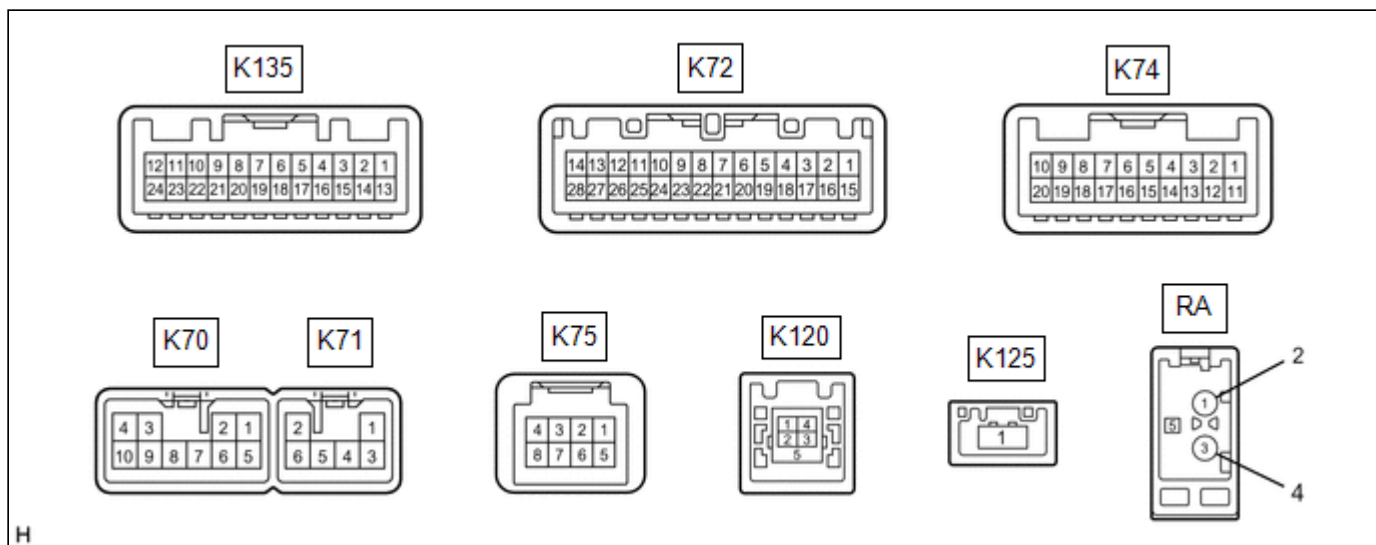
Last Modified: 05-19-2020	6.10:8.0.50	Doc ID: RM100000000FVF7
Model Year Start: 2016	Model: IS200T	Prod Date Range: [06/2014 - 10/2016]
Title: AUDIO / VIDEO: AUDIO AND VISUAL SYSTEM: TERMINALS OF ECU; 2015 - 2016 MY IS200T IS250 IS300 IS350 [06/2014 - 10/2016]		

TERMINALS OF ECU

HINT:

Check from the rear of the connector while it is connected to the components.

RADIO RECEIVER ASSEMBLY



TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFICATION
K135-3 (CNH1)	V	Local bus communication signal	-	-
K135-4 (CNL1)	P	Local bus communication signal	-	-
K135-18 (TX2+)	B	AVC-LAN communication signal	-	-
K135-19 (TX2-)	W	AVC-LAN communication signal	-	-
K72-1 (IG) - K70-7 (GND1)	P - W-B	Power source (IG)	Engine switch off	Below 1 V
			Engine switch on (IG)	11 to 14 V
K72-3 (ADIM) - K70-7 (GND1)	LG - W-B	Illumination (auto dimmer) signal	Engine switch on (IG) Automatic light control sensor covered by hand, and light control switch in tail or head position	9 V or higher

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFICATION
			Engine switch on (IG) Automatic light control sensor not covered by hand, and light control switch in tail or head position	Below 1 V
K72-4 (MACC) - K70-7 (GND1)*1	R - W-B	Microphone power supply	Engine switch off	Below 1 V
			Engine switch on (ACC)	4 to 6 V
K72-5 (MIN+) - K70-7 (GND1)	W - W-B	Microphone voice signal	See "Check Microphone" in Operation Check Click here INFO	-
K72-6 (SNS2) - K70-7 (GND1)	L - W-B	Microphone connection detection signal	Always	Below 1 V
K72-7 (TX1+)	L	AVC-LAN communication signal	-	-
K72-8 (TX1-)	G	AVC-LAN communication signal	-	-
K72-9 (CANH)	R	CAN communication signal	-	-
K72-10 (CANL)	B	CAN communication signal	-	-
K72-11 (AGND) - Body ground	Shield - Body ground	Shield ground	Always	Below 1 V
K72-12 (SG) - K70-7 (GND1)	Shield - W-B	External device connection detection signal	External device connected	Below 1 V
K72-13 (VV+) - K70-7 (GND1)	P - W-B	Video signal	External device playing (When stereo jack used)	A waveform synchronized with video signals is output
K72-14 (VV-) - K70-7 (GND1)	L - W-B	Video signal	External device playing (When stereo jack used)	A waveform synchronized with video signals is output
K72-15 (PKB) - K70-7 (GND1)	GR - W- B	Parking brake signal	See "Check Vehicle Signal" in Operation Check Click here INFO	-
K72-16 (MUT1) - K70-7 (GND1)	LG - W- B	Mute signal	Engine switch on (ACC) Audio system playing	2.0 V or higher

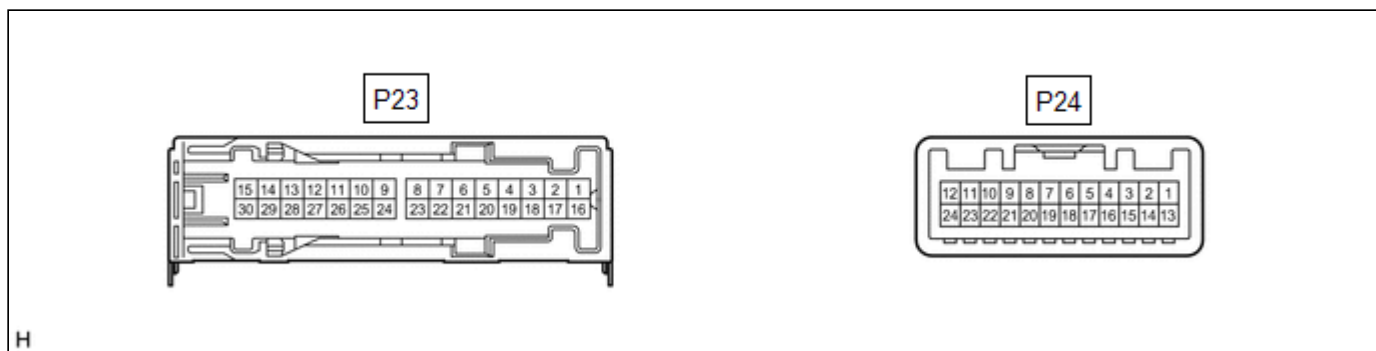
TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFICATION
			Audio system changing modes	Below 1 V
K72-17 (SPD) - K70-7 (GND1)	L - W-B	Vehicle speed signal	See "Check Vehicle Signal" in Operation Check Click here INFO	-
K72-18 (SGND) - Body ground	Shield - Body ground	Shield ground	Always	Below 1 V
K72-19 (MIN-) - K70-7 (GND1)	B - W-B	Microphone voice signal	See "Check Microphone" in Operation Check Click here INFO	-
K72-21 (SW1) - K72-23 (SWG)	L - BR	Steering pad switch signal	No switch pushed	2.97 to 3.56 V
			Seek+ switch pushed	0.27 to 0.35 V
			Seek- switch pushed	0.86 to 1.03 V
			Volume+ switch pushed	1.51 to 1.79 V
			Volume- switch pushed	2.22 to 2.66 V
K72-22 (SW2) - K72-23 (SWG)	P - BR	Steering pad switch signal	No switch pushed	2.97 to 3.56 V
			MODE switch pushed	0.27 to 0.35 V
			On hook switch pushed	0.86 to 1.03 V
			Off hook switch pushed	1.51 to 1.79 V
			Voice switch pushed	2.22 to 2.66 V
K72-23 (SWG) - K70-7 (GND1)	BR - W-B	Steering pad switch ground	Always	Below 1 V
K72-25 (ADPG) - K70-7 (GND1)	P - W-B	External device connection detection signal	External device connected	Below 1 V
			External device not connected	2.1 to 3 V
K72-26 (VAR+) - K72-27 (VA-)	W - R	Sound signal (Right)	External device playing (When stereo jack used)	A waveform synchronized with sound signals is output
K72-27 (VA-) - K70-7 (GND1)	R - W-B	Ground	Always	Below 1 V
K72-28 (VAL+) - K72-27 (VA-)	B - R	Sound signal (Left)	External device playing (When stereo jack used)	A waveform synchronized with sound signals is output
K74-1 (VMTF) - K70-7 (GND1)	W - W-B	Visual mute signal	Engine switch on (ACC) Screen display changes	2 V or higher → Below 1 V → 2 V or higher

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFICATION
K74-11 (TX4+)	G	AVC-LAN communication signal	-	-
K74-12 (TX4-)	V	AVC-LAN communication signal	-	-
K70-1 (FR+) - K70-7 (GND1)	W - W-B	Sound signal (Right)	Audio system playing	A waveform synchronized with sound signals is output
K70-2 (FL+) - K70-7 (GND1)	B - W-B	Sound signal (Left)	Audio system playing	A waveform synchronized with sound signals is output
K70-3 (ACC1) - K70-7 (GND1)	BE - W-B	Power source (ACC)	Engine switch off	Below 1 V
			Engine switch on (ACC)	11 to 14 V
K70-4 (+B1) - K70-7 (GND1)	V - W-B	Power source (+B)	Always	11 to 14 V
K70-5 (FR-) - K70-7 (GND1)	G - W-B	Sound signal (Right)	Audio system playing	A waveform synchronized with sound signals is output
K70-6 (FL-) - K70-7 (GND1)	R - W-B	Sound signal (Left)	Audio system playing	A waveform synchronized with sound signals is output
K70-7 (GND1) - Body ground	W-B - Body ground	Ground	Always	Below 1 V
K70-10 (ILL+) - K70- 7 (GND1)	G - W-B	Illumination signal	Light control switch off	Below 1 V
			Light control switch in tail or head position	11 to 14 V
K71-2 (RL+) - K70-7 (GND1)	W - W-B	Voice signal	Voice guidance sounding	A waveform synchronized with voice signals is output
K71-5 (ILL-) - K70-7 (GND1)	BE - W-B	Illumination signal	Light control switch off	Below 1 V
			Light control switch in tail or head position	Pulse generation
K71-6 (RL-) - K70-7 (GND1)	B - W-B	Voice signal	Voice guidance sounding	A waveform synchronized with voice signals is output
K75-3 (ACC2) - K70-7 (GND1)	BE - W-B	Illumination power source (ACC)	Engine switch off	Below 1 V
			Engine switch on (ACC)	11 to 14 V
K75-4 (+B2) - K70-7 (GND1)	G - W-B	Illumination power source (+B)	Always	11 to 14 V

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFICATION
K75-8 (GND2) - Body ground	SB - Body ground	Ground	Always	Below 1 V
K120-1 (USV1)	-	Power source	-	-
K120-2 (US1-)	-	Data signal	-	-
K120-3 (US1+)	-	Data signal	-	-
K120-4 (UGD1)	-	Ground	-	-
K120-5 (USG1)	-	Shield ground	-	-
K125-1 (GVIF)	B	Video signal (Digital)	-	-
RA-5 (ANT+) - K70-7 (GND1)	- - W-B	Power source of antenna	Engine switch on (ACC) Radio switch on and FM or AM selected	11 to 14 V

*1: w/o Manual (SOS) Switch

STEREO COMPONENT AMPLIFIER ASSEMBLY



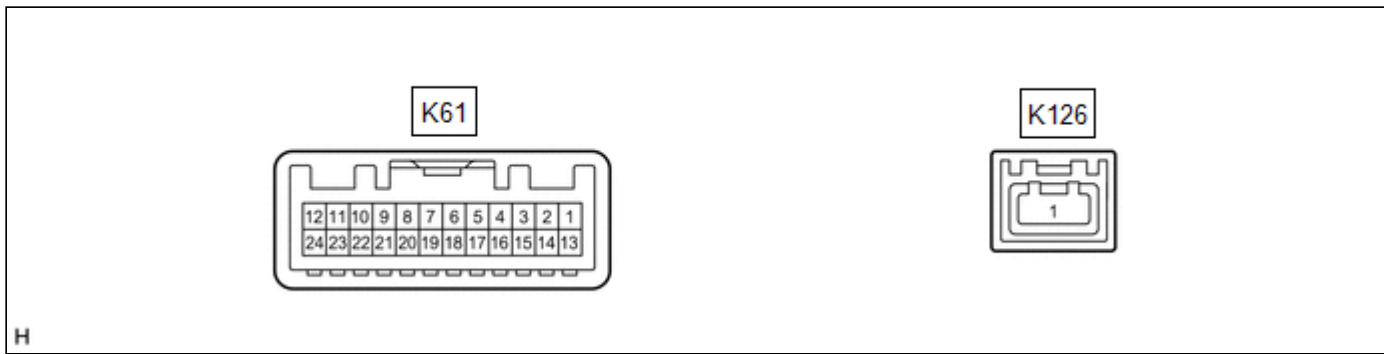
TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFICATION
P23-1 (+B) - P23-3 (GND)	SB - BR	Power source (+B)	Always	11 to 14 V
P23-3 (GND) - Body ground	BR - Body ground	Ground	Always	Below 1 V
P23-4 (WFL+) - P23-3 (GND)	R - BR	Sound signal (Front Left)	Audio system playing	A waveform synchronized with sound signals is output
P23-5 (WFR+) - P23-3 (GND)	L - BR	Sound signal (Front Right)	Audio system playing	A waveform synchronized with sound signals is output

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFICATION
P23-6 (WF1+) - P23-3 (GND)	GR - BR	Sound signal (Woofer)	Audio system playing	A waveform synchronized with sound signals is output
P23-7 (CTR+) - P23-3 (GND)	GR - BR	Sound signal (Front Center)	Audio system playing	A waveform synchronized with sound signals is output
P23-12 (FL+) - P23-3 (GND)	W - BR	Sound signal (Front Left)	Audio system playing	A waveform synchronized with sound signals is output
P23-13 (FR+) - P23-3 (GND)	BE - BR	Sound signal (Front Right)	Audio system playing	A waveform synchronized with sound signals is output
P23-14 (RL+) - P23-3 (GND)	BE - BR	Sound signal (Rear Left)	Audio system playing	A waveform synchronized with sound signals is output
P23-15 (RR+) - P23-3 (GND)	LG - BR	Sound signal (Rear Right)	Audio system playing	A waveform synchronized with sound signals is output
P23-16 (+B2) - P23-3 (GND)	BE - BR	Power source (+B)	Always	11 to 14 V
P23-18 (GND2) - Body ground	BR - Body ground	Ground	Always	Below 1 V
P23-19 (WFL-) - P23-3 (GND)	B - BR	Sound signal (Front Left)	Audio system playing	A waveform synchronized with sound signals is output
P23-20 (WFR-) - P23-3 (GND)	B - BR	Sound signal (Front Right)	Audio system playing	A waveform synchronized with sound signals is output
P23-21 (WF1-) - P23-3 (GND)	L - BR	Sound signal (Woofer)	Audio system playing	A waveform synchronized with sound signals is output
P23-22 (CTR-) - P23-3 (GND)	V - BR	Sound signal (Front Center)	Audio system playing	A waveform synchronized with sound signals is output
P23-27 (FL-) - P23-3 (GND)	P - BR	Sound signal (Front Left)	Audio system playing	A waveform synchronized with sound signals is output
P23-28 (FR-) - P23-3 (GND)	P - BR	Sound signal (Front Right)	Audio system playing	A waveform synchronized with sound signals is output
P23-29 (RL-) - P23-3 (GND)	P - BR	Sound signal (Rear Left)	Audio system playing	A waveform synchronized with sound signals is output
P23-30 (RR-) - P23-3 (GND)	W - BR	Sound signal (Rear Right)	Audio system playing	A waveform synchronized with sound signals is output
P24-1 (MUTE) - P23-3 (GND)	LG - BR	Mute signal	Engine switch on (ACC) Audio system playing	2.0 V or higher
			Audio system changing modes	Below 1 V
P24-2 (L-) - P23-3 (GND)	R - BR	Sound signal (Left)	Audio system playing	A waveform synchronized with sound signals is output

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFICATION
P24-3 (L+) - P23-3 (GND)	B - BR	Sound signal (Left)	Audio system playing	A waveform synchronized with sound signals is output
P24-4 (R-) - P23-3 (GND)	G - BR	Sound signal (Right)	Audio system playing	A waveform synchronized with sound signals is output
P24-5 (R+) - P23-3 (GND)	W - BR	Sound signal (Right)	Audio system playing	A waveform synchronized with sound signals is output
P24-6 (SLD) - Body ground	Shield - Body ground	Shield ground	Always	Below 1 V
P24-7 (TX-)	G	AVC-LAN communication signal	-	-
P24-8 (TX+)	L	AVC-LAN communication signal	-	-
P24-11 (SPD) - P23- 3 (GND)	L - BR	Vehicle speed signal	Engine switch on (IG) Wheel being rotated	Pulse generation
P24-12 (ACC) - P23- 3 (GND)	BE - BR	Power source (ACC)	Engine switch off	Below 1 V
			Engine switch on (ACC)	11 to 14 V
P24-14 (II1-) - P23- 3 (GND)	B - BR	Voice signal	Voice guidance sounding	A waveform synchronized with voice signals is output
P24-15 (II1+) - P23-3 (GND)	W - BR	Voice signal	Voice guidance sounding	A waveform synchronized with voice signals is output
P24-18 (SLD1) - Body ground	Shield - Body ground	Shield ground	Always	Below 1 V
P24-24 (TMUT) - Body ground*1	B - Body ground	Mute signal	Engine switch on (ACC) Audio system playing	2.0 V or higher
			Emergency call mode	Below 1 V

*1: w/ Manual (SOS) Switch

MULTI-DISPLAY ASSEMBLY



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TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFICATION
K61-2 (ILL) - K61-13 (GND1)	G - W-B	Illumination signal	Light control switch off	Below 1 V
			Light control switch in tail or head position	11 to 14 V
K61-3 (REV) - K61-13 (GND1)	R - W-B	Reverse signal	Engine switch on (IG) Shift lever in R	11 to 14 V
K61-7 (TX+)	G	AVC-LAN communication signal	-	-
K61-8 (V+) - K61-13 (GND1)	R - W-B	Video signal	Engine switch on (IG) Shift lever in R Camera lens not covered, displaying an image	Pulse generation (Refer to waveform 1)
			Engine switch on (IG) Shift lever in R Camera lens covered, blacking out screen	Pulse generation (Refer to waveform 2)
K61-9 (V-) - K61-13 (GND1)	W - W-B	Ground	Always	Below 1 V
K61-10 (CA+) - K61- 13 (GND1)	B - W-B	Television camera power supply	Engine switch on (ACC)	5.5 to 7.05 V
K61-11 (VMTI) - K61- 13 (GND1)	W - W-B	Visual mute signal	Engine switch on (ACC) Screen display changes	2 V or higher → Below 1 V → 2 V or higher
K61-12 (B) - K61-13 (GND1)	V - W-B	Power source (+B)	Always	11 to 14 V
K61-13 (GND1) - Body ground	W-B - Body ground	Ground	Always	Below 1 V
K61-19 (TX-)	V	AVC-LAN communication signal	-	-
K61-21 (CGND) - Body ground	Shield - Body ground	Shield ground	Always	Below 1 V
K61-24 (ACC) - K61- 13 (GND1)	BE - W-B	Power source (ACC)	Engine switch off	Below 1 V
			Engine switch on (ACC)	11 to 14 V

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFICATION
K126-1 (GVIF)	B	Video signal (Digital)	-	-

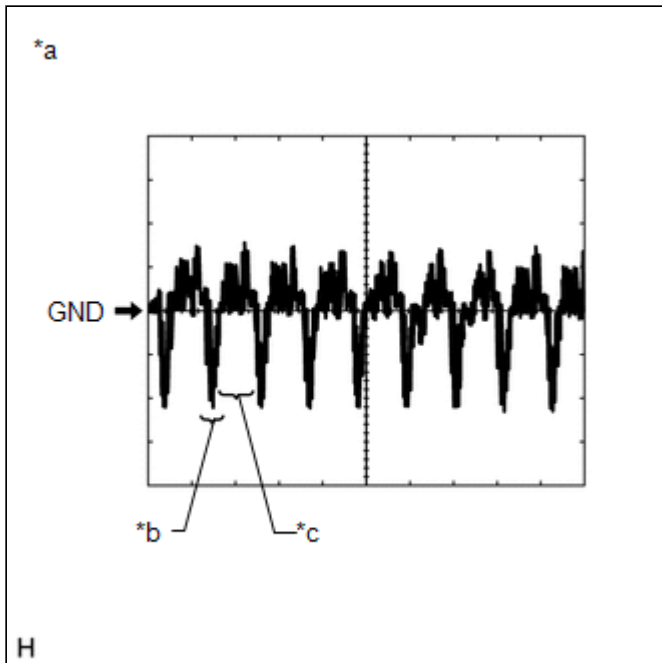
(a) Reference (Oscilloscope waveform):

(1) Waveform 1 (camera lens not covered, displaying an image)

ITEM	CONTENT
Measurement terminal	K61-8 (V+) - K61-13 (GND1)
Measurement setting	200 mV/DIV., 50 μ sec./DIV.
Condition	Engine switch on (IG), shift lever in R

HINT:

The video waveform changes according to the image sent by the television camera assembly.



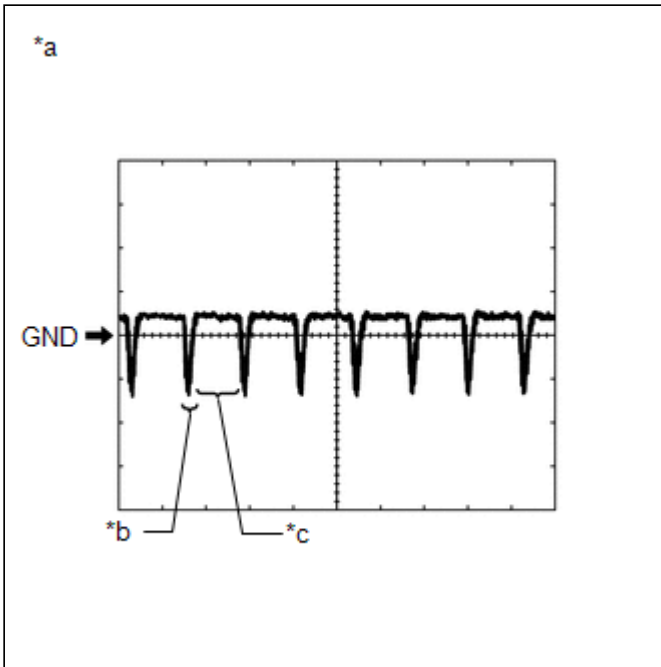
*a	Waveform 1 (camera lens not covered, displaying an image)
*b	Synchronization Signal
*c	Video Waveform

(2) Waveform 2 (camera lens covered, blacking out the screen)

ITEM	CONTENT
Measurement terminal	K61-8 (V+) - K61-13 (GND1)
Measurement setting	200 mV/DIV., 50 μ sec./DIV.
Condition	Engine switch on (IG), shift lever in R

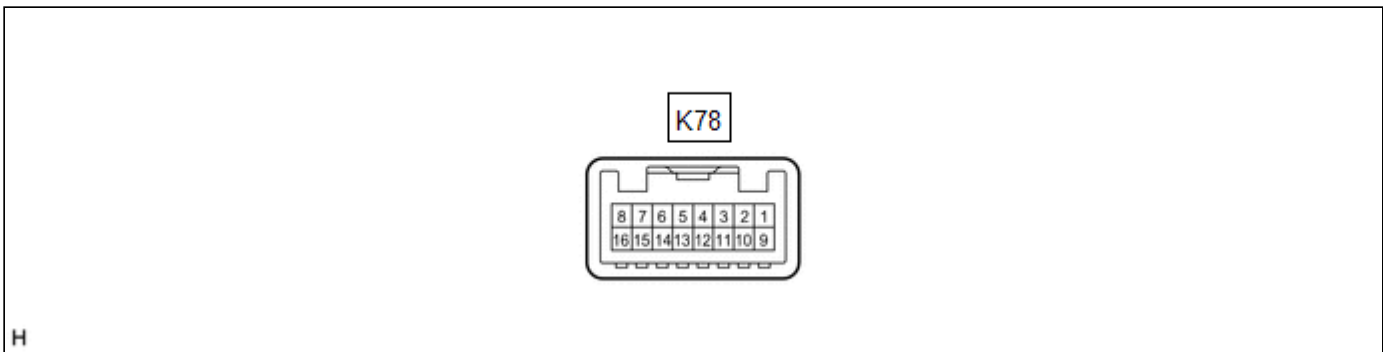
HINT:

The video waveform changes according to the image sent by the rear television camera assembly.



*a	Waveform 2 (camera lens covered, blacking out the screen)
*b	Synchronization Signal
*c	Video Waveform

REMOTE OPERATION BOARD



TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFICATION
K78-1 (ILL+) - K78-4 (GND)	G - W-B	Illumination signal	Light control switch off	Below 1 V
			Light control switch in tail or head position	11 to 14 V
K78-4 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 V
K78-8 (ILL-) - K78-4 (GND)	BE - W-B	Illumination signal	Light control switch off	Below 1 V
			Light control switch in tail or head position	Pulse generation
K78-10 (TX+)	B	AVC-LAN communication signal	-	-

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFICATION
K78-11 (TX-)	W	AVC-LAN communication signal	-	-
K78-14 (ACC) - K78-4 (GND)	BE - W-B	Power source (ACC)	Engine switch off	Below 1 V
			Engine switch on (ACC)	11 to 14 V

DCM (TELEMATICS TRANSCEIVER) (w/ Manual (SOS) Switch)

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