SERVICE MANUAL

TIGER-S/P

CUPID
(CXC-2000PVR)

HUMAX

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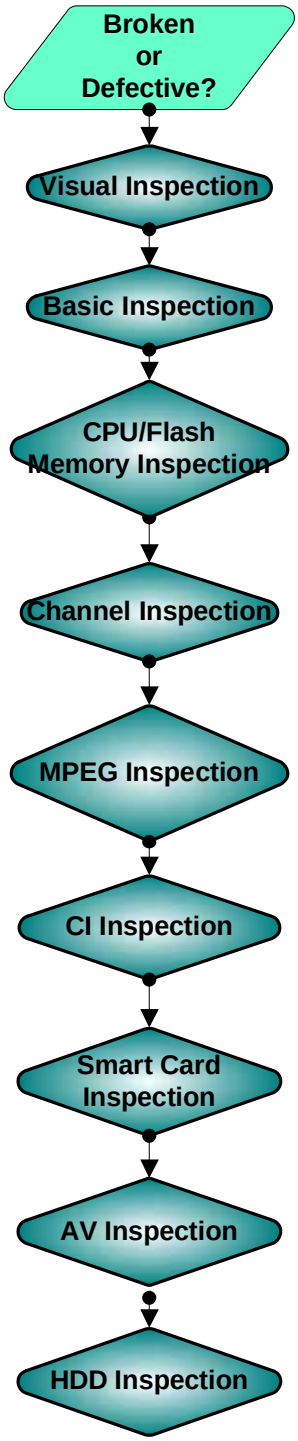
Troubleshooting Guideline

I. The repair of broken and defective sets should follow the recommended flow described below:



Check assembly of the set, condition of connectors, condition of the PCB, for poor soldering or short circuiting of parts, and for visual defects, and take appropriate measures.

If the set does not work after power-on, inspect the basic operation of the SMPS and the Front I/F system.

Check if the STi5518 CPU and the flash memory are working properly. To this end, check the items essential to the basic operation of the set, such as memory access.

Check the front-end section that outputs the 22 kHz tone signal and the DC power source that receives, tunes, and locks the RF signals from the antenna LNB and operates the LNB.

If channel searching fails even after locking [the signal level and quality are normal], check for any problems with the MPEG memory and the ts line.

If FTA channels are working normally, but MPEG play does not work from a scrambled channel, check for problems with CAM detection.

If MPEG play is normal in the case of FTA channels, but if MPEG play does not work for a scrambled channel on a CAS model (IRCI-8400P, NACI-8700P), check for problems with Smart Card detection.

Check the processes from MPEG decoding to A/V output, and check the functions at the output jacks (CINCH, SCART, RF Modulator, and SPDIF) on the back panel.

If the HDD functions (tsr, recording) do not work, check for problems with the i/f between the HDD power and the CPU.

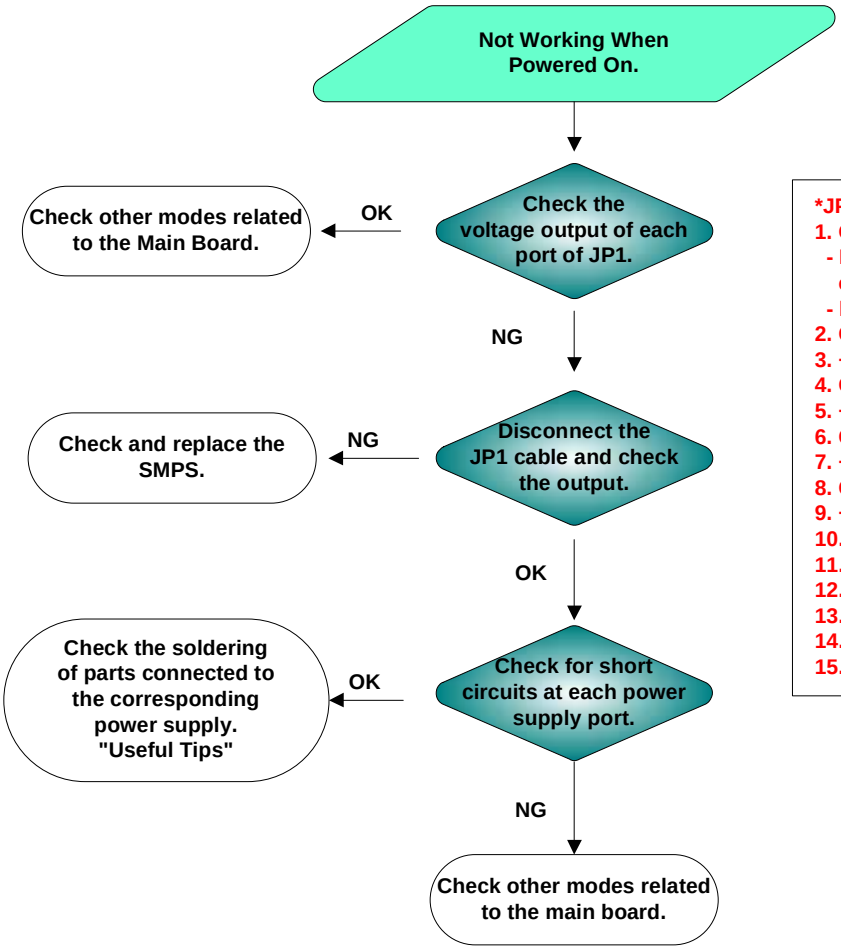
II. The illustrations and waveforms contained in this manual may differ depending on the system condition and the signal being received. Use them only as a reference material.
What is important is to identify the location of the problem by tracing the flow of related signals.
It is recommended that you refer to the following example waveforms as reference material on related signal patterns.

Basic Inspection 1

Not Working When Powered On.

Preliminary Checkpoints

- ❖ Check the condition of the SMPS input power cable connection.
- ❖ Check the condition of the fuse protecting the Transformer.
- ❖ Check for short circuits between each power terminal and the ground.



*JP 1
1. ON/OFF
 - HDD Power[+5v.+12v] control signal
 - high[operation], low[standby]
2. GND
3. +30V(+/- 2.0v)
4. GND
5. +24V(+/- 2.0v)
6. GND
7. +17V(+/- 1.0v)
8. GND
9. +12V(+/- 0.8v)
10. GND
11. +7.5V(+/- 0.5)
12. GND
13. +5V(+/- 0.25v)
14. +3.3V(+/-0.16v)
15. +3.3V(+/-0.16v)

❖ **Useful Tips**

*** Power Supply Points***

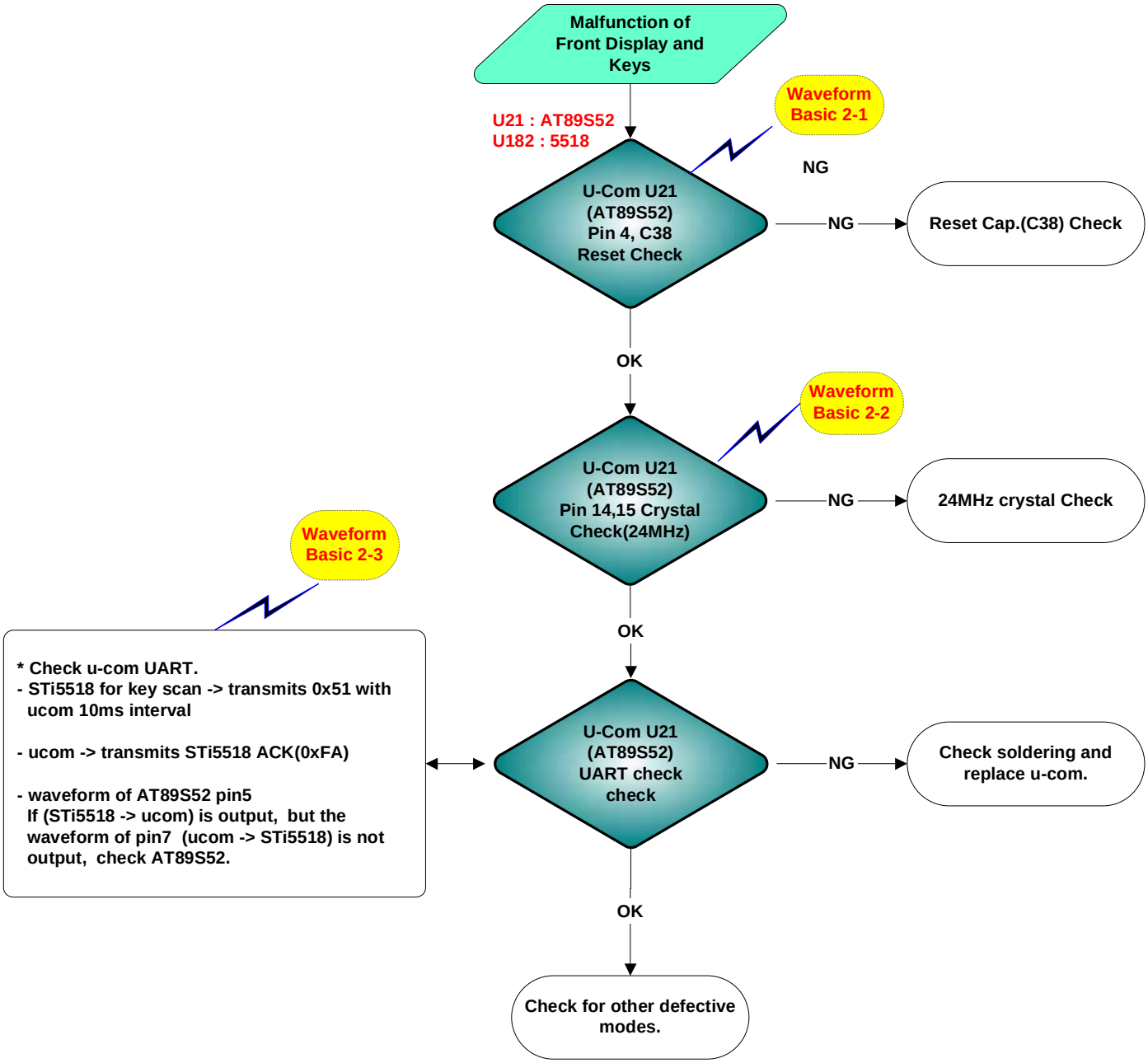
1. +30 V: DUMMY
2. +24 V: DUMMY
3. +17 V: DUMMY
4. +12 V: U430 (6412)
5. + 7V5: use for U505 (TUNER and RF modulator power)
6. +5V : Use for U21 (AT89S52), Q260,Q261(Use as pull-up resistor for IIC transition), JP350 (Use for ROM connector power), U360 (24LC64), JP450 (TOTX178A), JP580~1 (Smart card power), U600 (HIN232ECB), U430 (6412)
7. +3V3 : D50(1N5402), U503(TDA10021/B3), U502 (LM1117-1.8), U182 (5518), U300 (KIA7027AF), Q300~301 (tr's collect power for flash reset), U311 (KA5SDKAS01TSN), U330 (INTEL FLASH) U371 (EMI SDRAM), U390 (SMI SDRAM), U517(KIA7029AF)

Basic Inspection 2

Malfunction of Front Display and Keys

Preliminary Checkpoints

❖ Check the cable connection between Front b/d and Main b/d.



❖ Handling the RCU during Operation/Standby

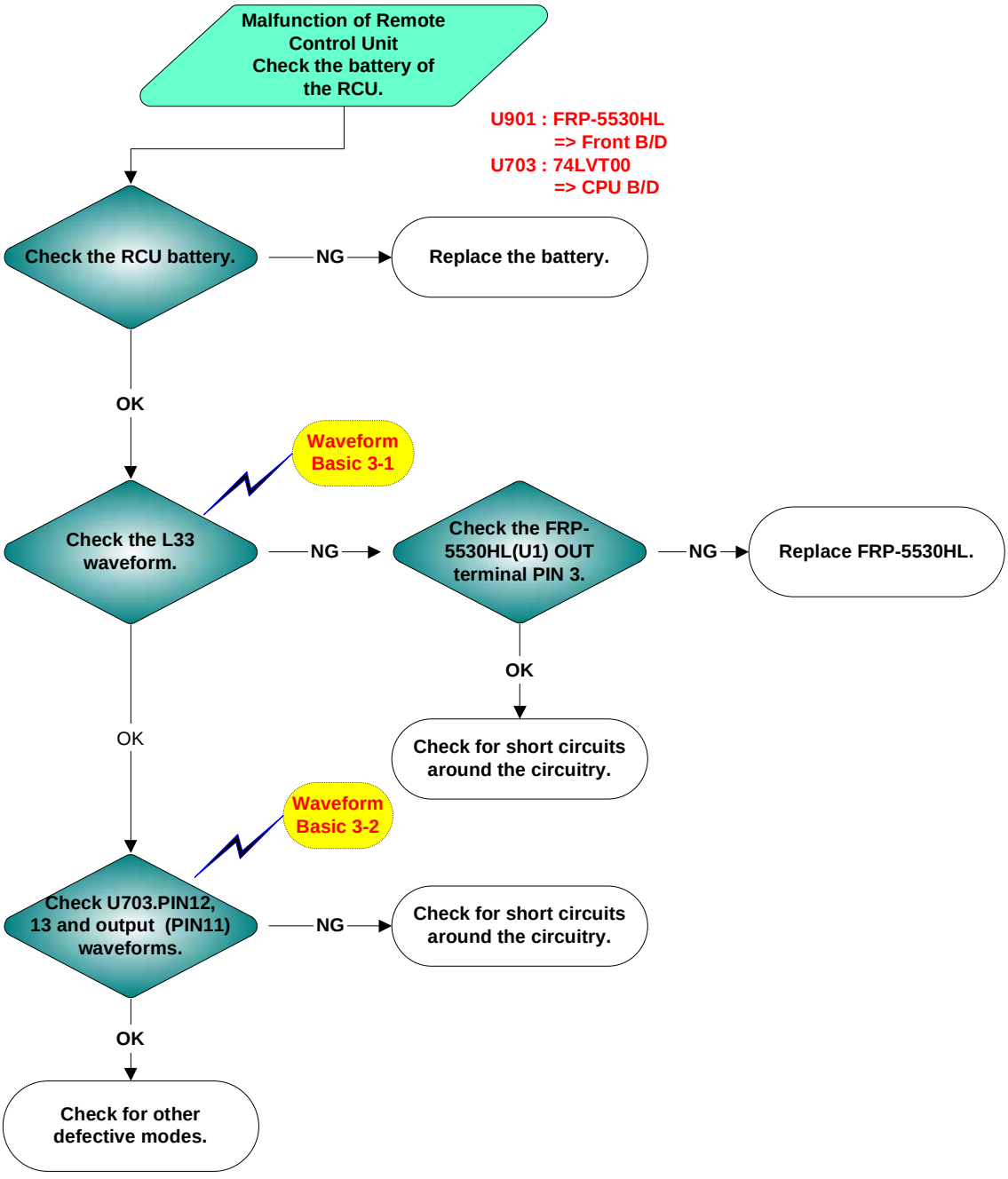
1. Operation mode
   - The output of RCU Sensor FRP-5530HL (U1) is directly connected to STi5518 through Inverter(U23).
   - u-com by 4key input, 3 Led & 7-segment display

2. Standby mode
   - Handles the RCU at Micom (AT89S52), Power down mode for STi5518
   - u-com by 1 standby key input, Red LED & 7-segment display

Malfunction of Remote Control Unit

Preliminary Checkpoints

❖ Check the battery condition when the RCU malfunctions.



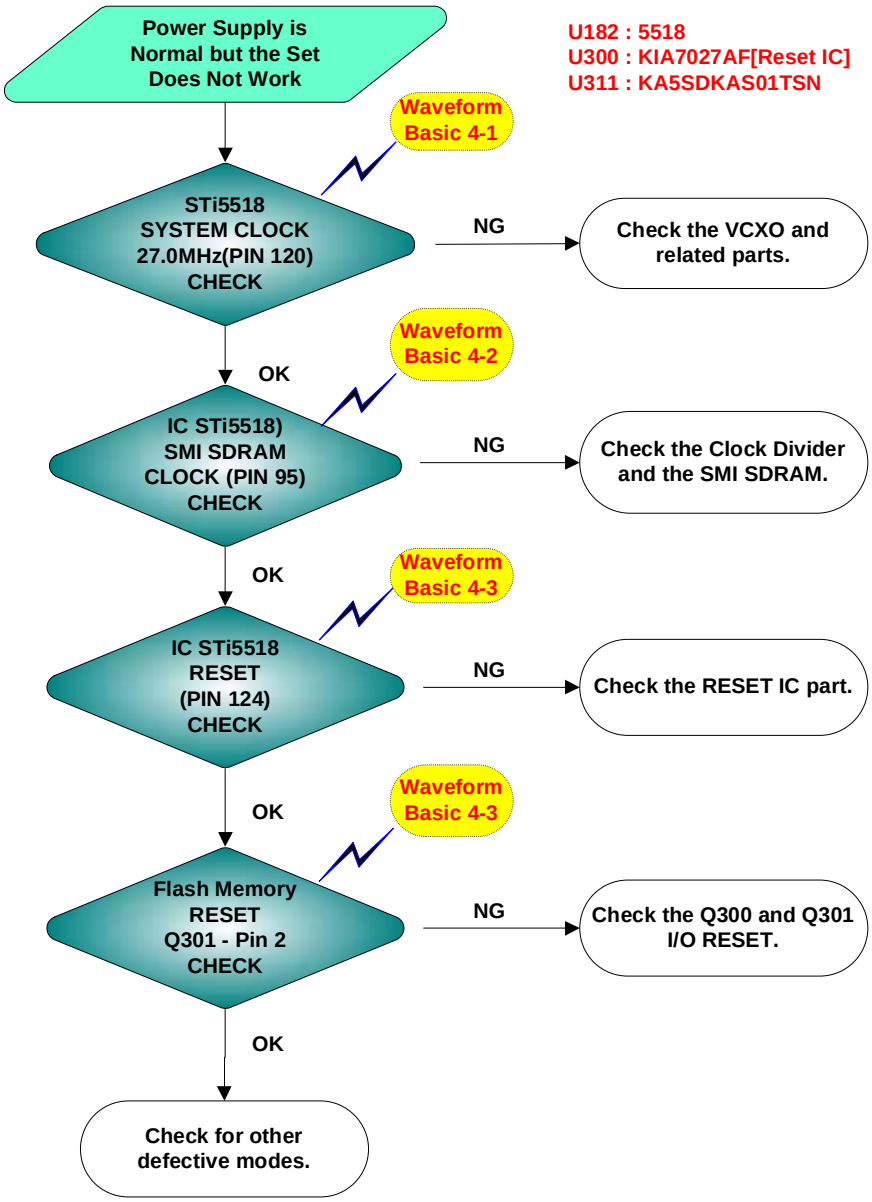
❖ Useful Tips

1. Check the waveform of L33 and if it is abnormal, open L33 and check the waveform of the input terminal of L33. If the waveform is abnormal, check the output waveform of FRP-5530HL[U901.3PIN] of Front b/d. If the waveform is abnormal, replace FRP-5530HL.

Not Working When Powered On

Preliminary Checkpoints

- Check the System Clock (27.0 MHz) and the Reset terminal of STi5518.
- The clocks internal to IC STi5518 basically drive the external 27.0 MHz system clock to multiply or divide to generate various clocks for use.
- The RESET of IC STi5518 is connected to FLASH through GLUE LOGIC.



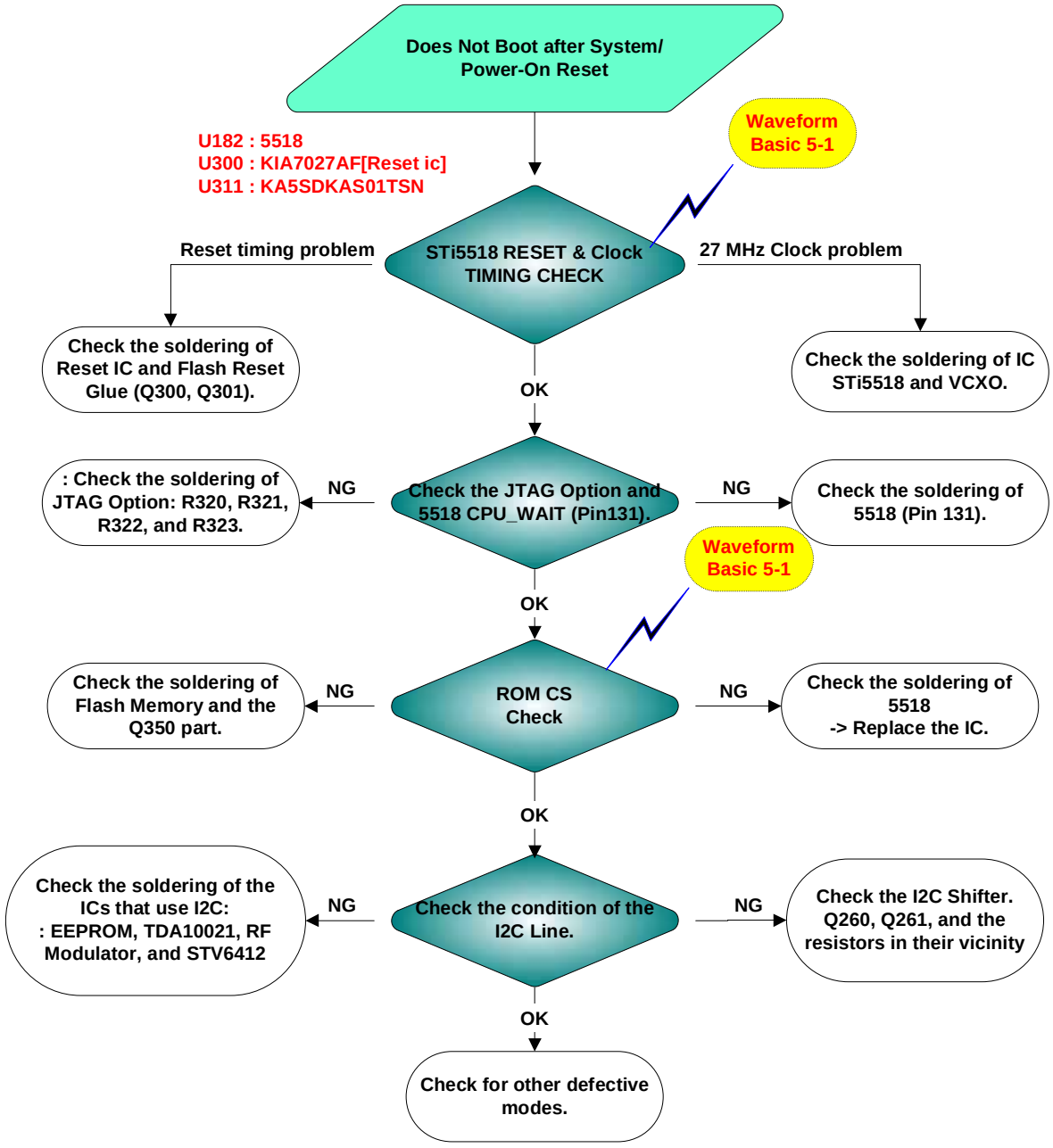
- **Useful Tips**

1. Unstable 27 MHz may be due to a defective VCXO or STi5518 alone. Replace the chip or VCXO.
2. When replacing parts, be careful of static charges from the tip of the solder iron that can easily damage parts. Also, check assembly, soldering, or for incorrect or reverse insertion of parts.

Does Not Boot after Power-On or System Reset

Preliminary Checkpoints

- The system clock 27.0 MHz must be stable during System Reset or the Power On Reset. However, if VCXO is defective, the clock may be unstable until RESET is released.
- To check this item, turn the main power off and back on, and check if the following waveform is maintained.



- Useful Tips

1. The resistors of JTAG Connector, R320, R321, and R322 should be set to Pull-Up, and R323 should be set to Pull-Down. In addition, CPU_WAIT of 5518 must be set to Pull-Down for the system to operate.

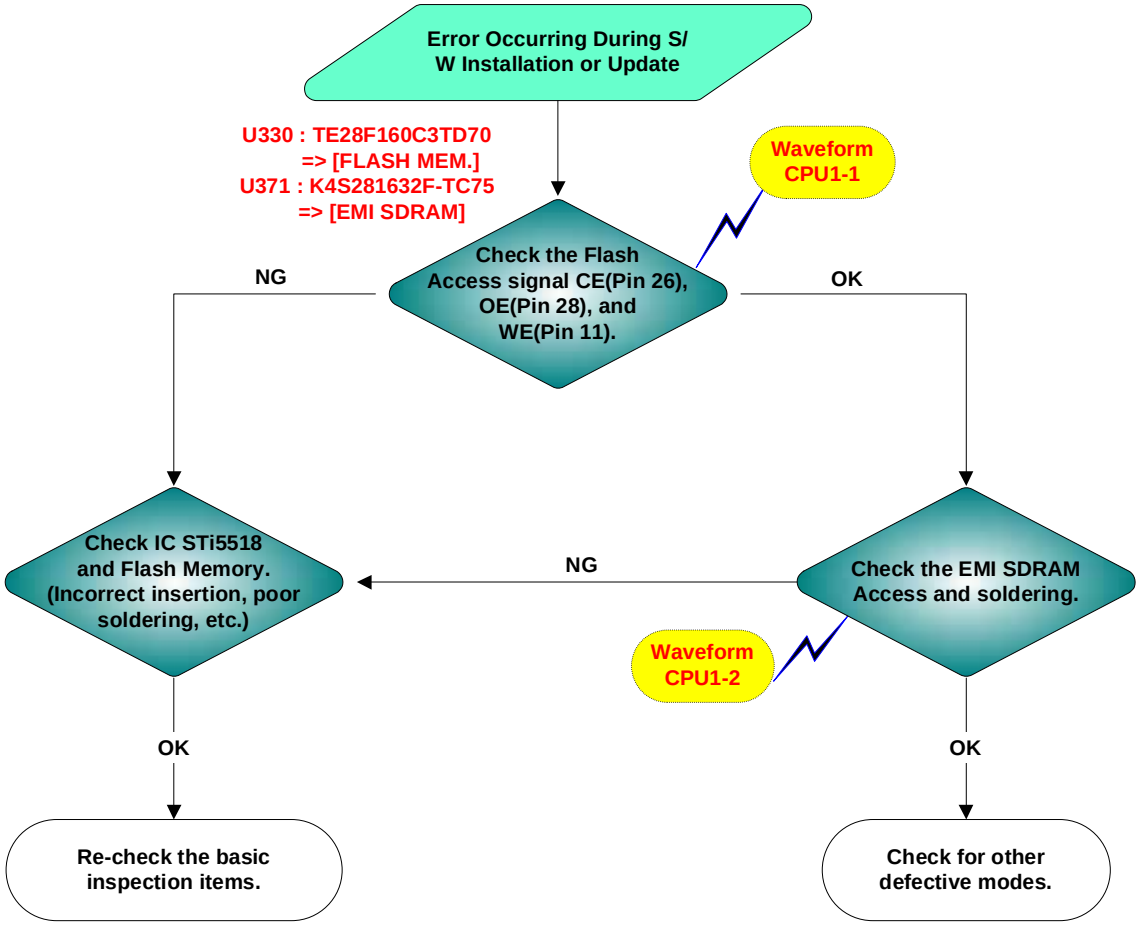
2. When replacing parts, be careful of static charges from the tip of the solder iron that can easily damage parts. Also, check assembly, soldering, or for incorrect or reverse insertion of parts.

CPU/System Memory Inspection

Error Occurs During S/W Installation or Update
System Stops During Initial Booting or Operation

Preliminary Checkpoints

- If the system does not respond even though no problems were found on the basic inspection, you will need to check the flash memory that contains program codes. If the system is working normally, Flash Memory Control signals that look similar to the ones shown below will be repeated.
- The main cause of the problems related to System Memory (i.e. Flash and SDRAM) is the soldering of parts. Therefore, in the event of a problem, first check the soldering and the power supply of IC.



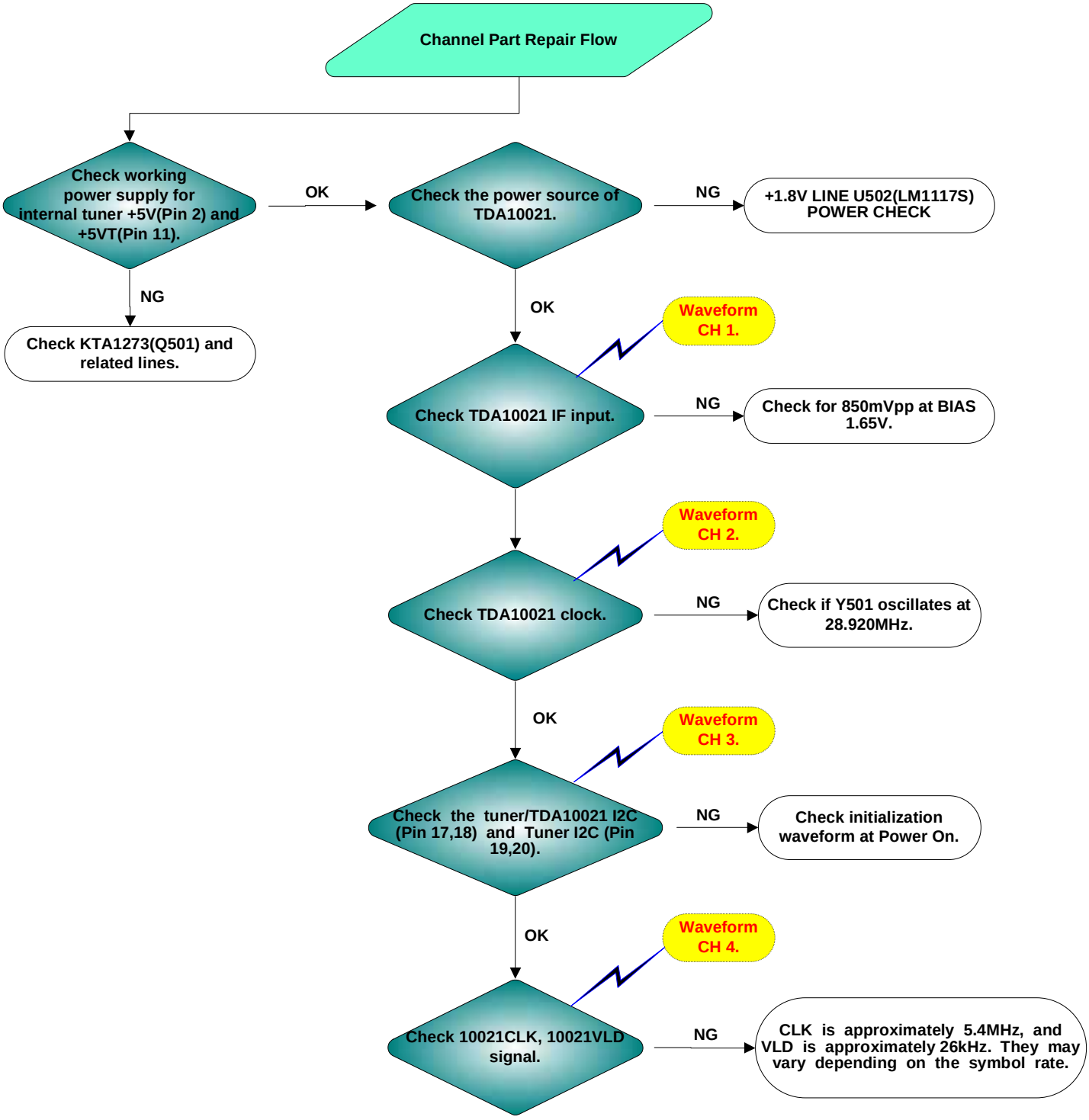
Inspection of Channel Operations

All parts including power source/CPU are working normally, but channels cannot be locked.

a. Channel Part Repair Flow

Preliminary Check Points

> ❖ As channels are controlled with locking associated with the tuner and TDA10021, the repair of channel parts should be performed with inspection of related signals.



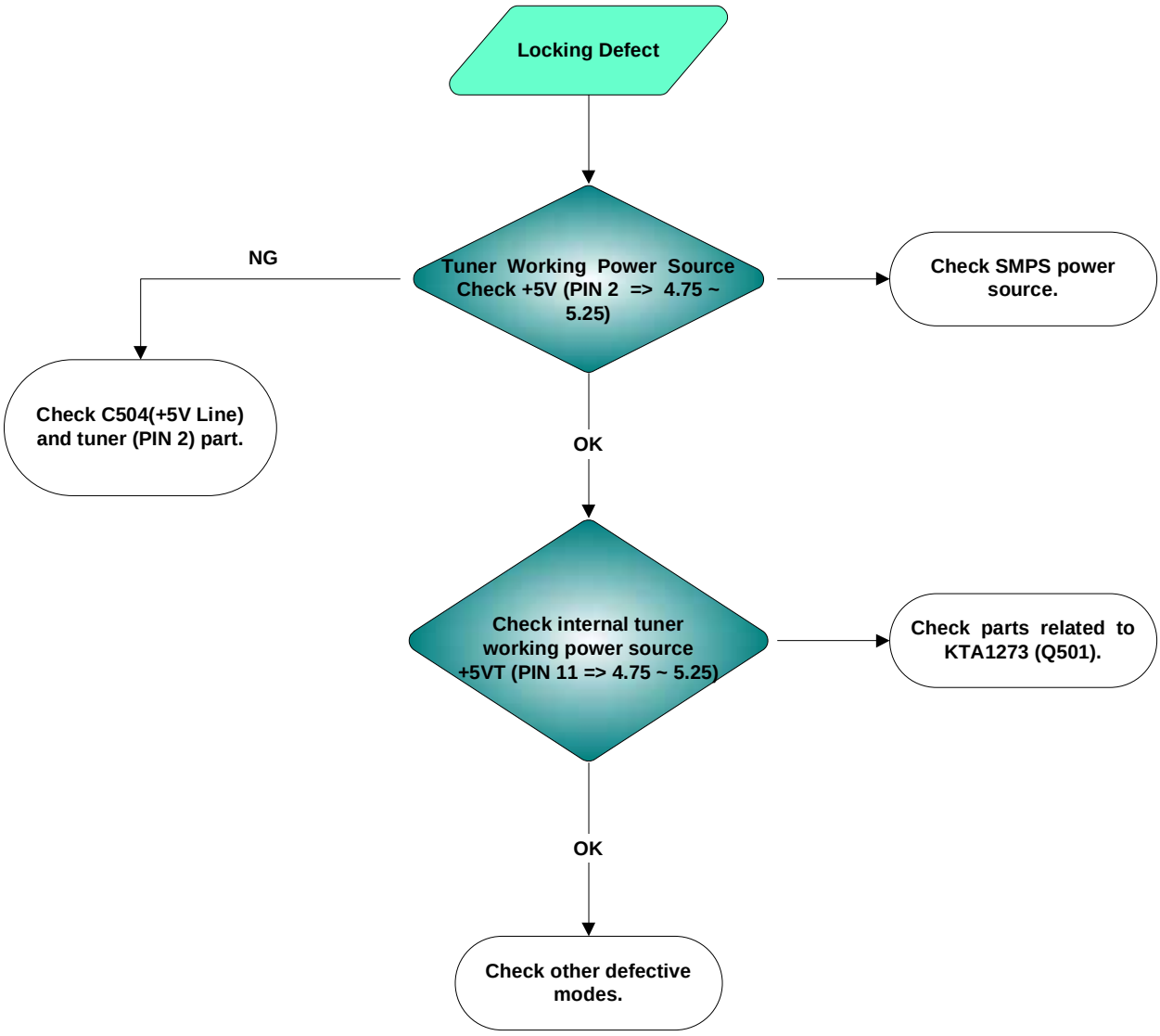
Inspection of Channel Operations

All parts including power source/CPU are working normally, but channels cannot be locked.

b. Working Voltage of Tuner

Preliminary Check Points

- **+5V/+5VT given to the tuner is the working voltage inside the tuner. If the r.ipple makes the voltage unstable, the frequency inside the tuner is changed, causing a locking defect.**



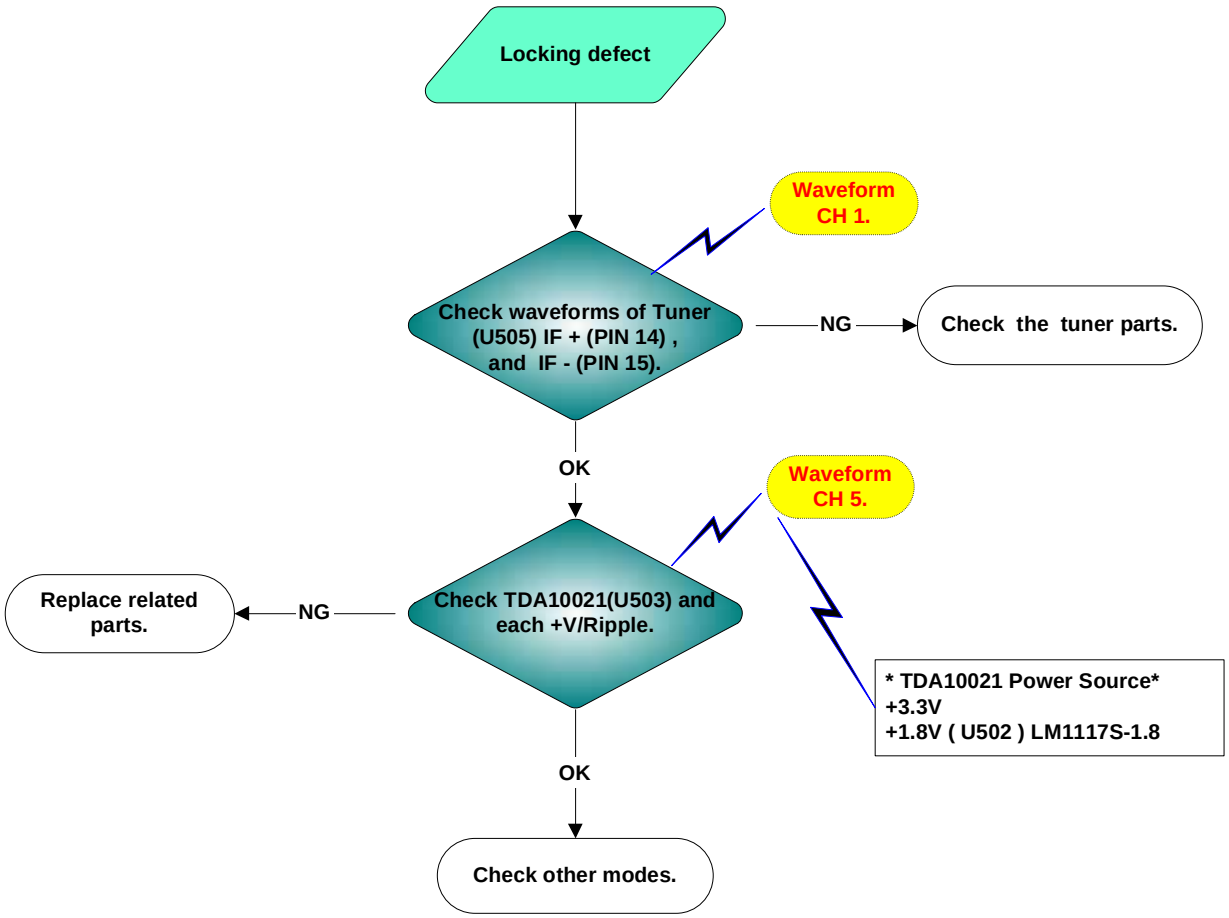
Inspection of Channel Operations

All parts including power source/CPU are working normally, but channels cannot be locked.

f. Working Voltage of Tuner Output IF & TDA10021

Preliminary Check Points

❖ The tuner output IF signal is biased at TDA10021 and is about 850mVpp at 1.6V ~ 1.7V.



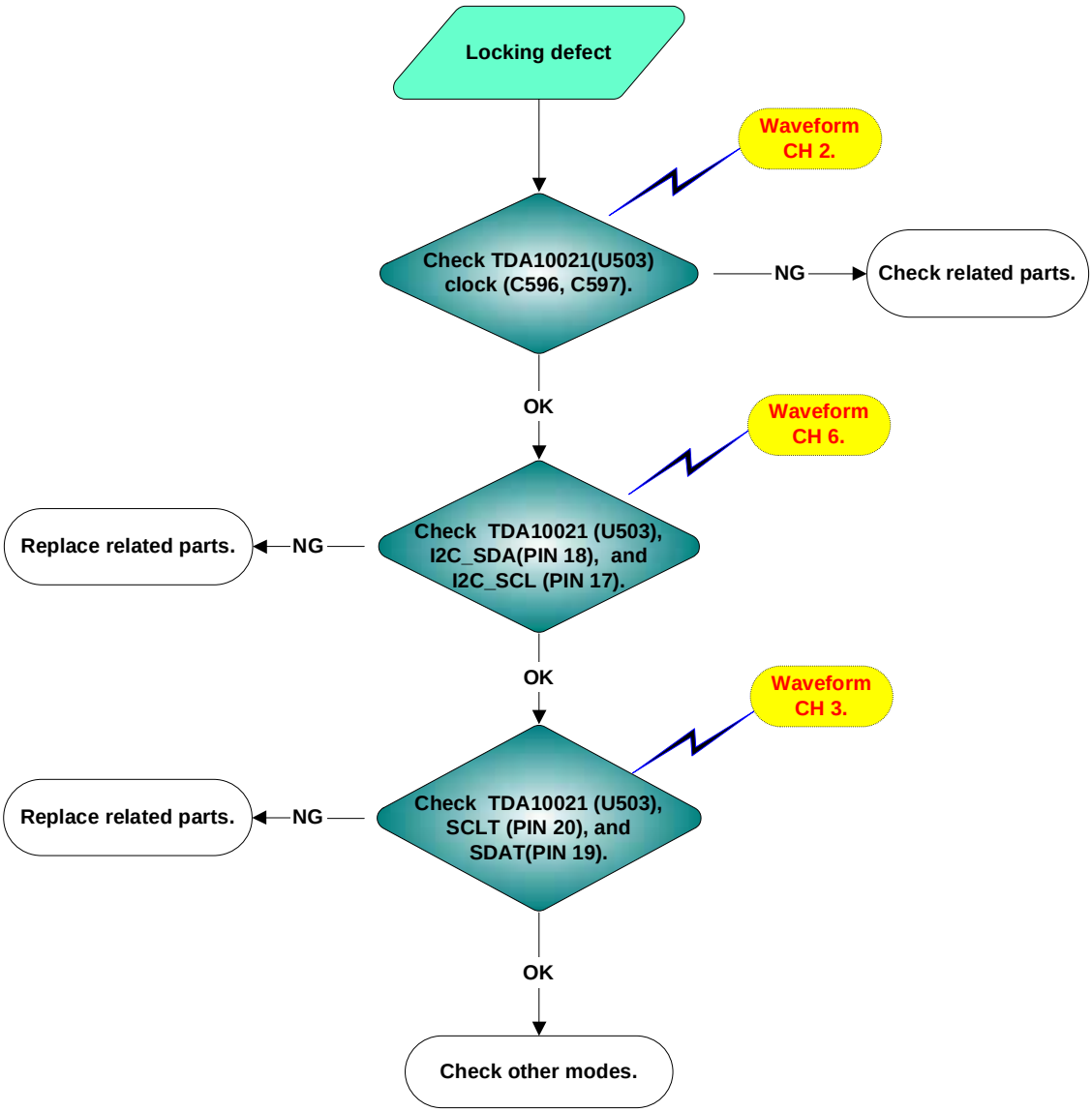
Inspection of Channel Operations

All parts including power source/CPU are working normally, but channels cannot be locked.

h. TDA10021 28.920MHz Clock & I2C BUS

Preliminary Check Points

- The TDA10021 CLOCK Y501 28.920MHz is converted to the A/D clock through the internal divider and used as the internal clock. Therefore, check if it produces the waveform generated by X-TAL.
- The I2C BUS is generated from STi5518 for control of the tuner and TDA10021 and used mostly for data setting necessary for channel locking and also for status reading.



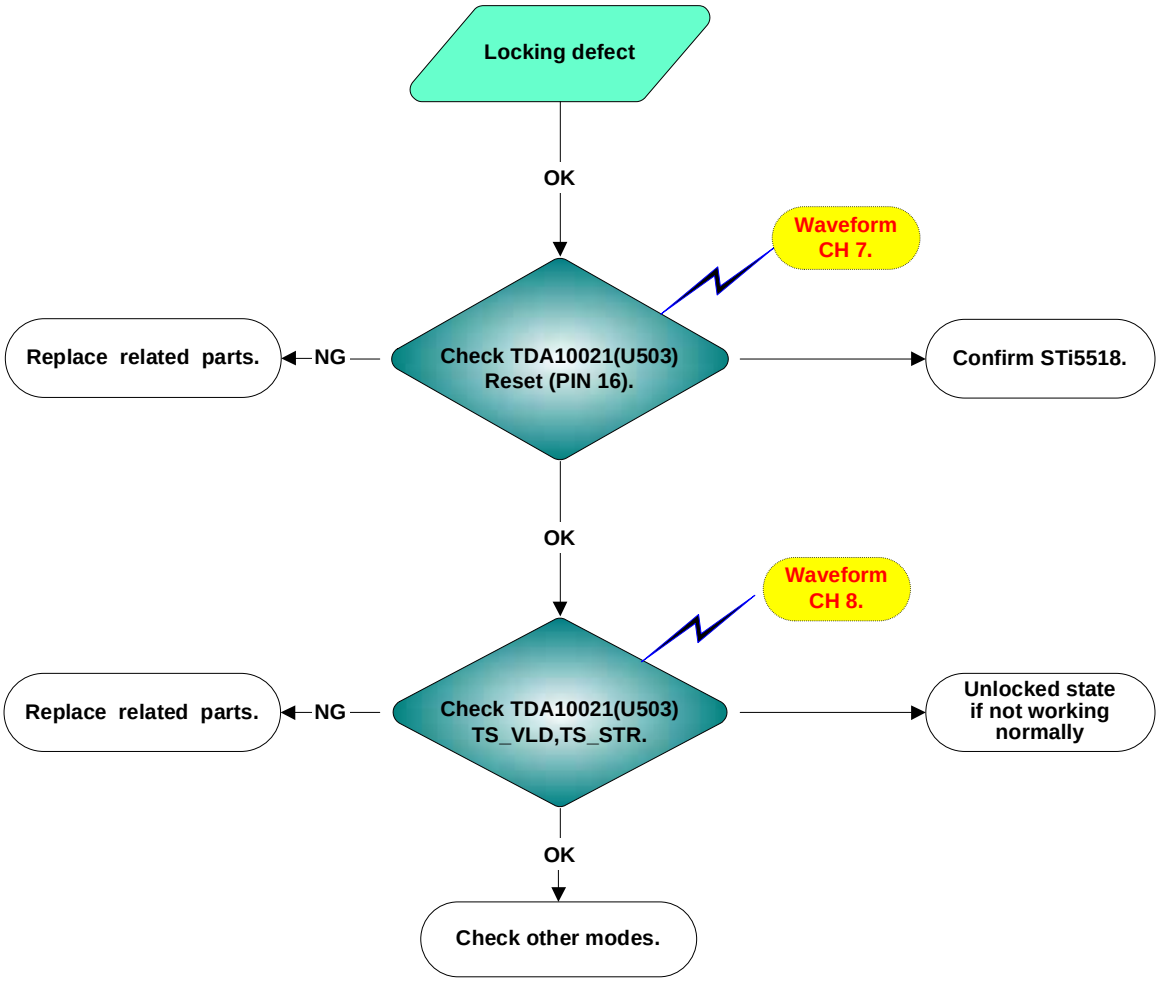
Inspection of Channel Operations

All parts including power source/CPU are working normally, but channels cannot be locked.

g. TDA10021 Input/Output Signal

Preliminary Check Points

- **TDA10021 output is mainly divided into Bit Clock, Valid, and 8BIT Data and differs slightly depending on the transmission parameters. Each signal is generated only when 10021 internal locking is completed.**

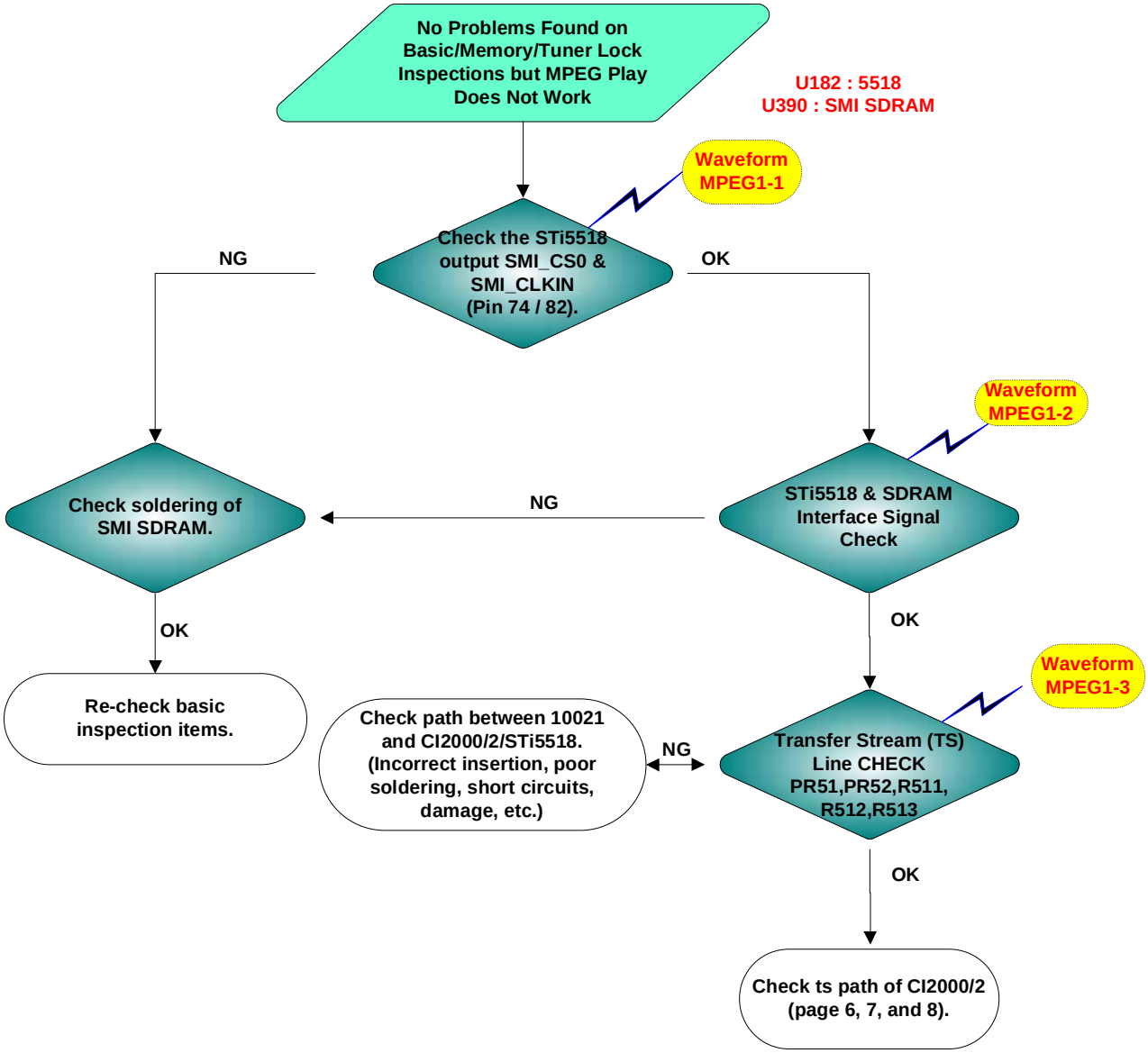


MPEG Inspection

No Problems Found on Basic and CPU/System Memory Inspections, but MPEG Does Not Play
- Check MPEG SDRAM Interface/Transfer Stream (TS).

Preliminary Checkpoints

- If MPEG playback does not work even though no problems were found on the Basic inspection, CPU/Flash inspection, and Tuner Lock inspection, check the SMI SDRAM I/F of the MPEG memory sector.
- SMI SDRAM of IC STi5518 is selected when the SMI_CS0 (Pin 74) signal of STi5518 is LOW.
- The main cause of the problems related to System Memory (i.e. Flash and SDRAM) is the soldering of parts. Therefore, in the event of a problem, first check the condition of the soldering and the power supply of IC.



- Useful Tips

1. The above checkpoints are listed in order.
   Because signals will pass through various paths between the above checkpoints, if any checkpoint shows waveforms unlike the above, refer to the circuit diagram according to the above order to identify the location.

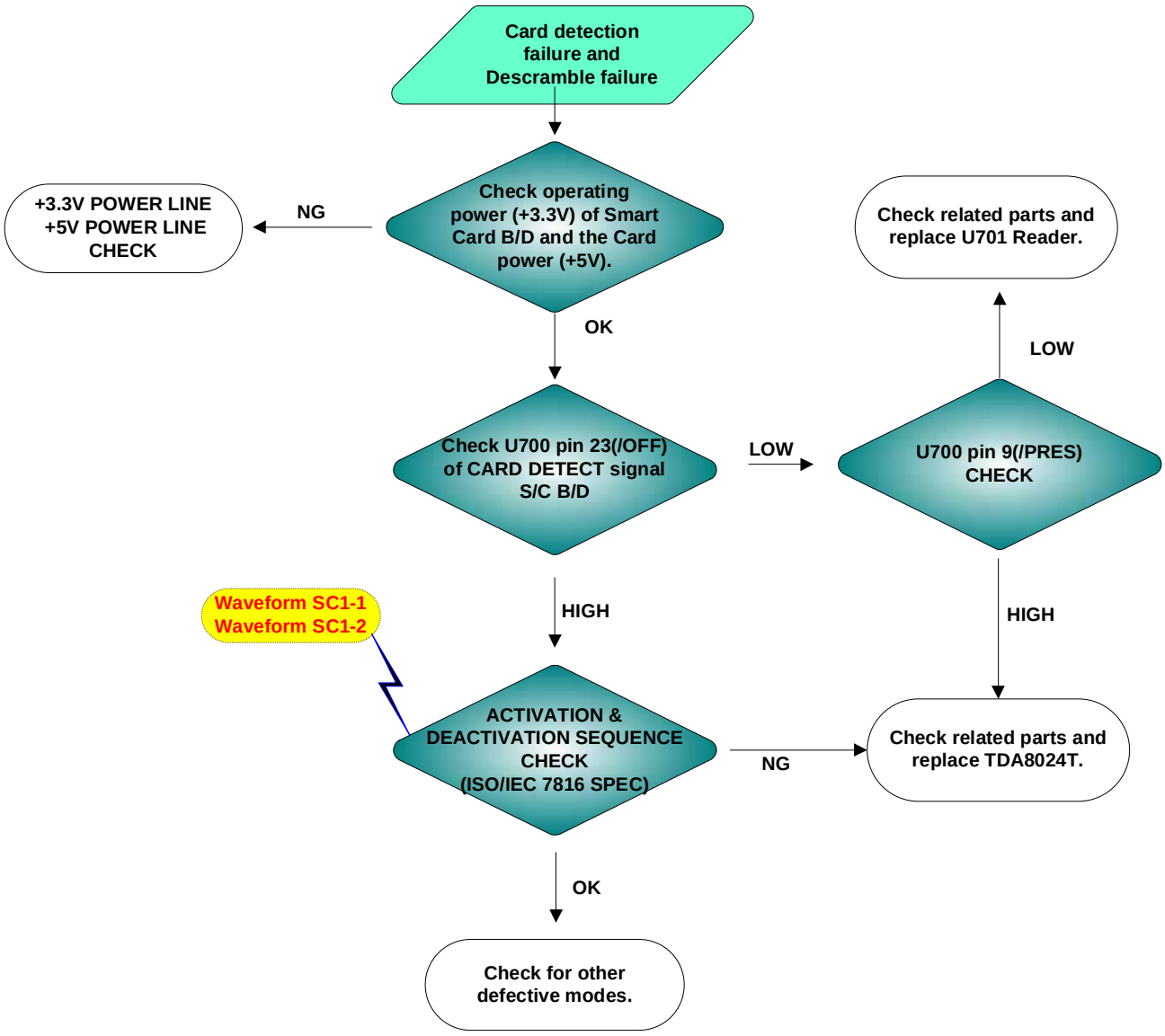
2. If the MPEG still does not play, check if a signal error is caused by poor soldering of the TS Data Line.

Smart Card (CAS) Inspection

Card Not Detected or Cannot Descramble

Preliminary Checkpoints

- **If a problem has occurred with Smart Card operation, check the soldering around TDA8004 and Card Reader. If no problem is found, check the condition of each signal. It may be necessary to check whether the card has any problems by using a Smart Card B/D and Smart Card that work normally.**



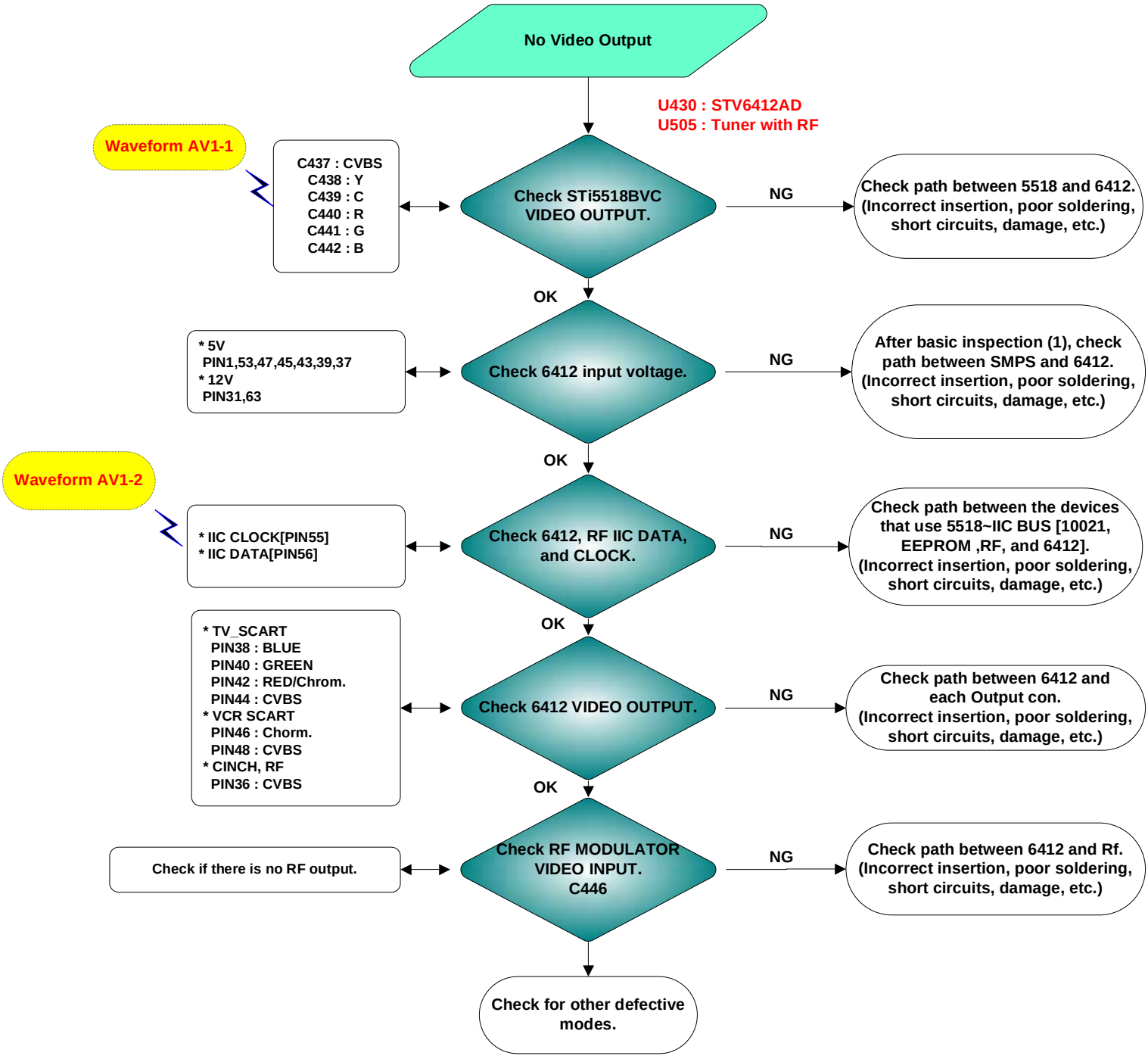
- **Useful Tips**

1. **When accessing Smart Card, if Activation Sequence, Deactivation Sequence, or Emergency Deactivation Sequence (at Power-Off), which conform to ISO/IEC 7816 Spec, are not satisfied, the card may get damaged or result in descrambling.**

No Video Output

Preliminary Checkpoints

- If no video is output through TV/VCR SCART or CINCH while the front display and key controls are normal, first check the 5518 video output terminal and the 6412 input voltage.
- If no problems were found on the 5518 output terminal and the 6412 input voltage, check the output signal around 6412 since the final video out is controlled by 6412.



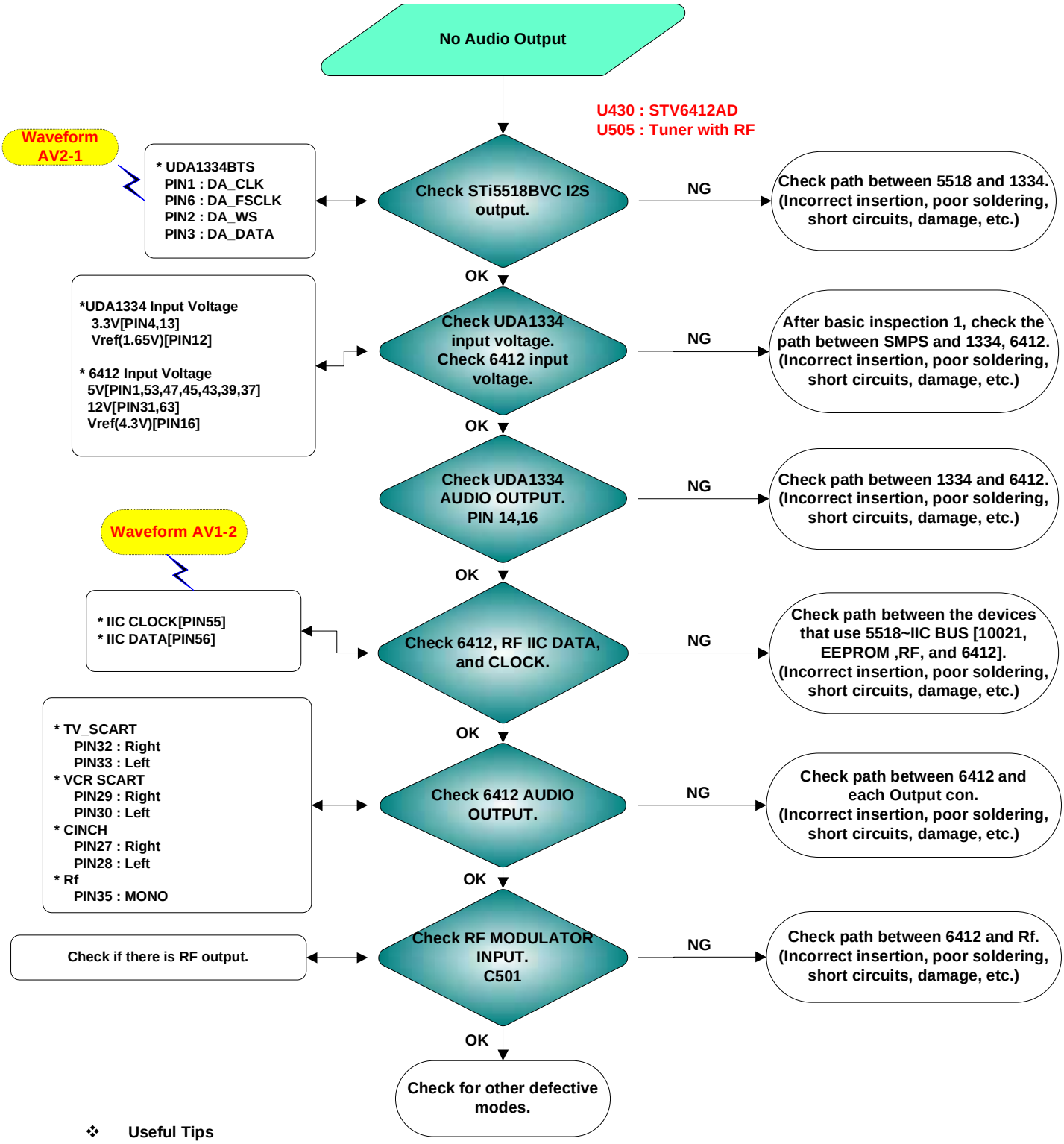
- **Useful Tips**

1. Because I2C BUS continues polling, to determine whether the devices using the I2C are working properly, check the waveforms and messages using s/w with monitor s/w or debug.

No Audio Output

Preliminary Checkpoints

- If no audio is output through CINCH while the system is normal, first check the 5518 AUDIO output [I2S interface].
- If no problems were found, check the UDA1334 AUDIO OUT terminal and 6412 OUT to identify the problem path.



- Useful Tips

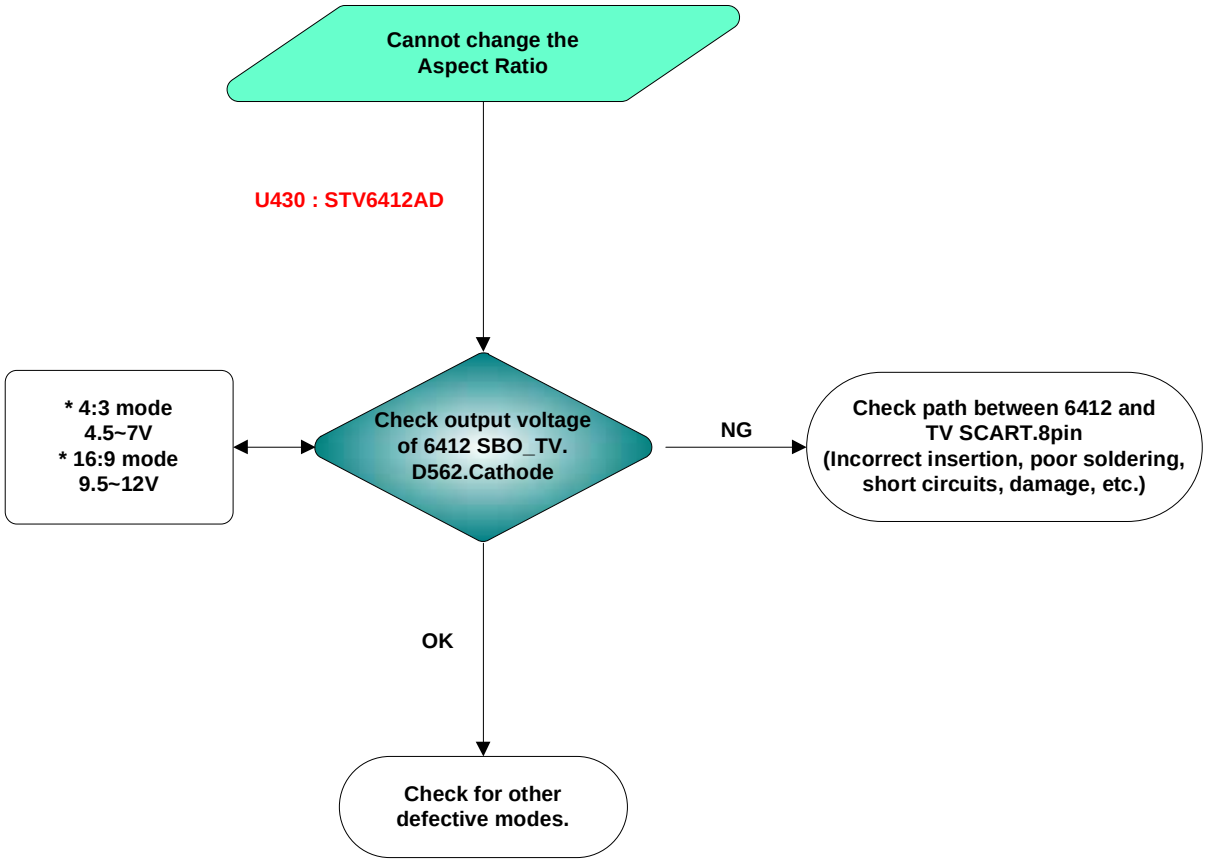
1. Because I2C BUS continues polling, to determine whether the devices using the I2C are working properly, check the waveforms and messages using s/w with monitor s/w or debug.

A/V Inspection 3

Cannot Change the Screen Ratio [4:3 <-> 16:9]

Preliminary Checkpoints

❖ If the aspect ratio cannot be changed while the system is normal [including A/V Inspection (1, 2)], check the SCART function voltage of 6412.

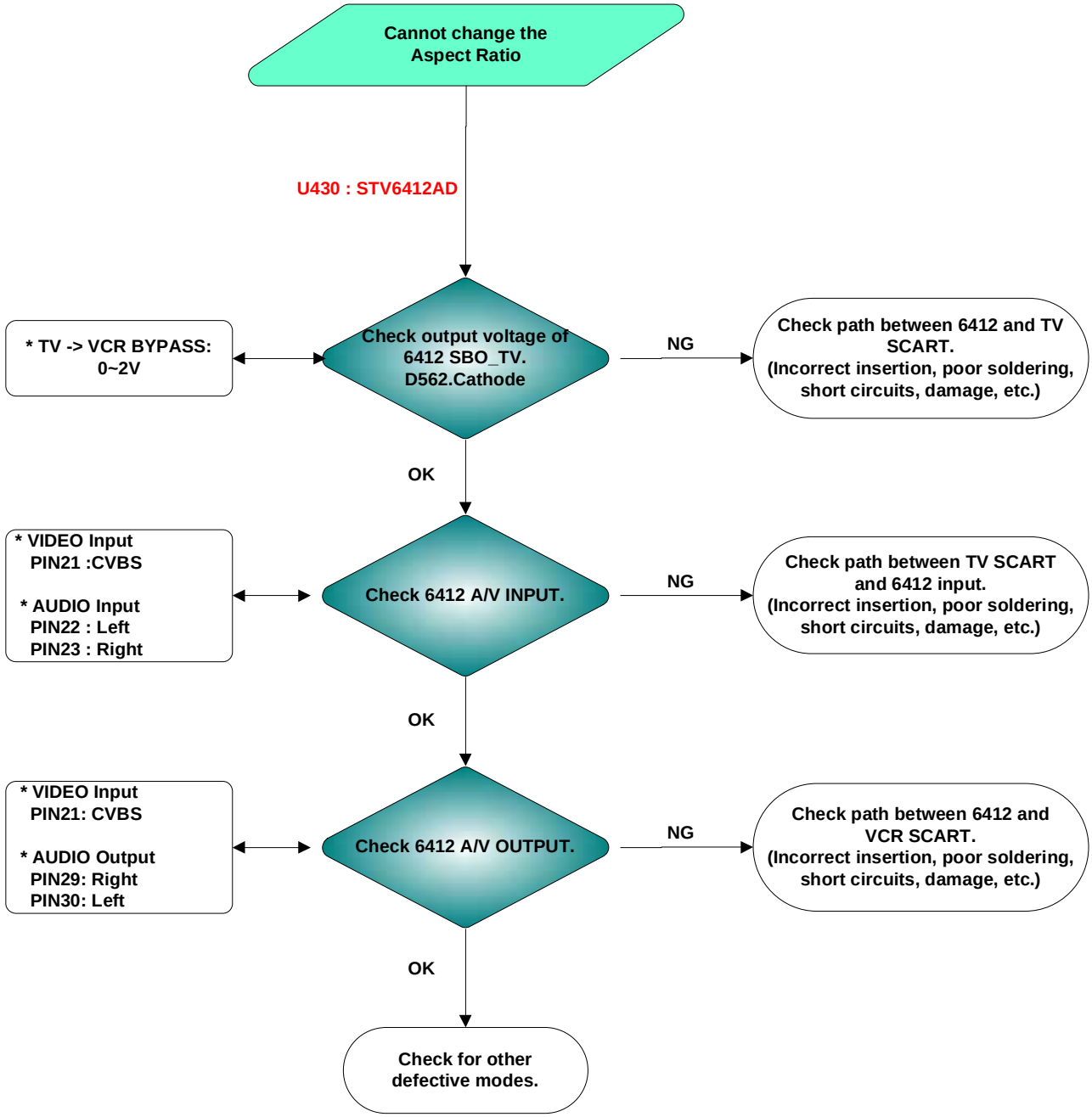


A/V Inspection 4

T-> VCR Bypass Does Not Work V

Preliminary Checkpoints

> ❖ If TV -> VCR Bypass does not work while the system is normal [including A/V Inspection (1, 2)], check the input and output of 6412.

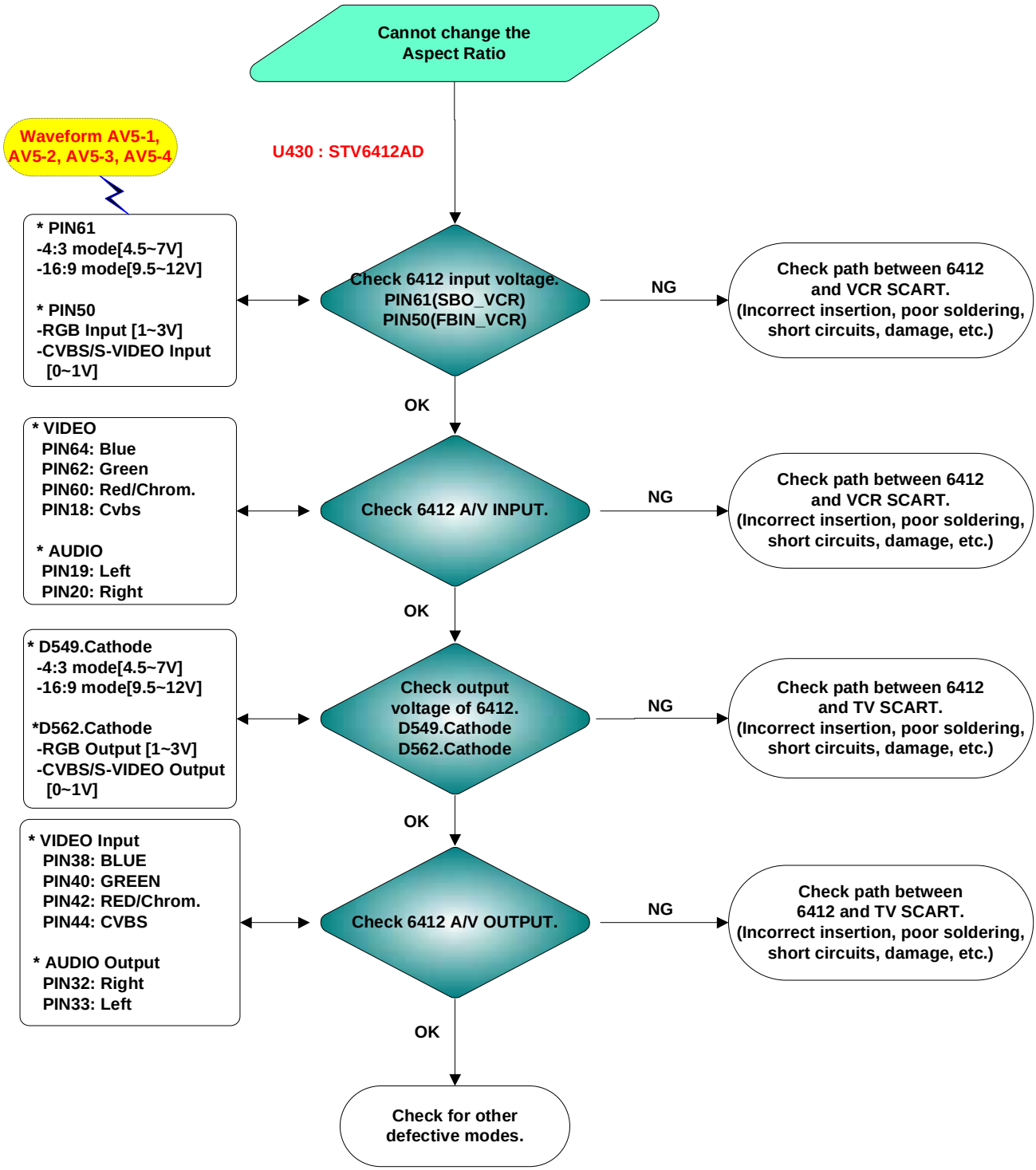


A/V Inspection 5

VCR -> TV VCR -> TV Bypass Does Not Work.

Preliminary Checkpoints

❖ If VCR -> TV Bypass does not work while the system is normal [including A/V Inspection (1, 2)], check the input and output of 6412.

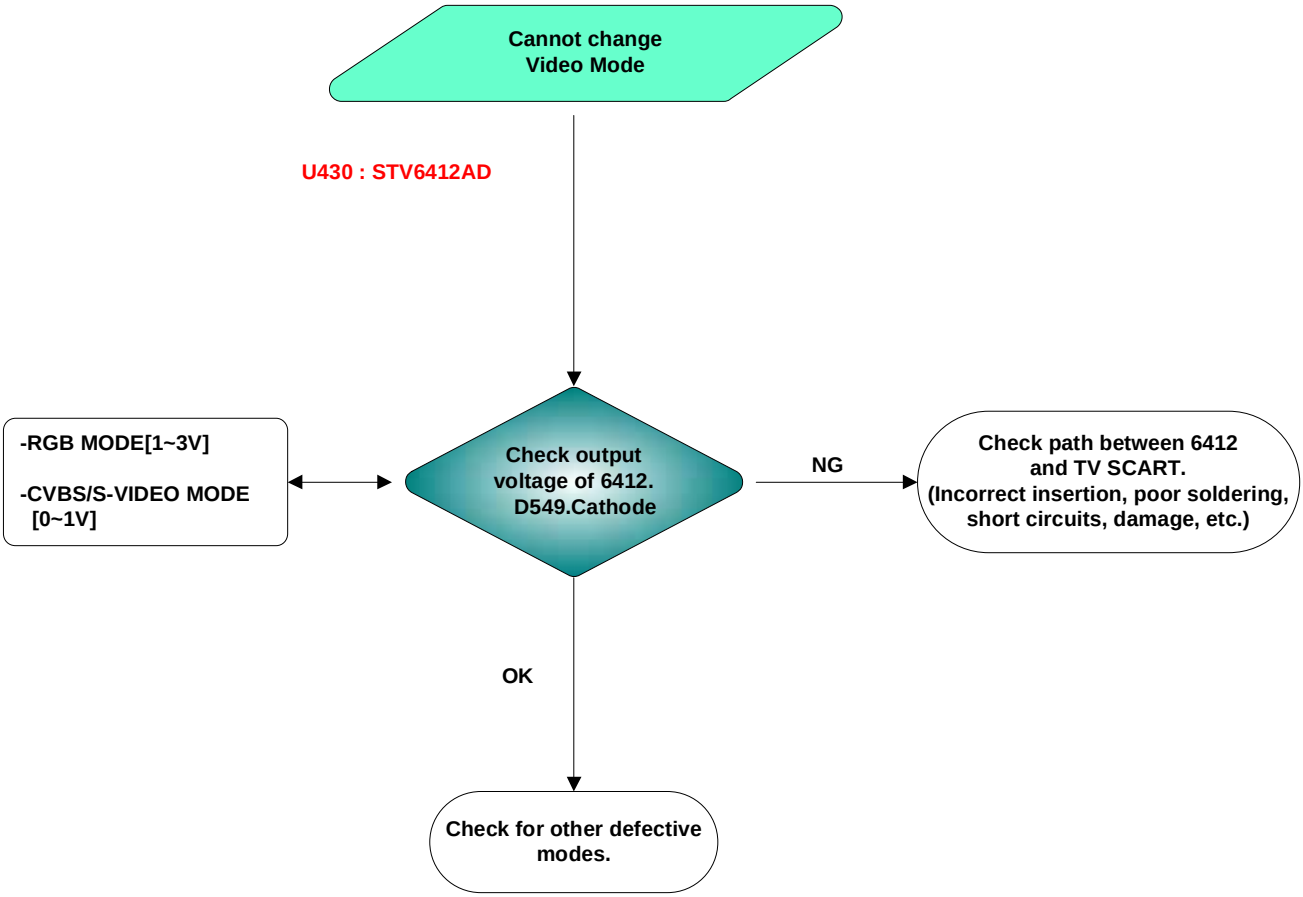


A/V Inspection 6

Cannot Switch between CVBS (S-VIDEO) <-> RGB

Preliminary Checkpoints

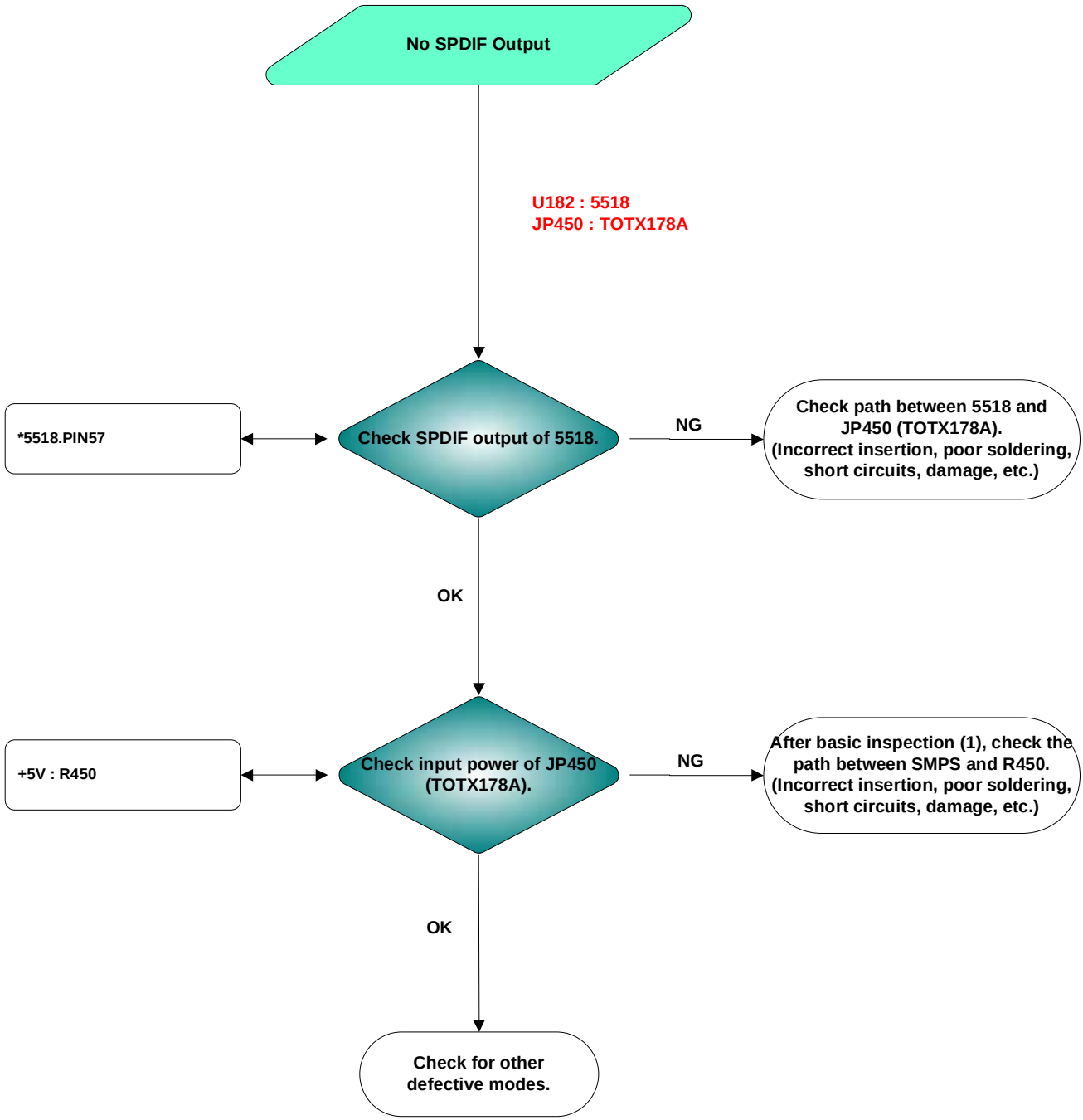
- If CVBS (S-VIDEO) <-> RGB switching does not work while the system is normal [including A/V Inspection (1, 2)], check fast blanking of 6412.



No SPDIF Output

Preliminary Checkpoints

- If the SPDIF output is not working while the system is normal (including MPEG Play and A/V Output), first check for any problems with the SPDIF output of 5518.
- If no problems were found, check for any problems with the input power of the SPDIF connector.

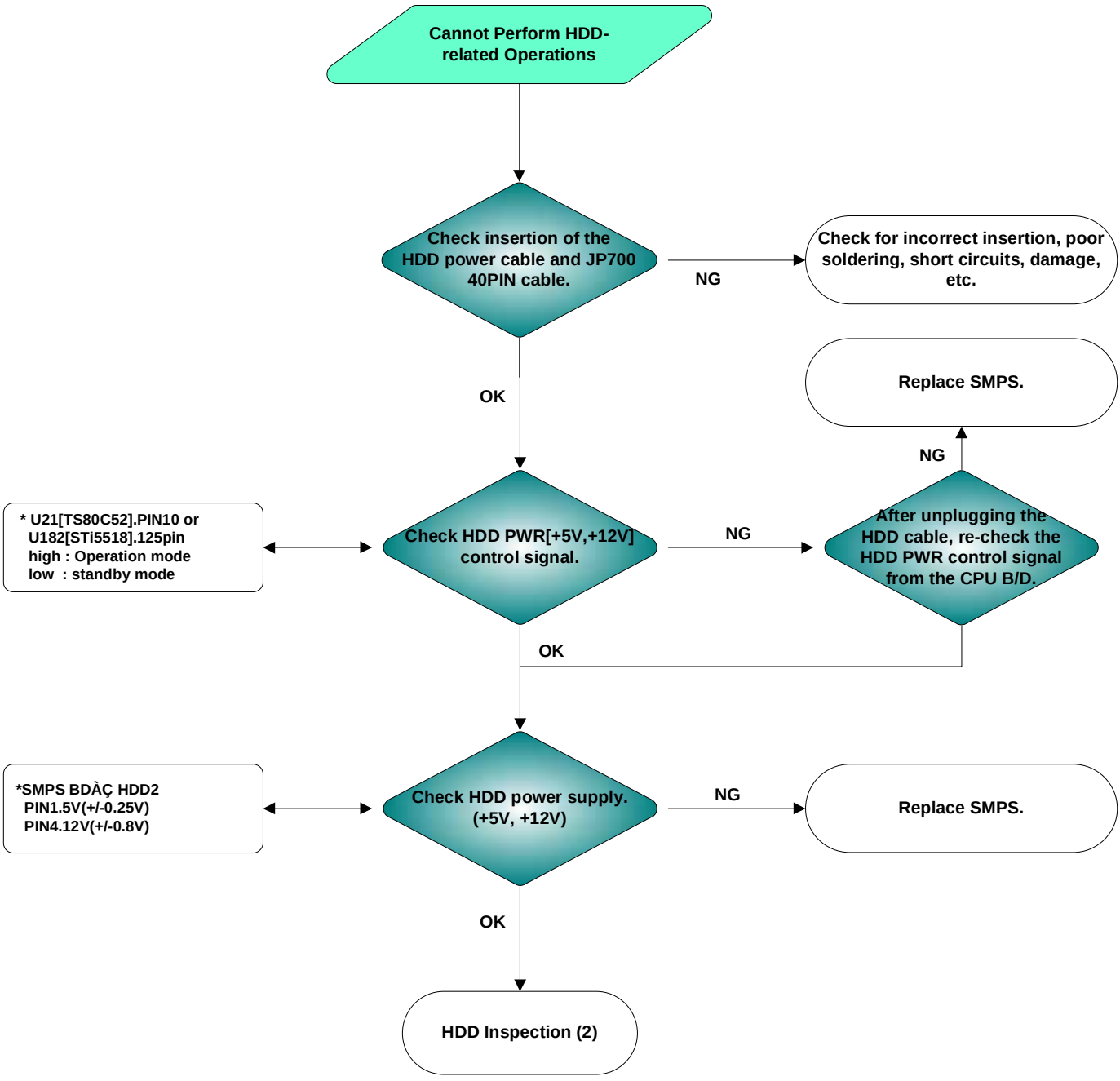


HDD Inspection (1)

Cannot Perform HDD-related Operations

Preliminary Checkpoints

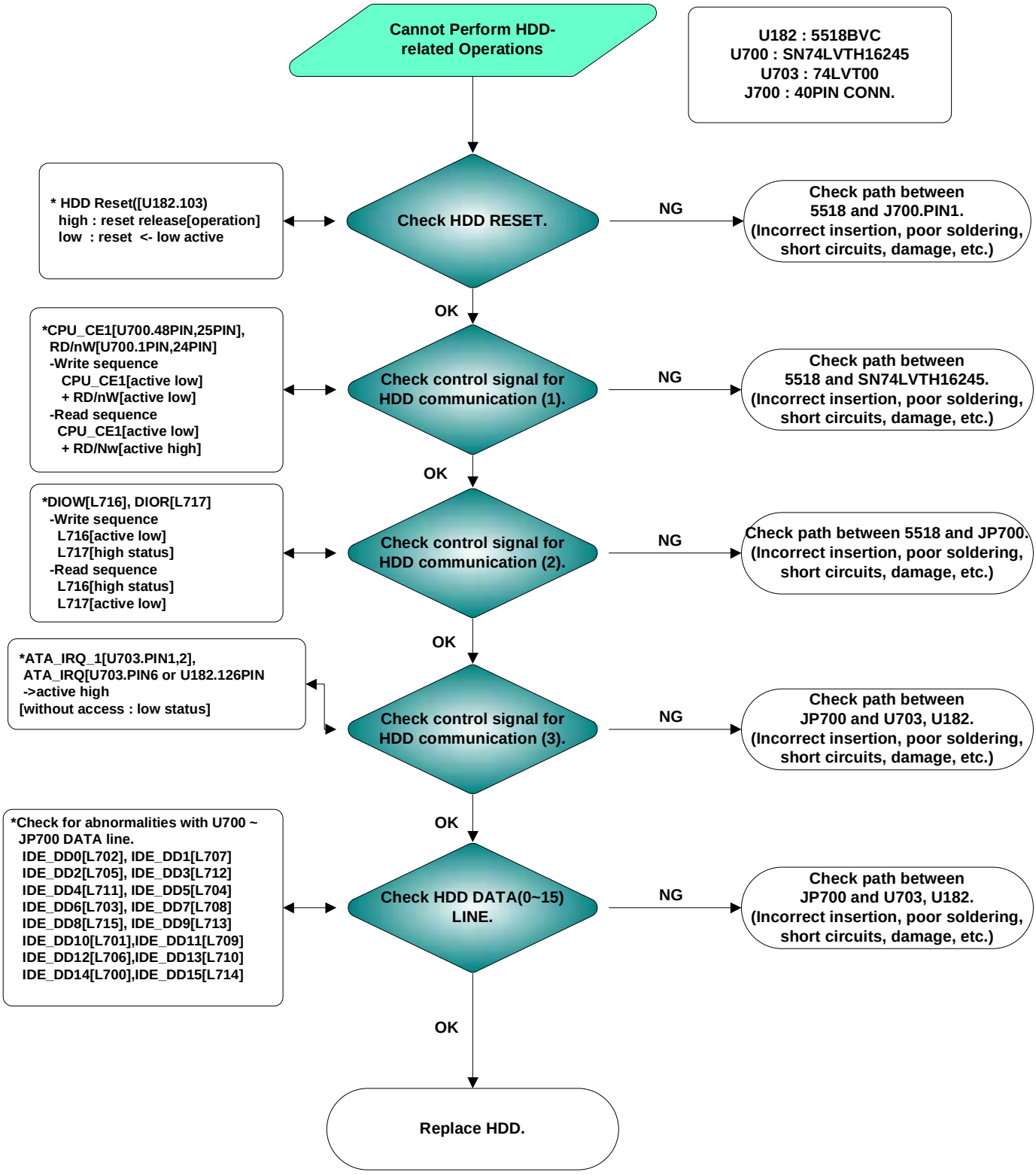
❖ If the HDD-related operations [TSR, RECORDING, TRICK] cannot be performed even though the system is normal, first check the HDD cable assembly condition and check for any problems with the HDD power supply.



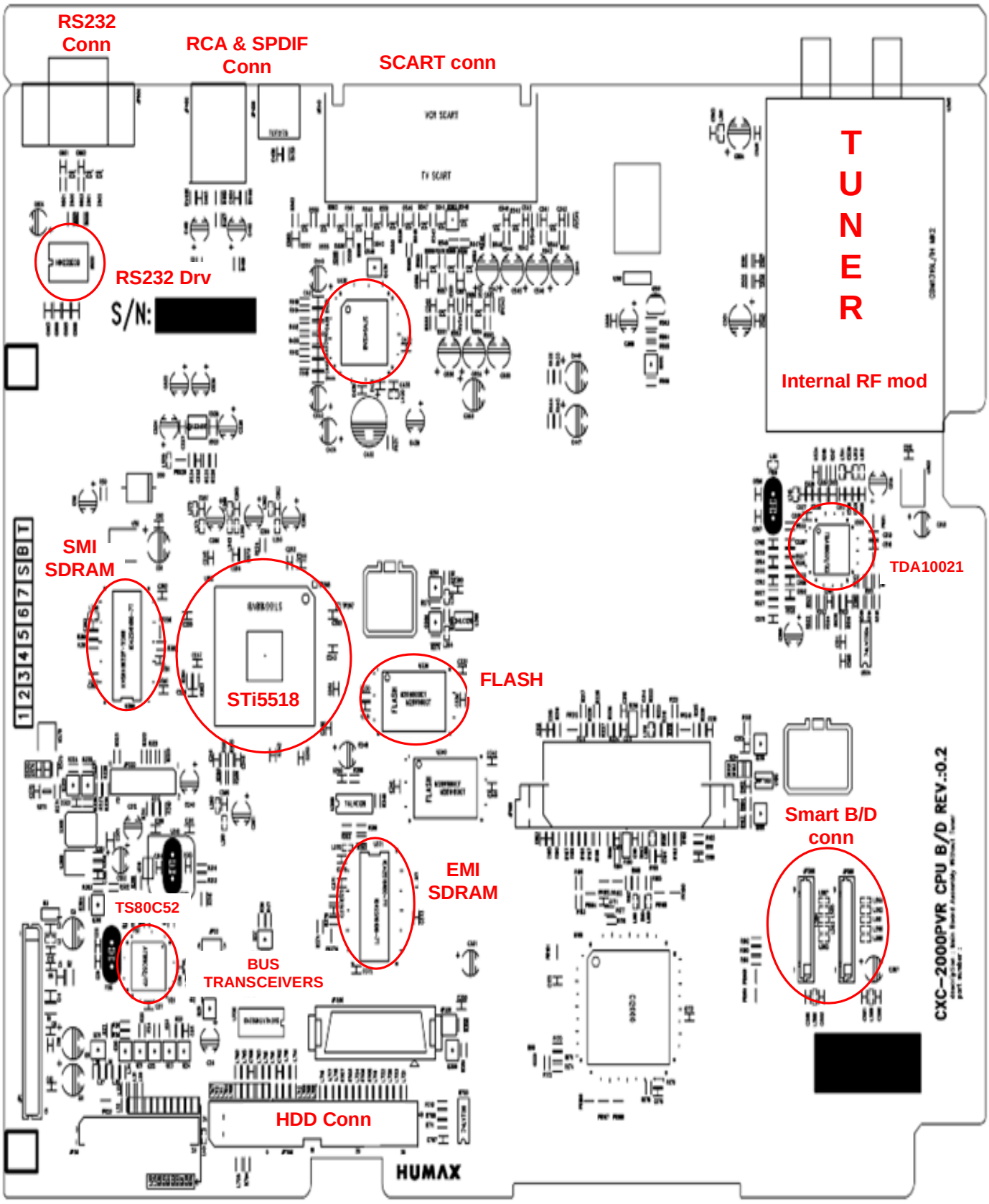
Cannot Perform HDD-related Operations

Preliminary Checkpoints

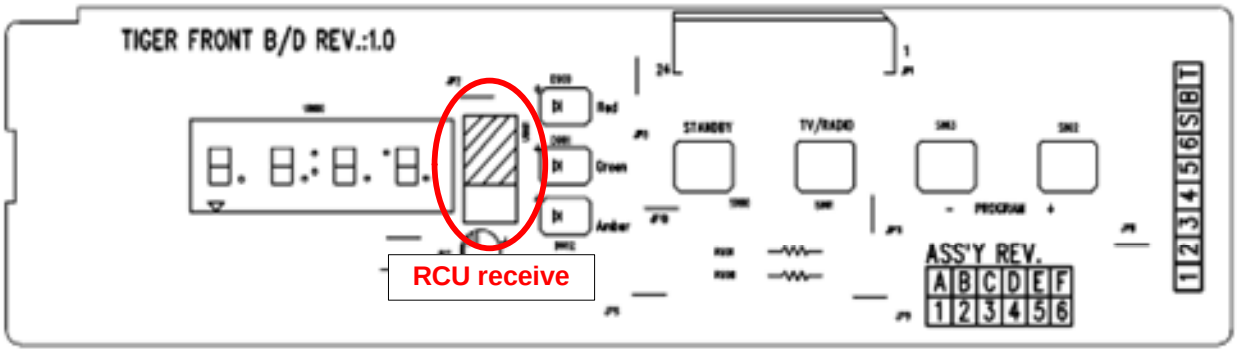
- If the HDD-related operations [TSR, RECORDING, TRICK] cannot be performed even though there is no problem with the system [including HDD Inspection (1)], check for any problems with the interface between 5518 and HDD.
- If there is no problem with the Interface, the problem lies with the HDD. Replace the HDD.

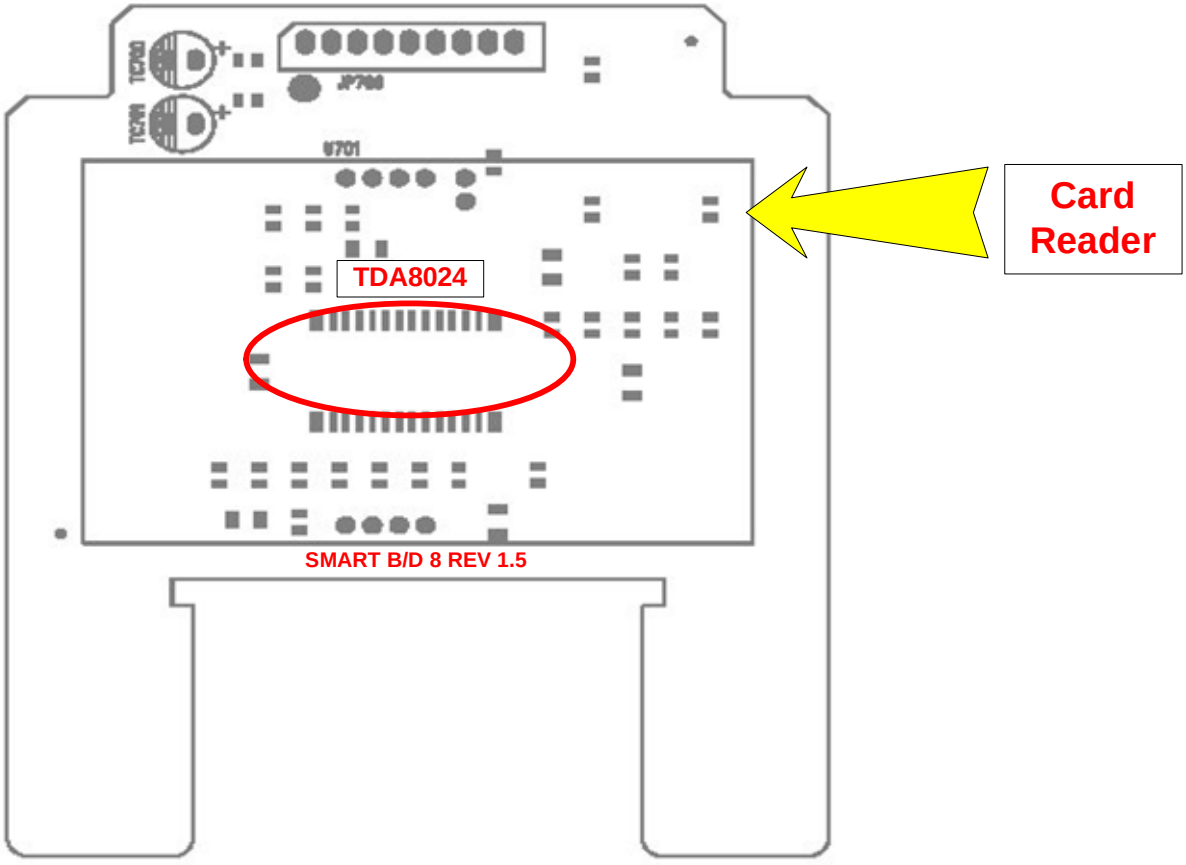


PCB Layout - CI TIGER S/P CPU B/D

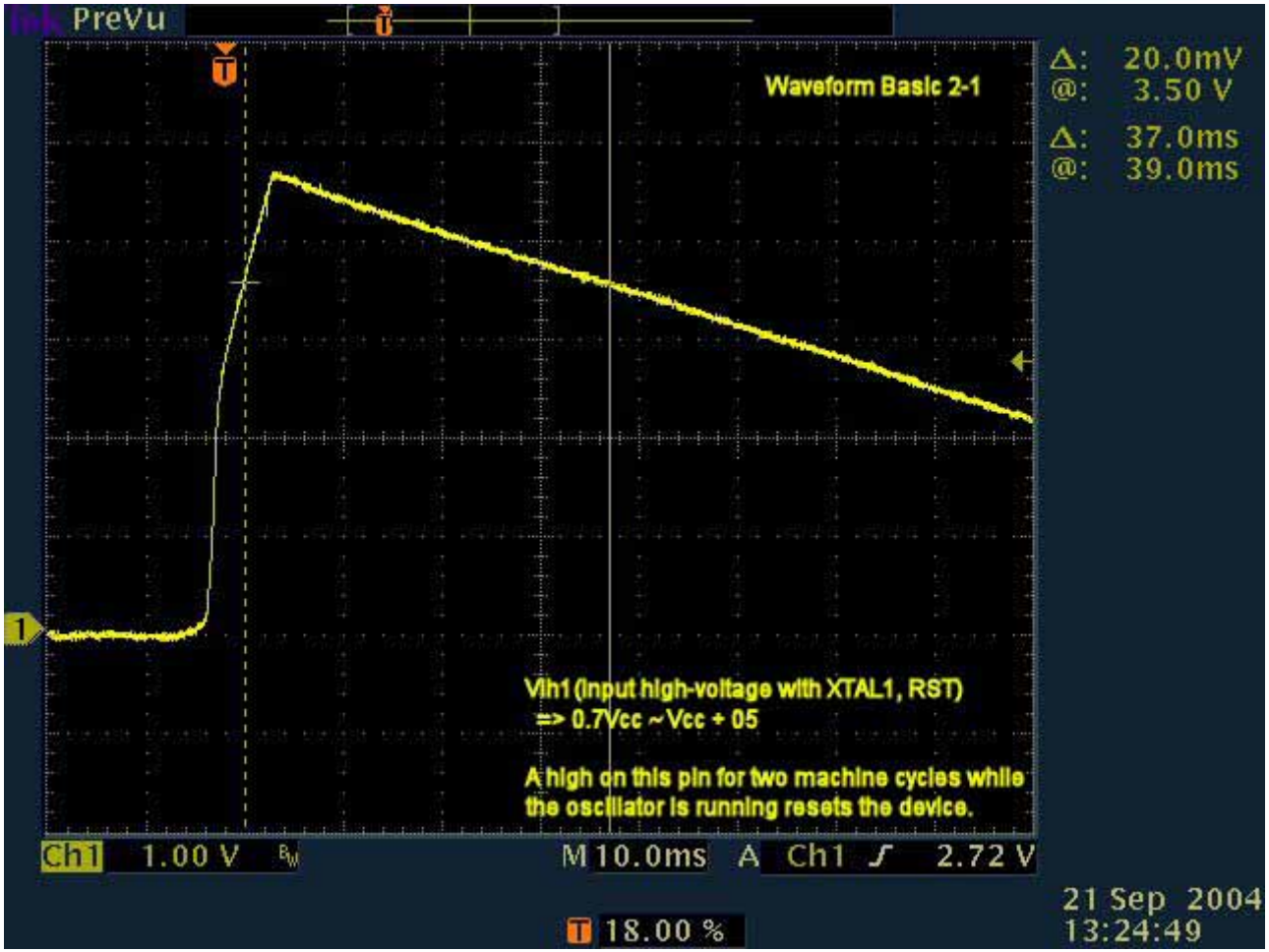


PCB Layout - Front, SmartCard B/D

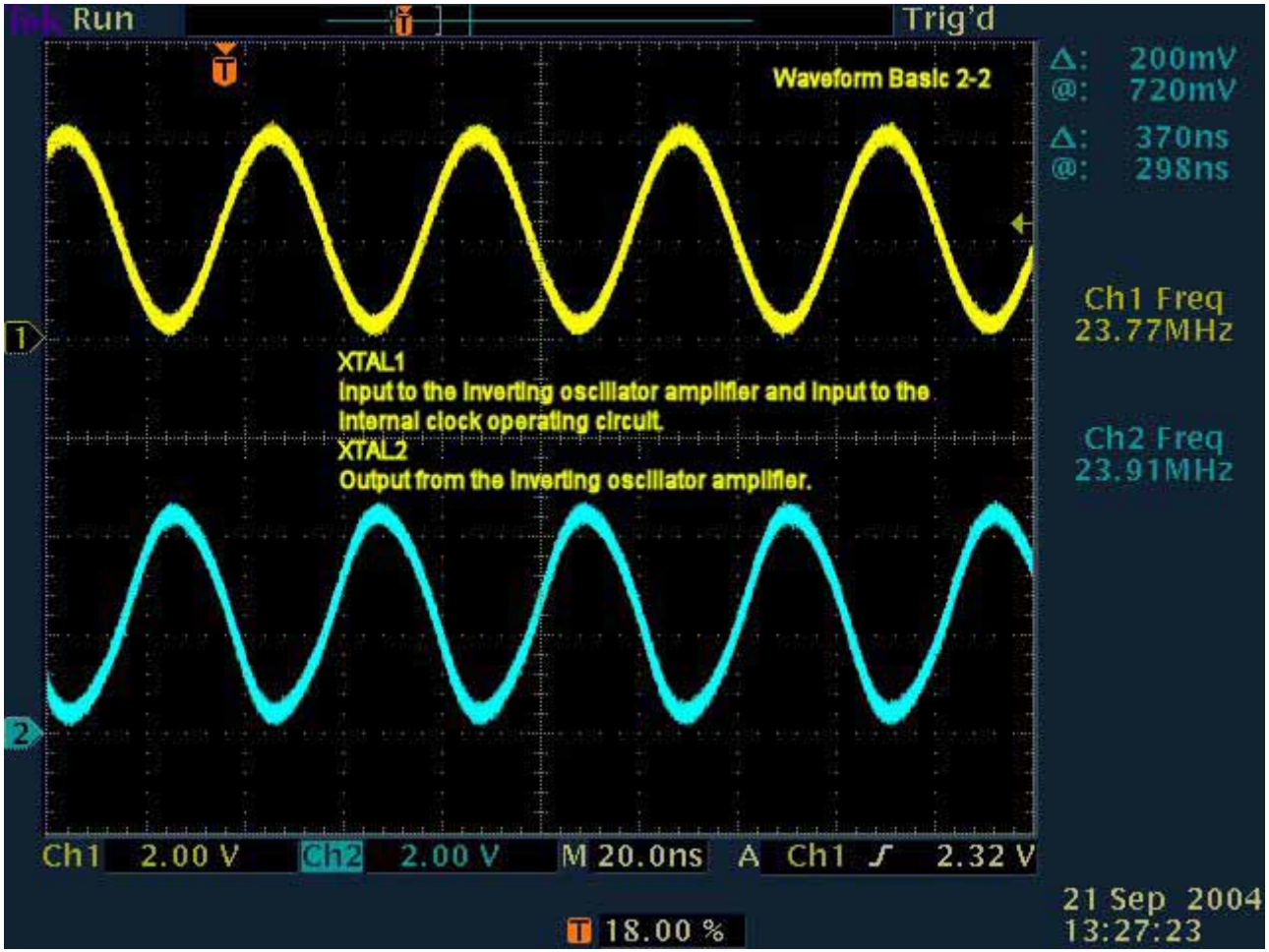




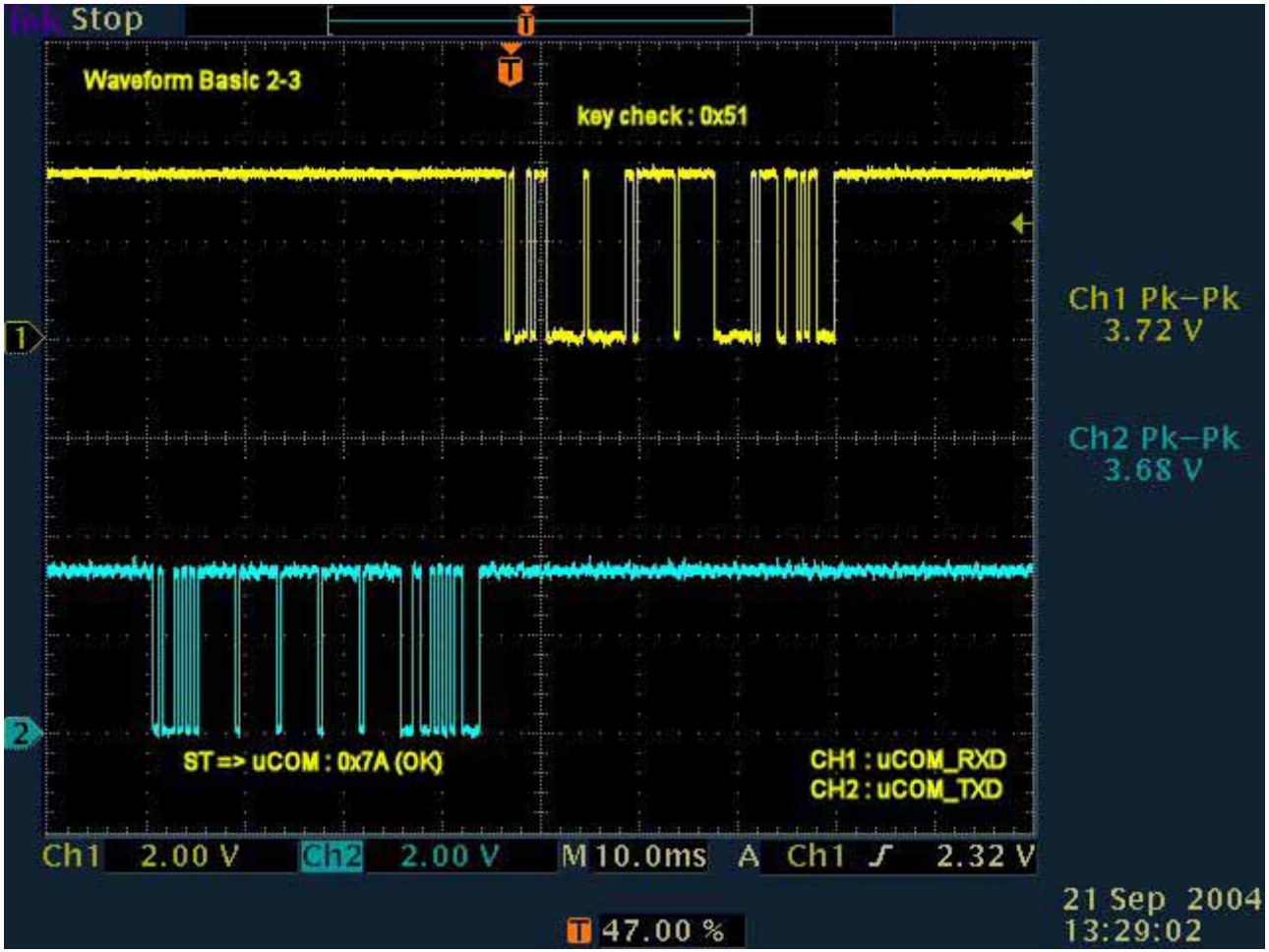
CXC-2000PVR WAVEFORMS



CXC-2000PVR WAVEFORMS



CXC-2000PVR WAVEFORMS



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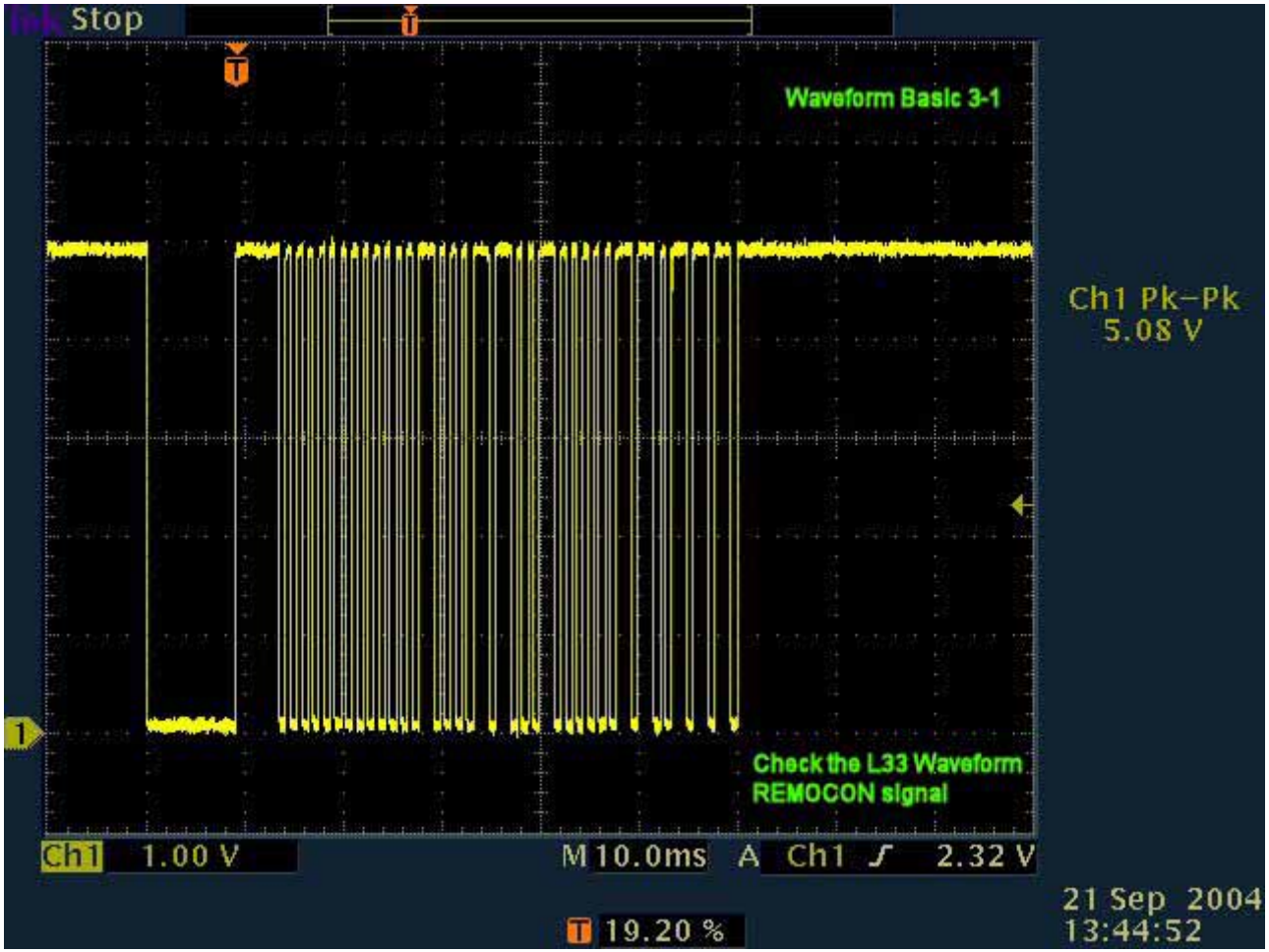

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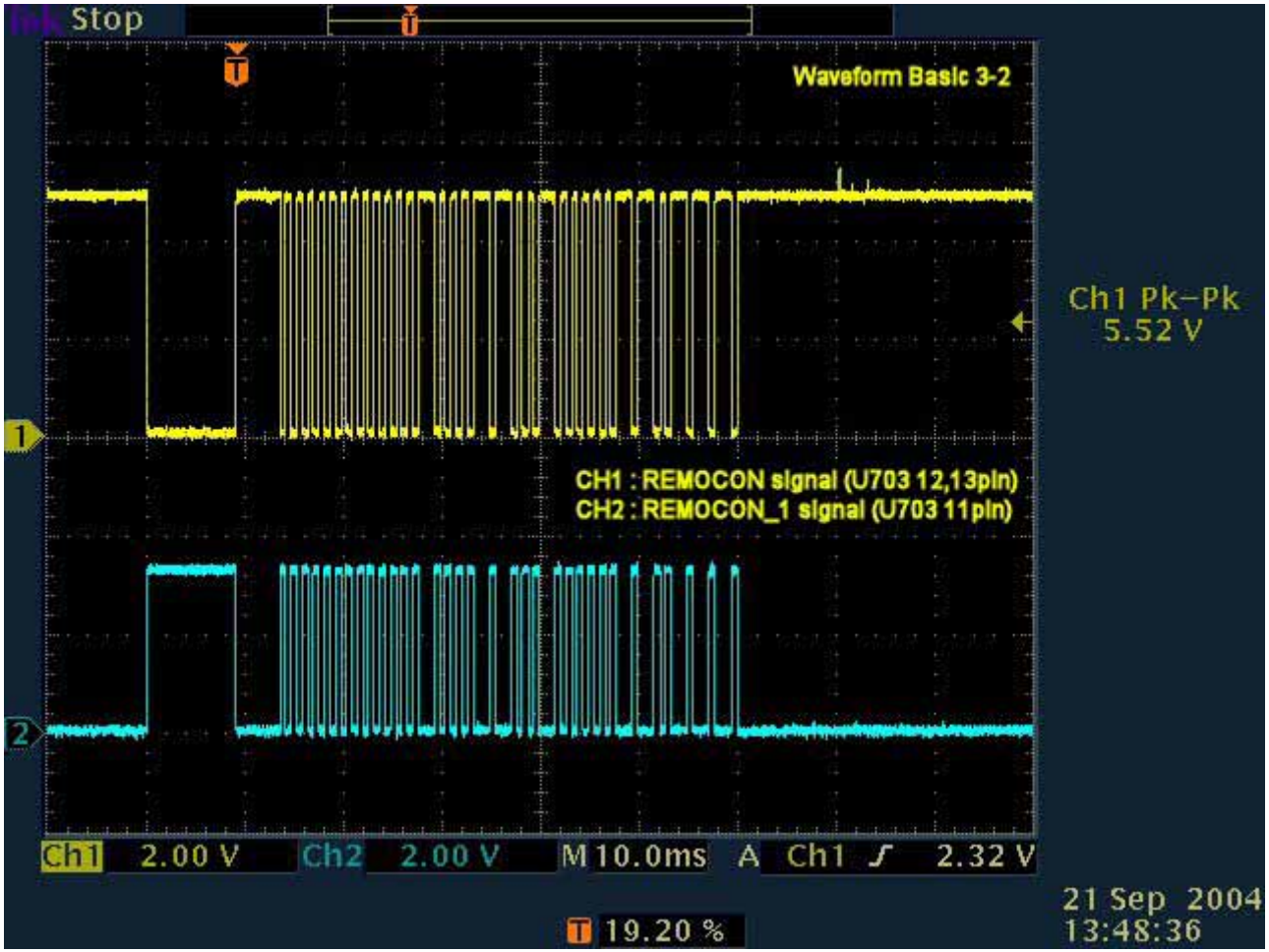

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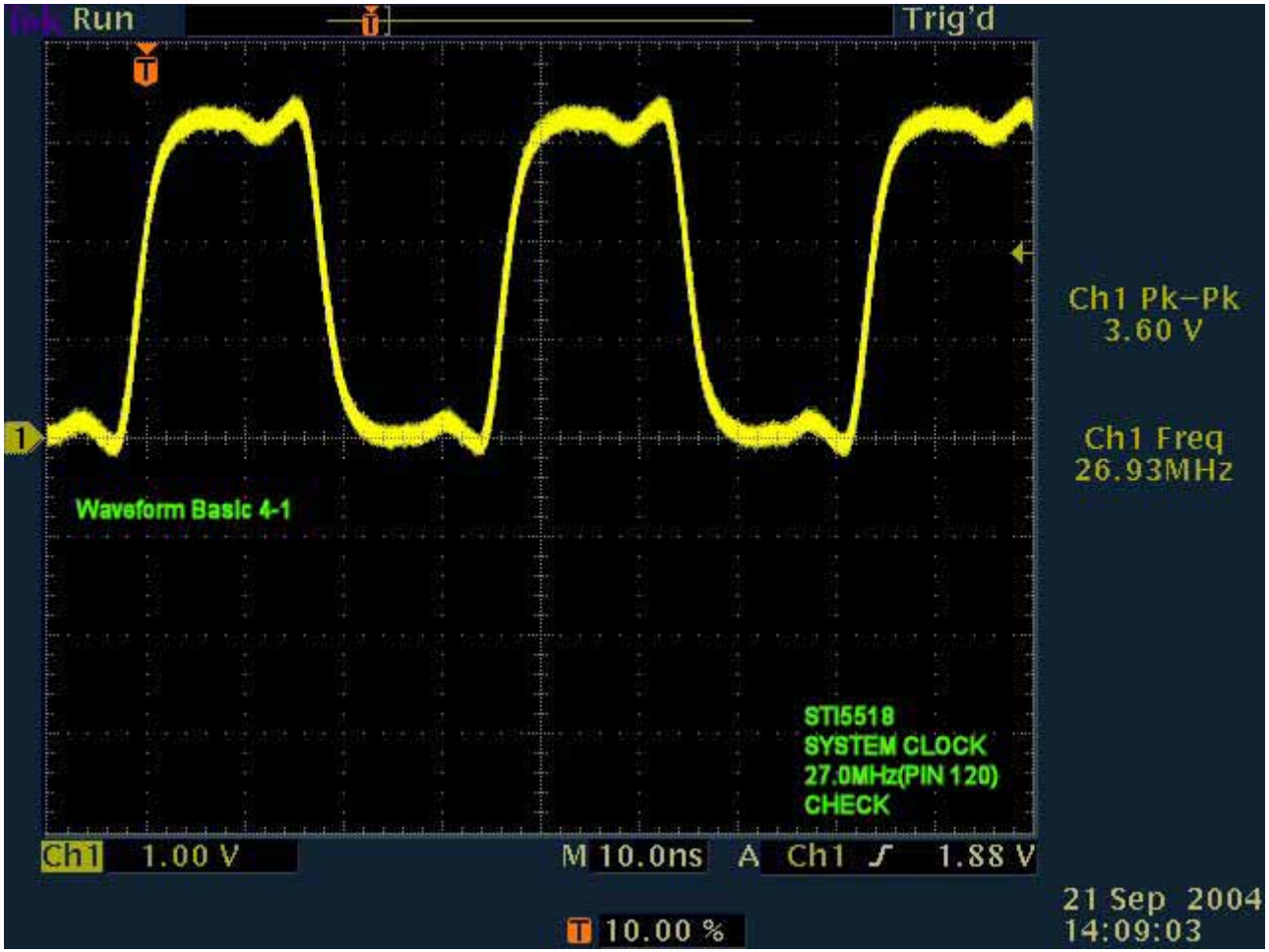

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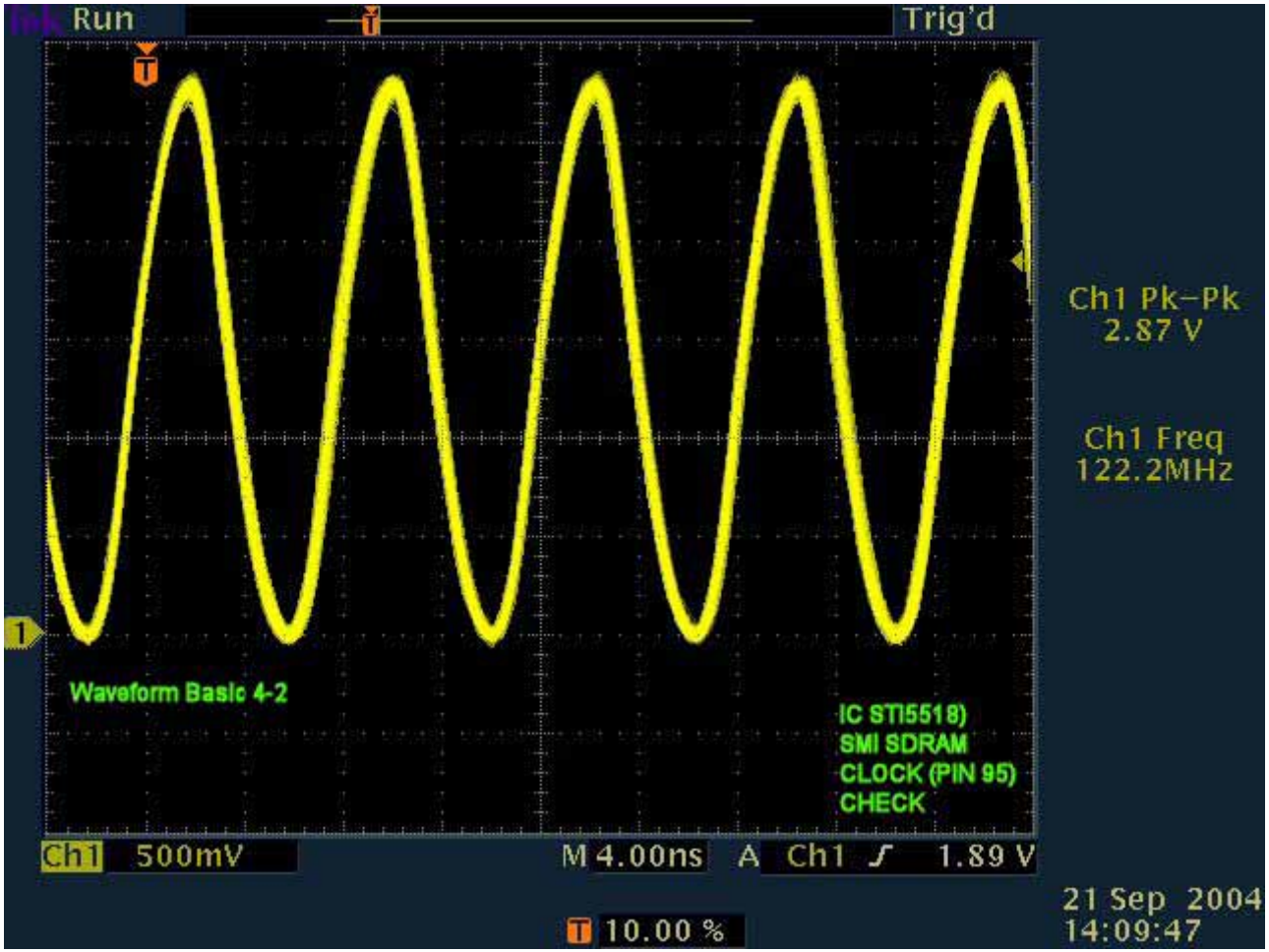

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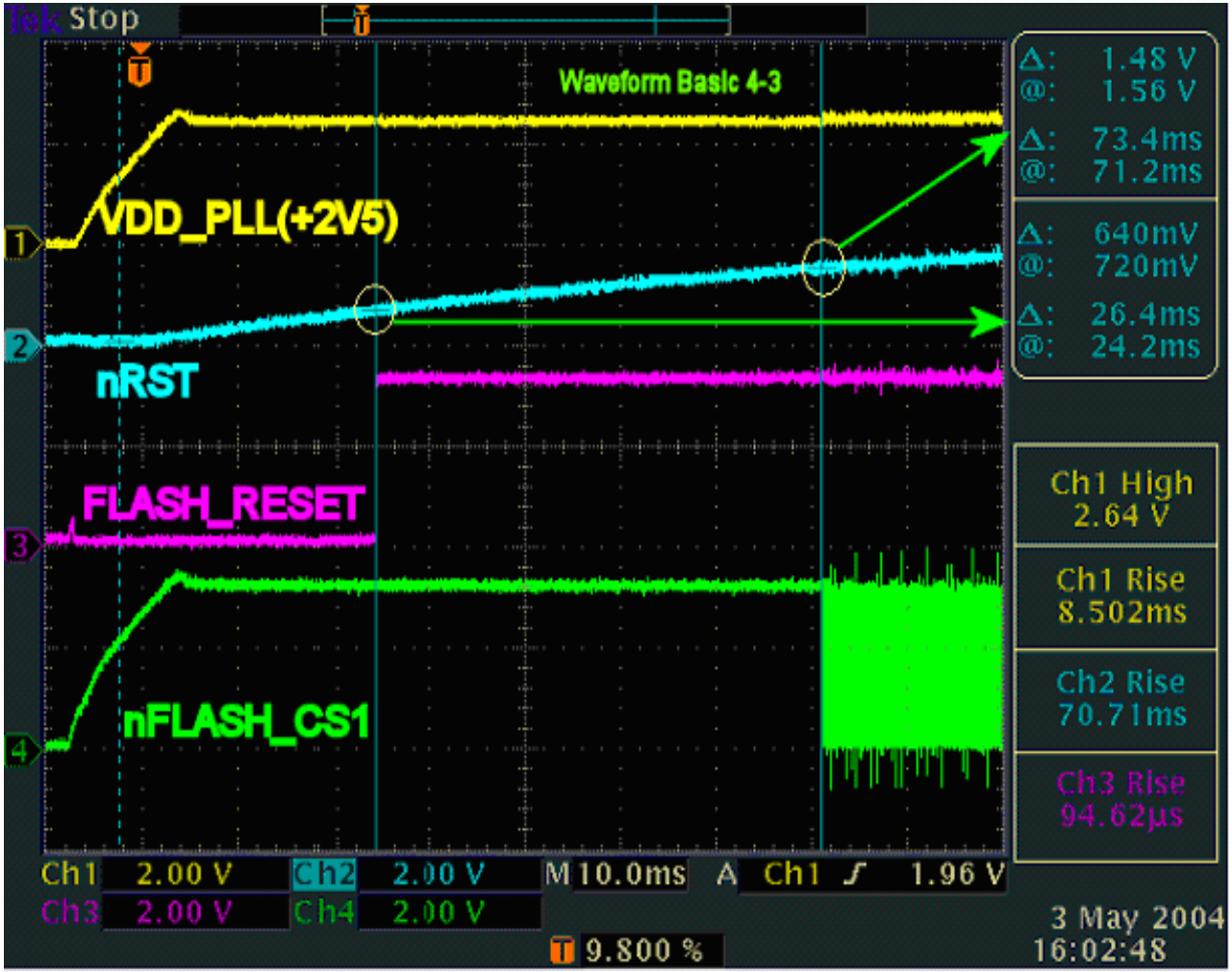

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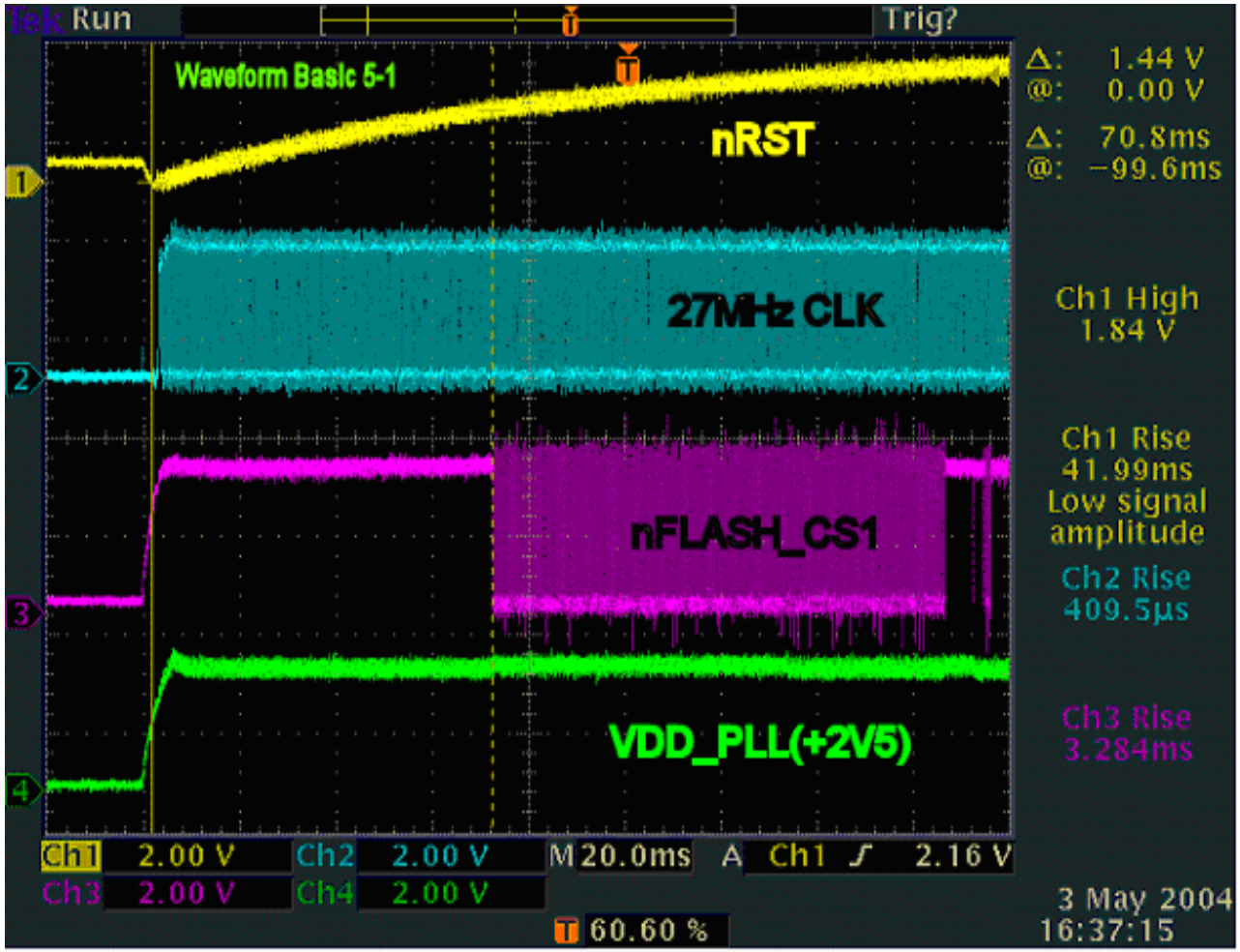

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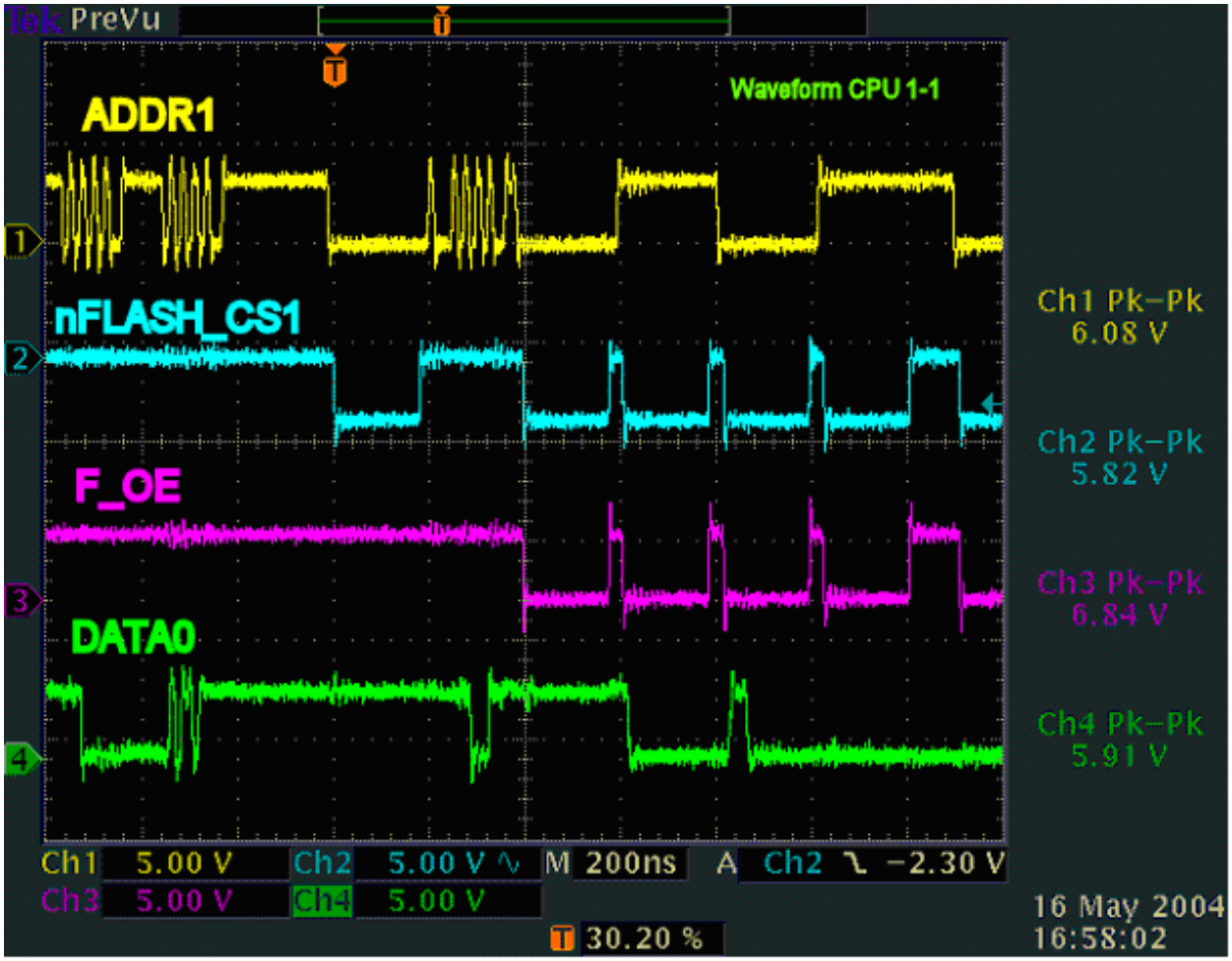

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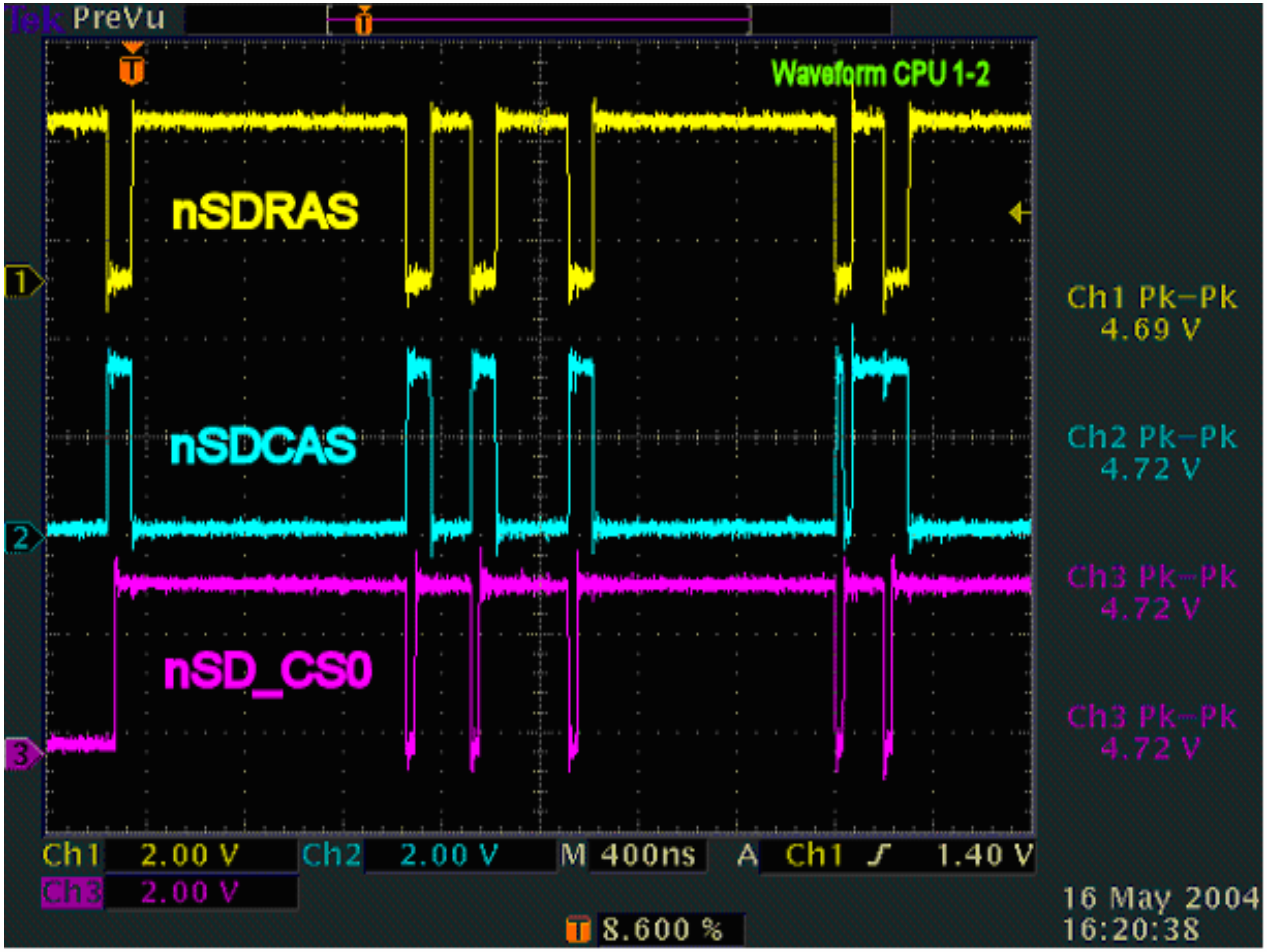

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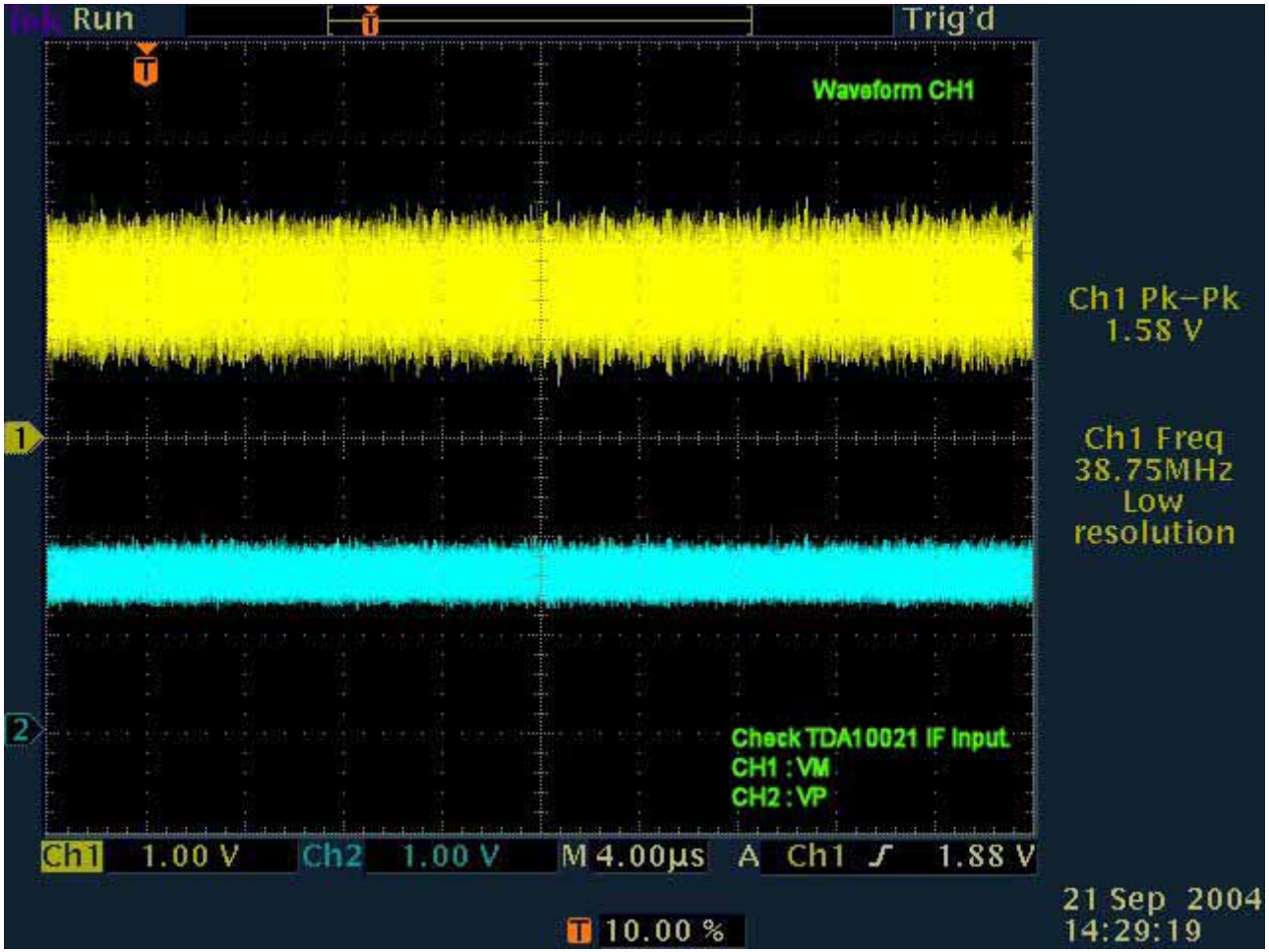

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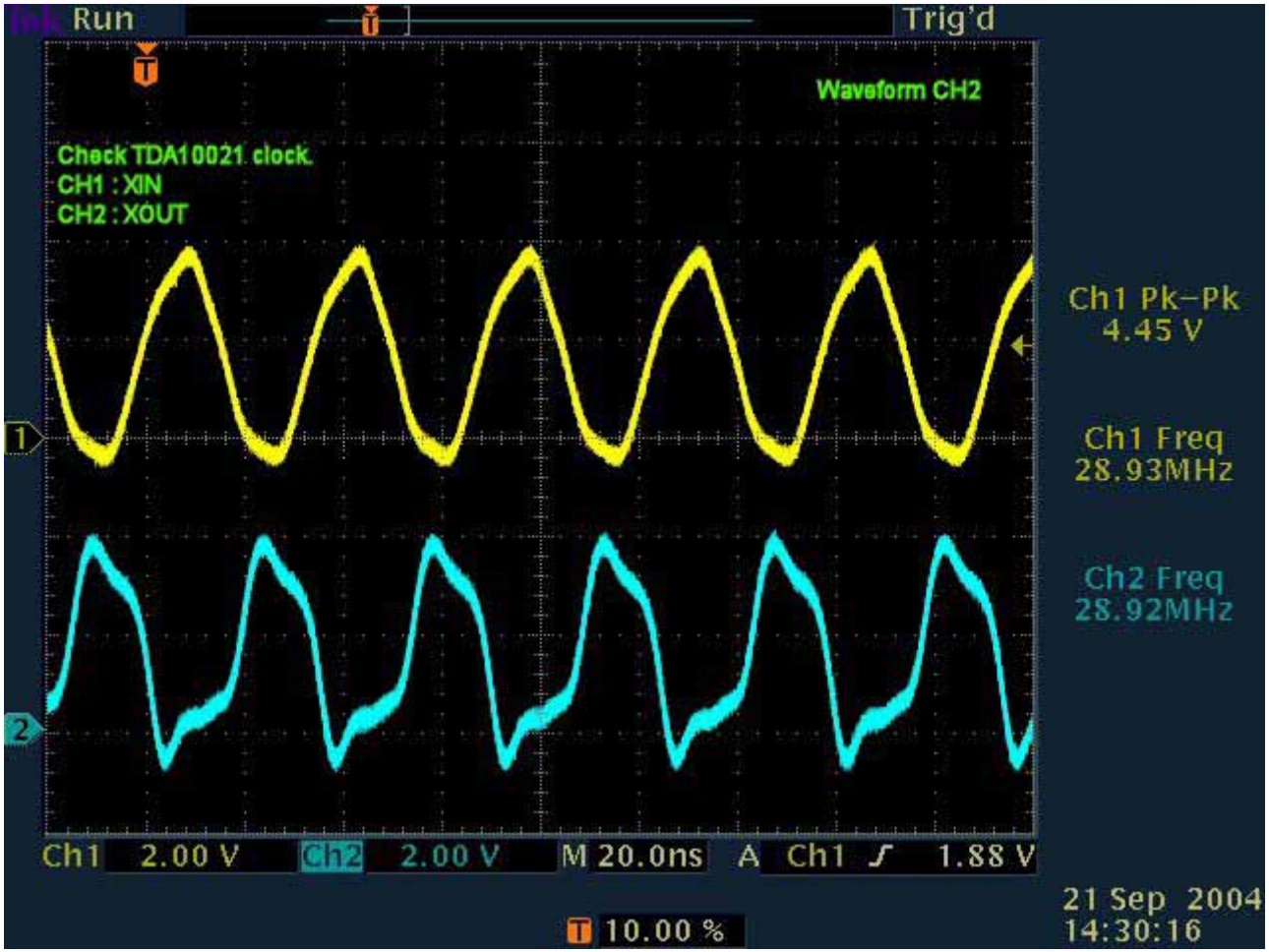

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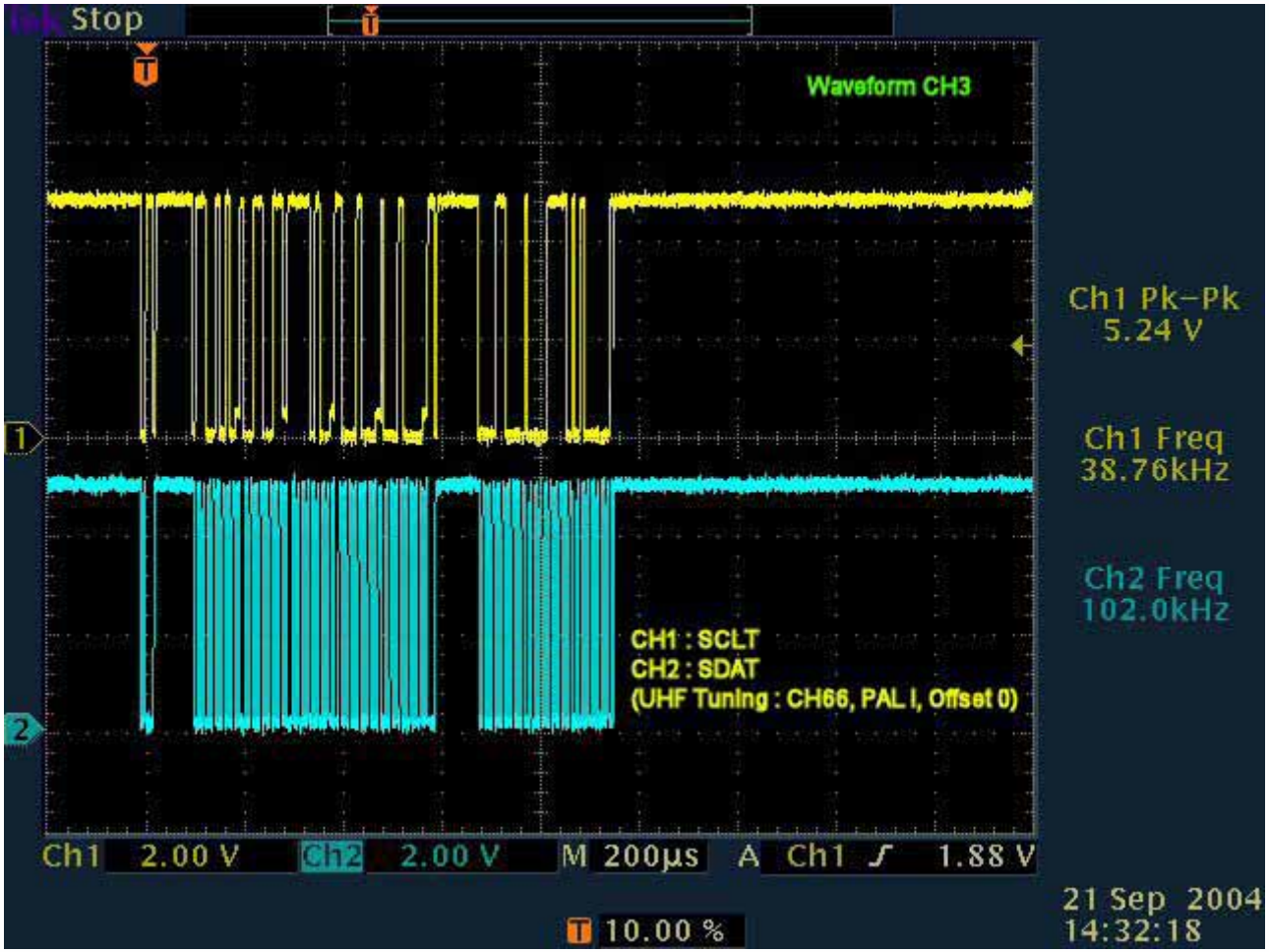

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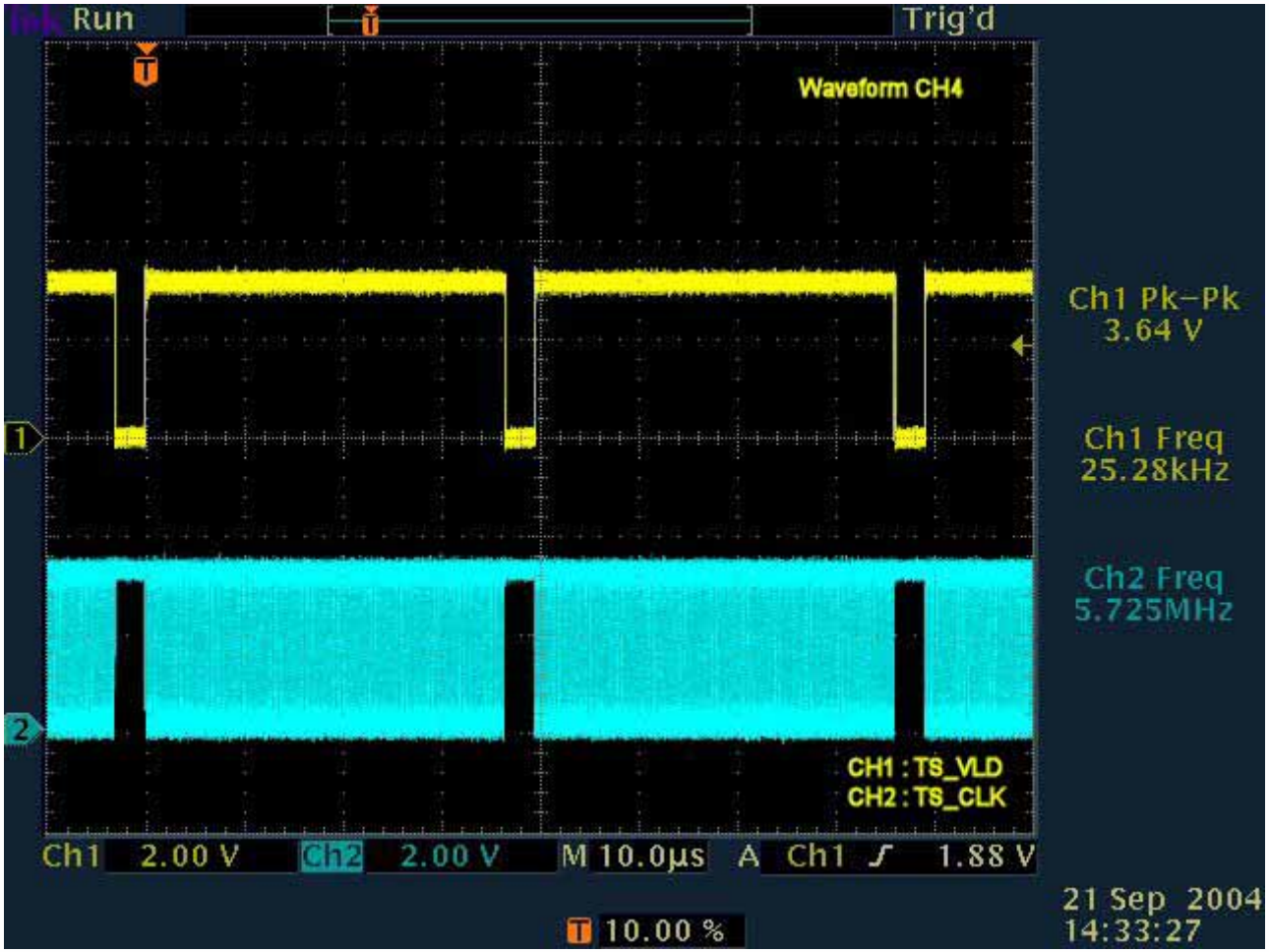

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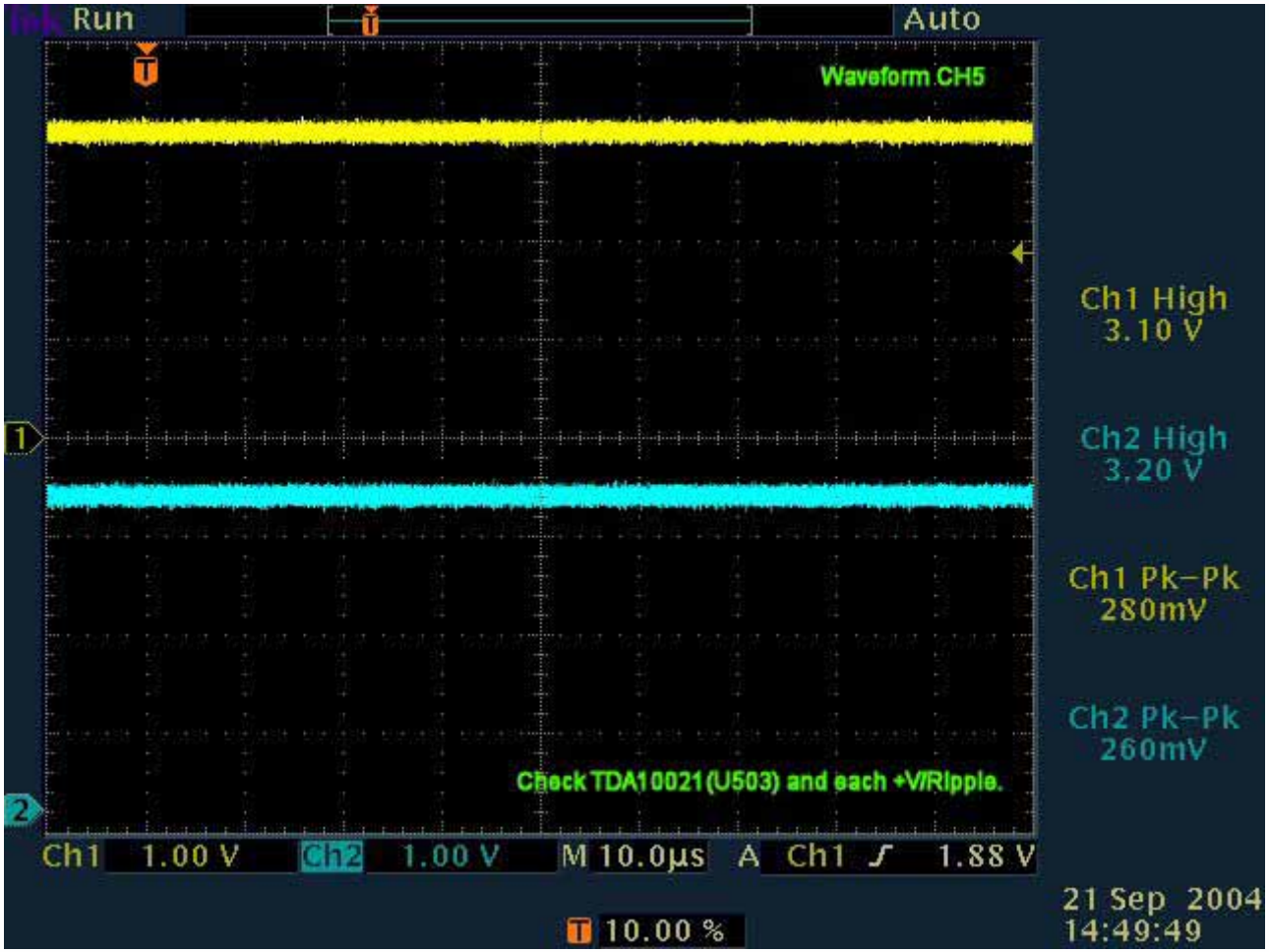

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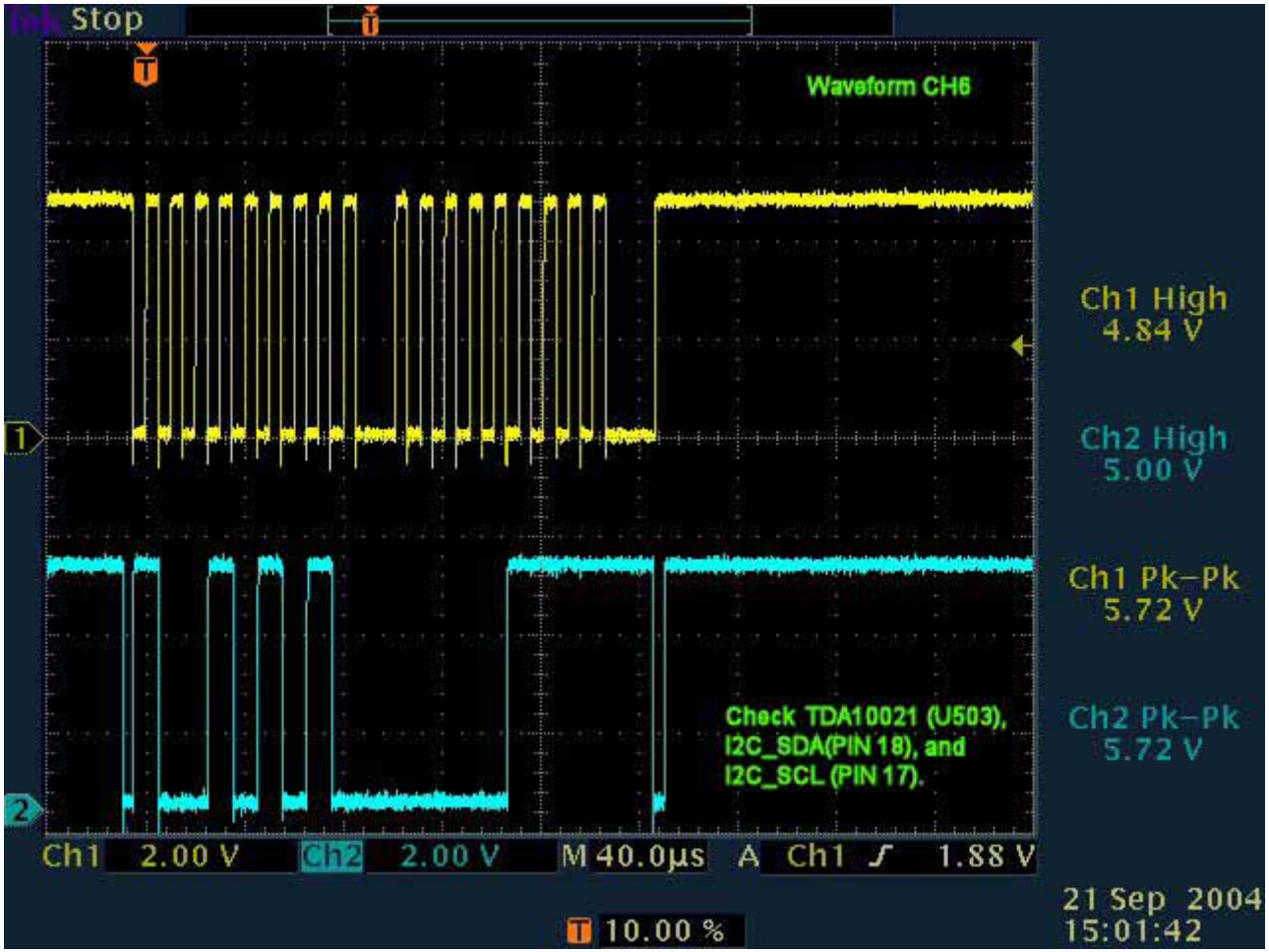

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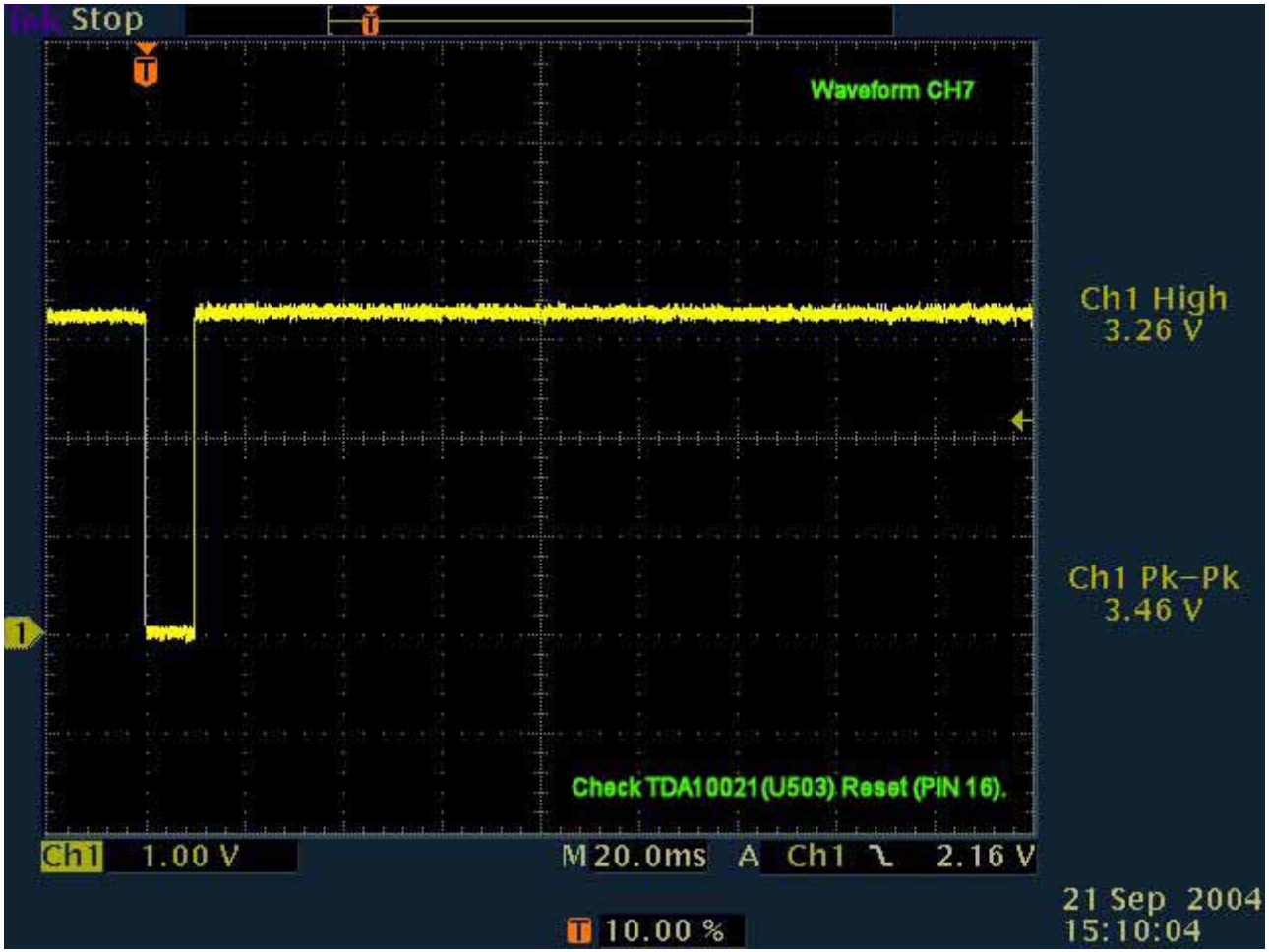

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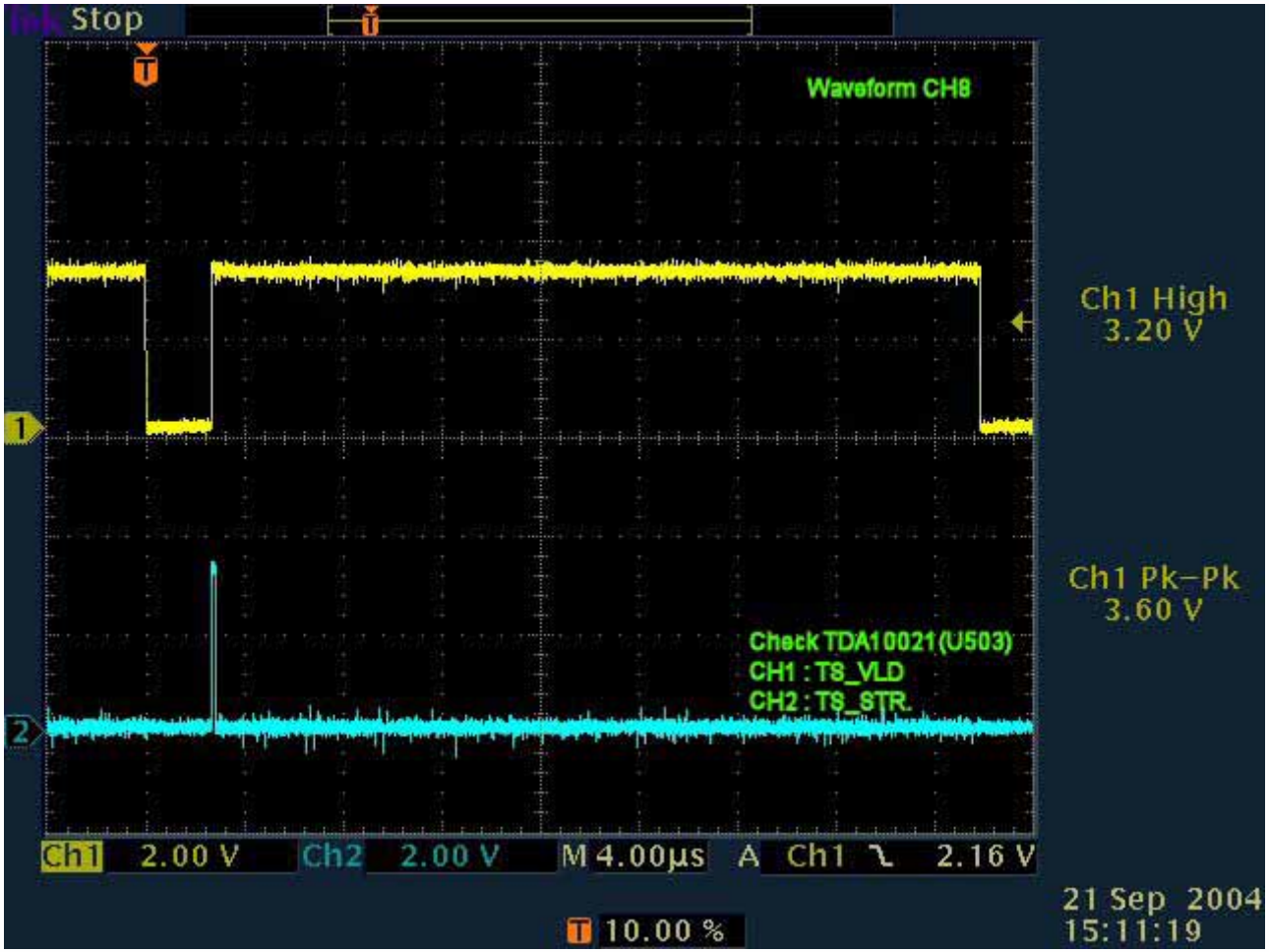

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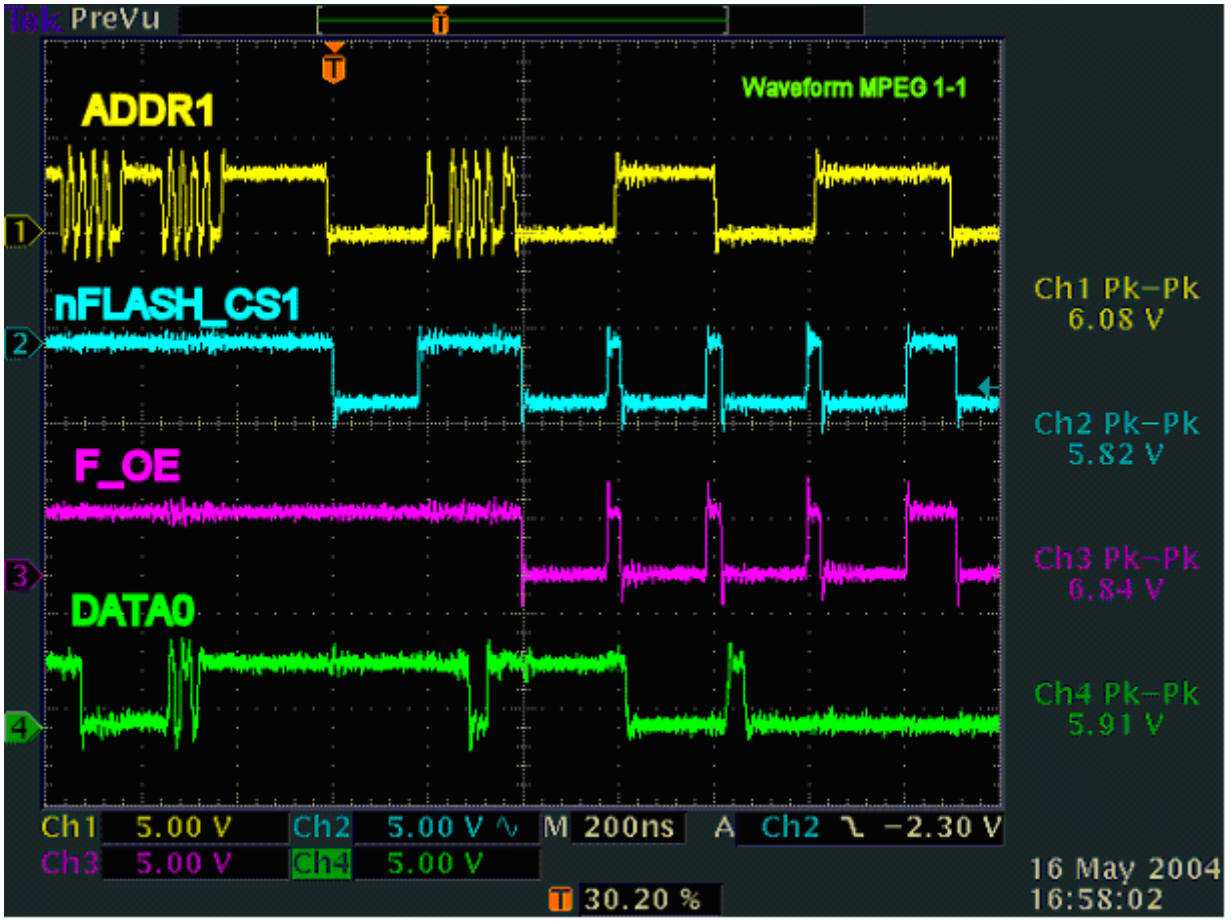

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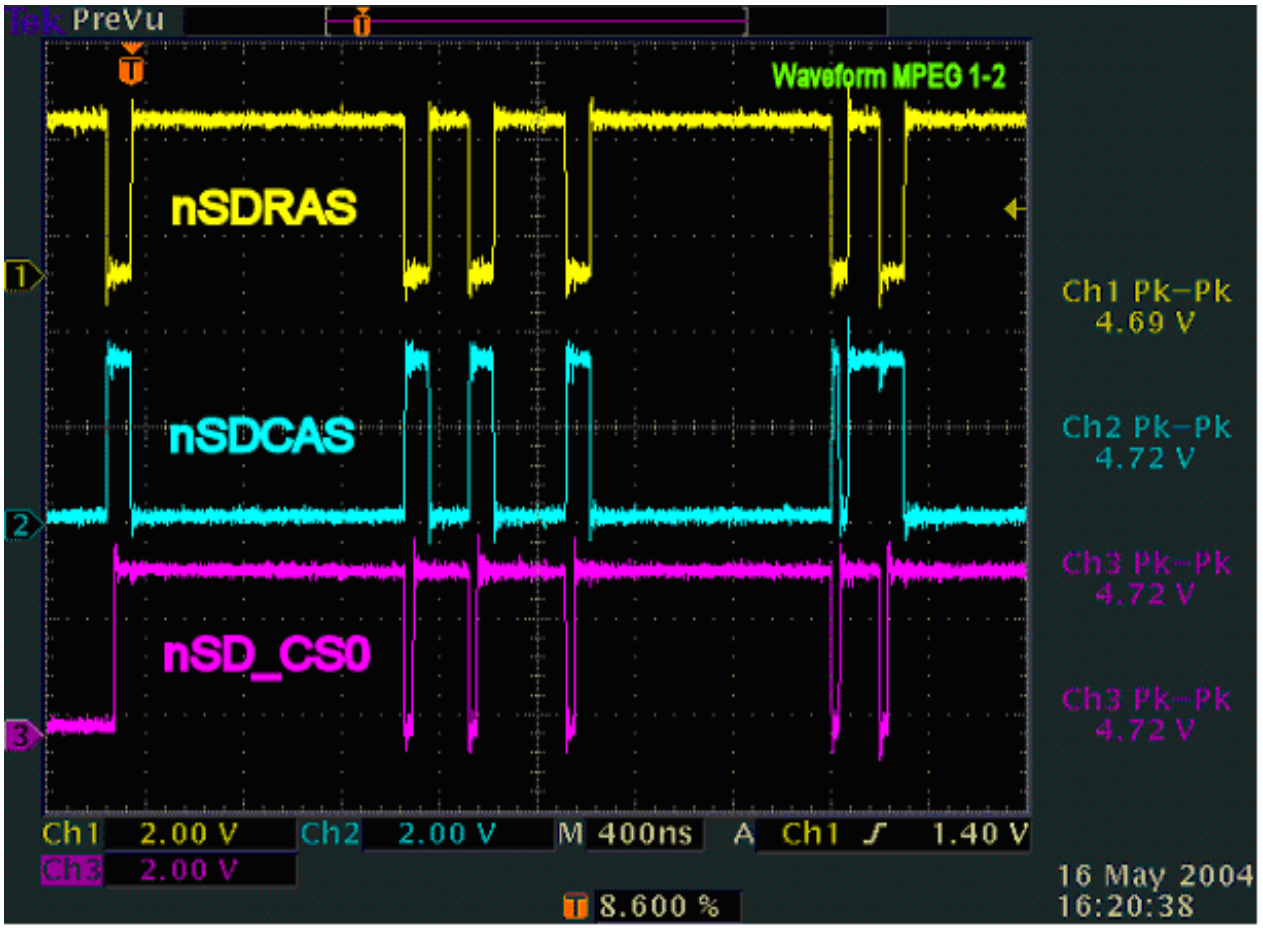

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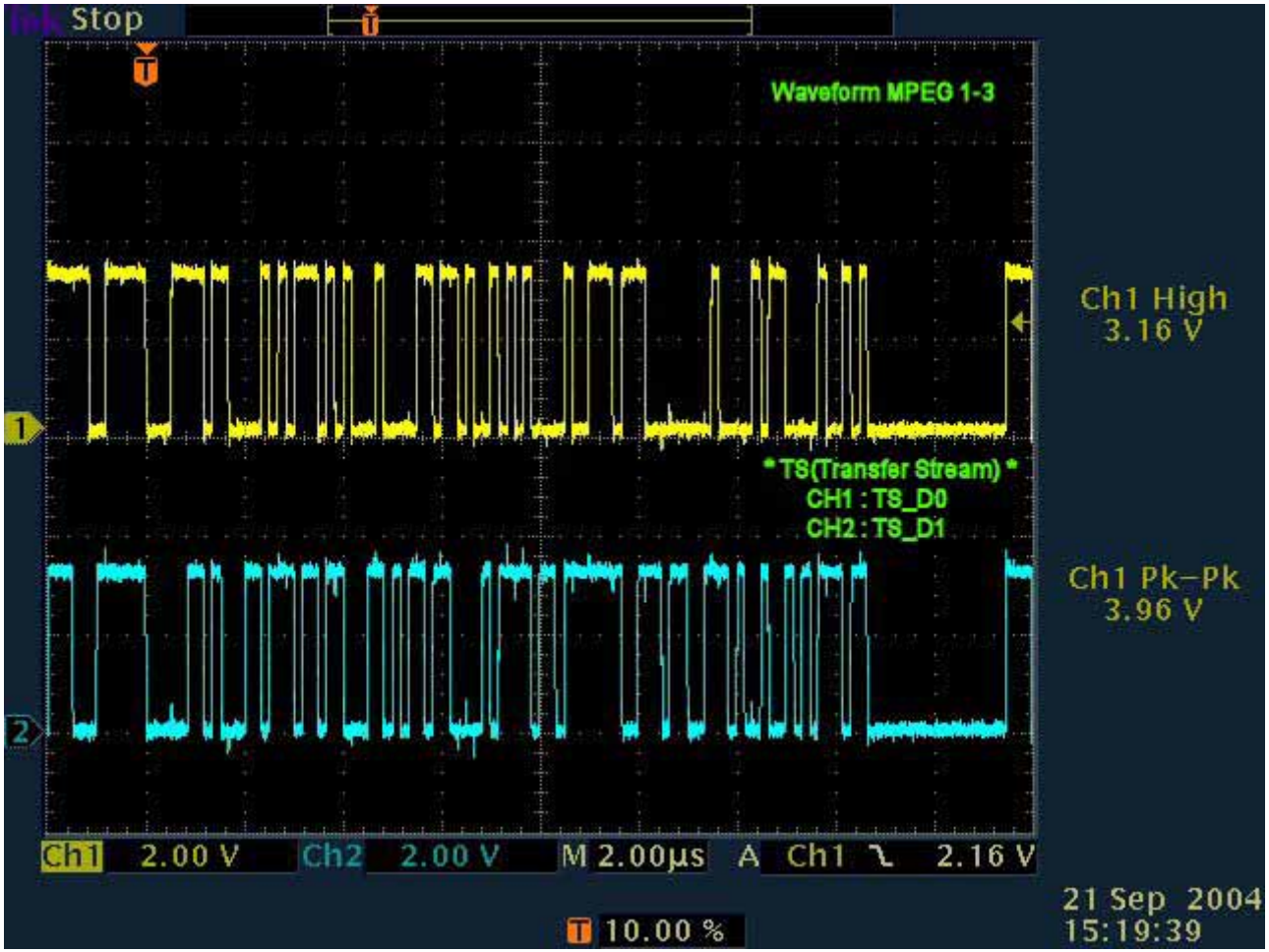

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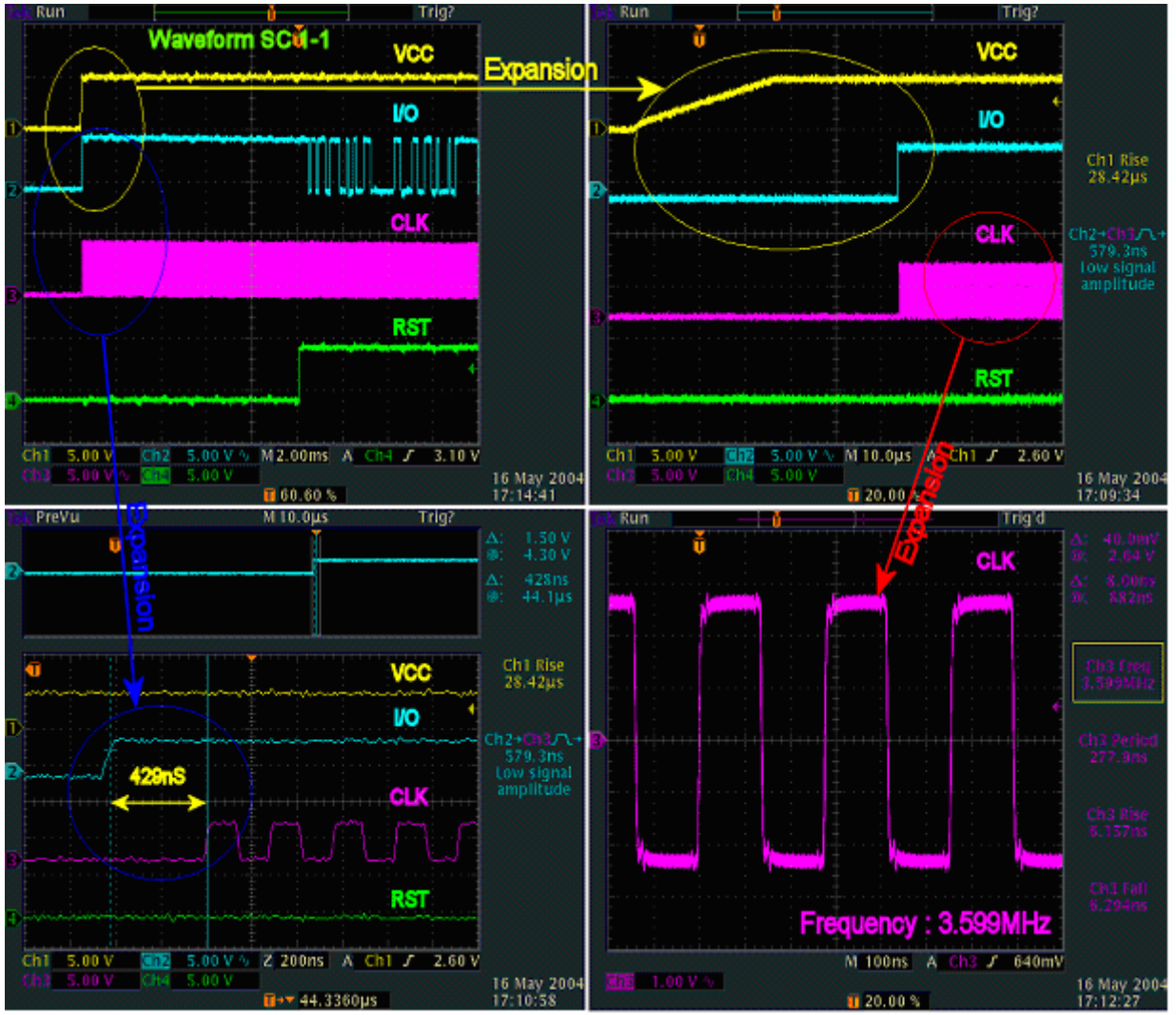

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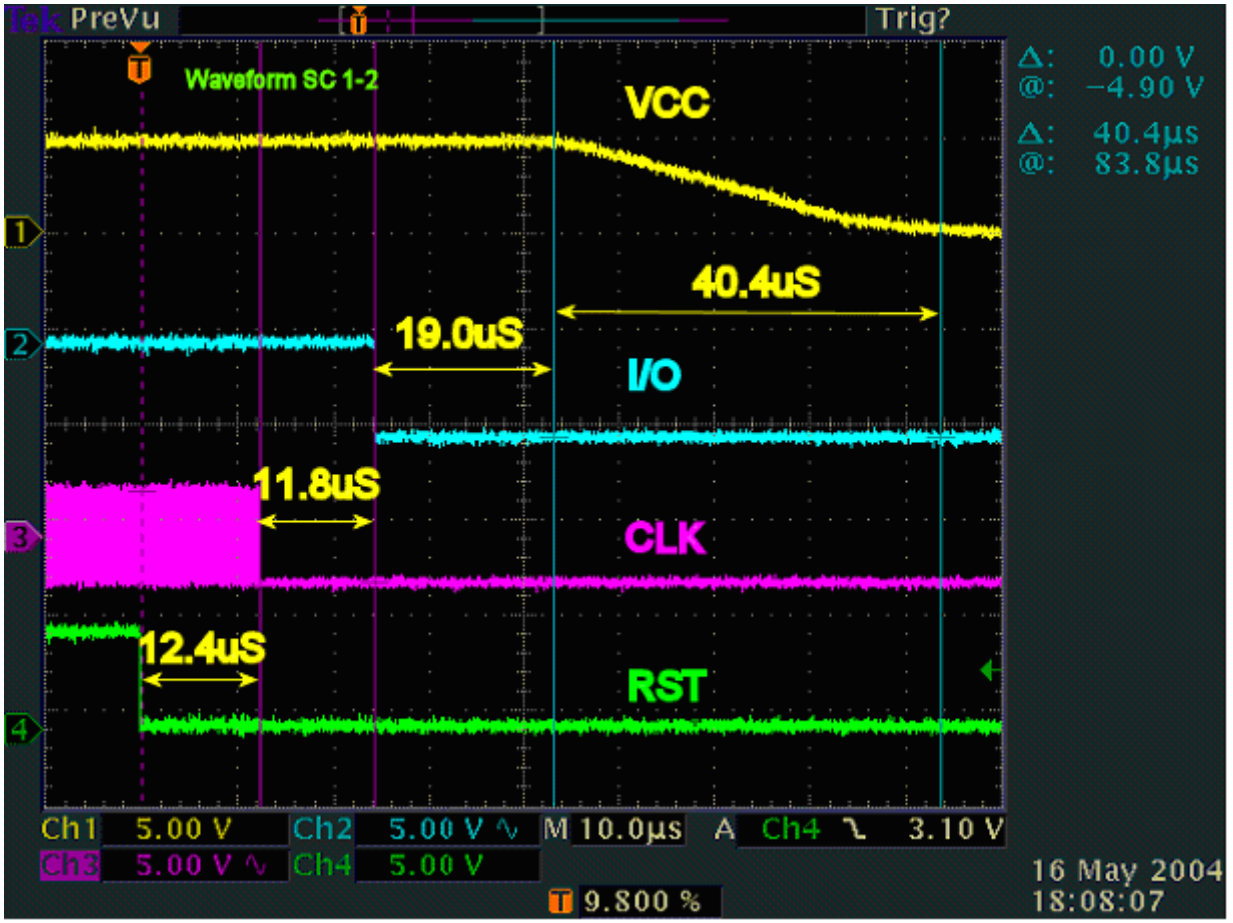

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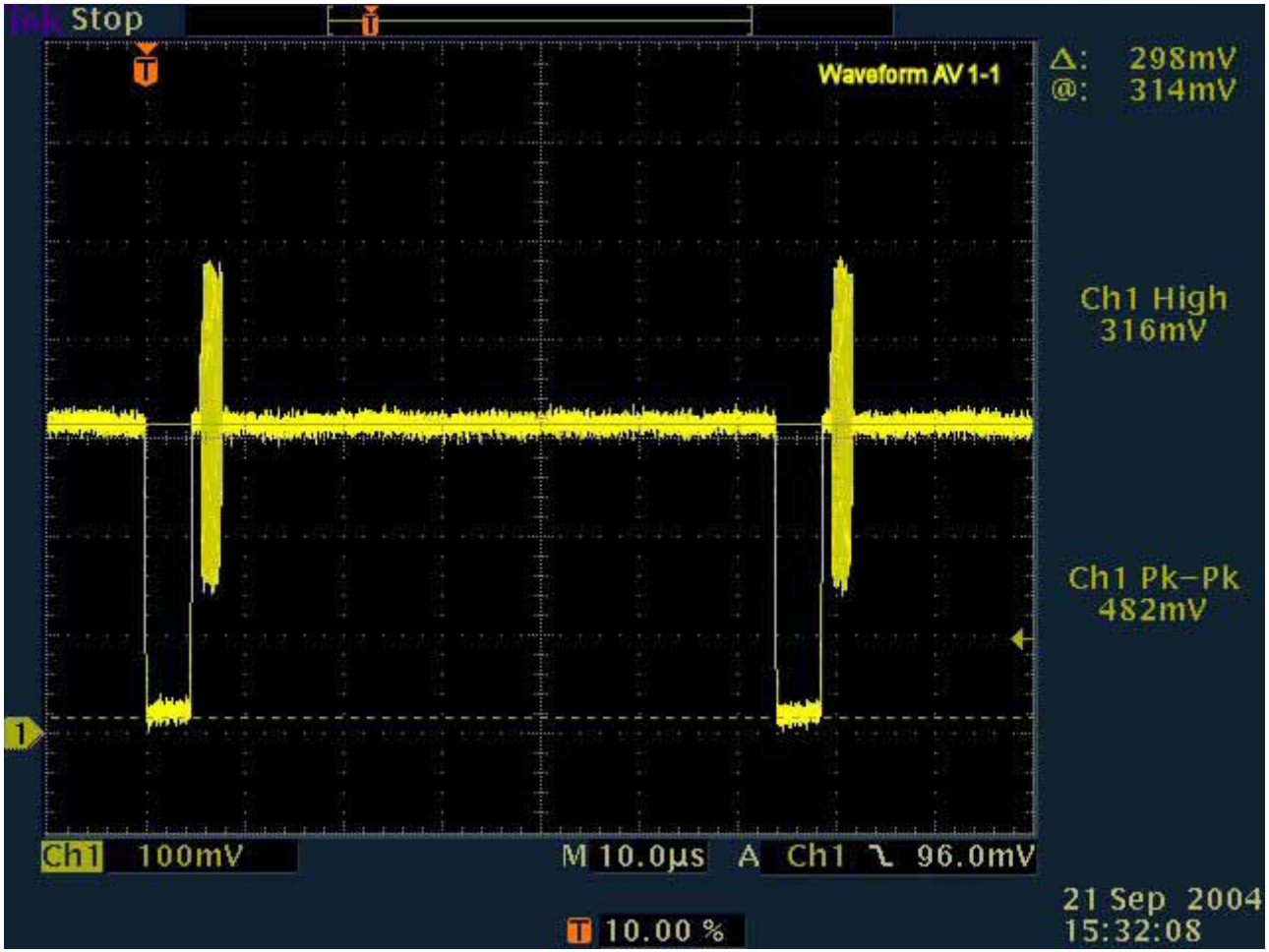

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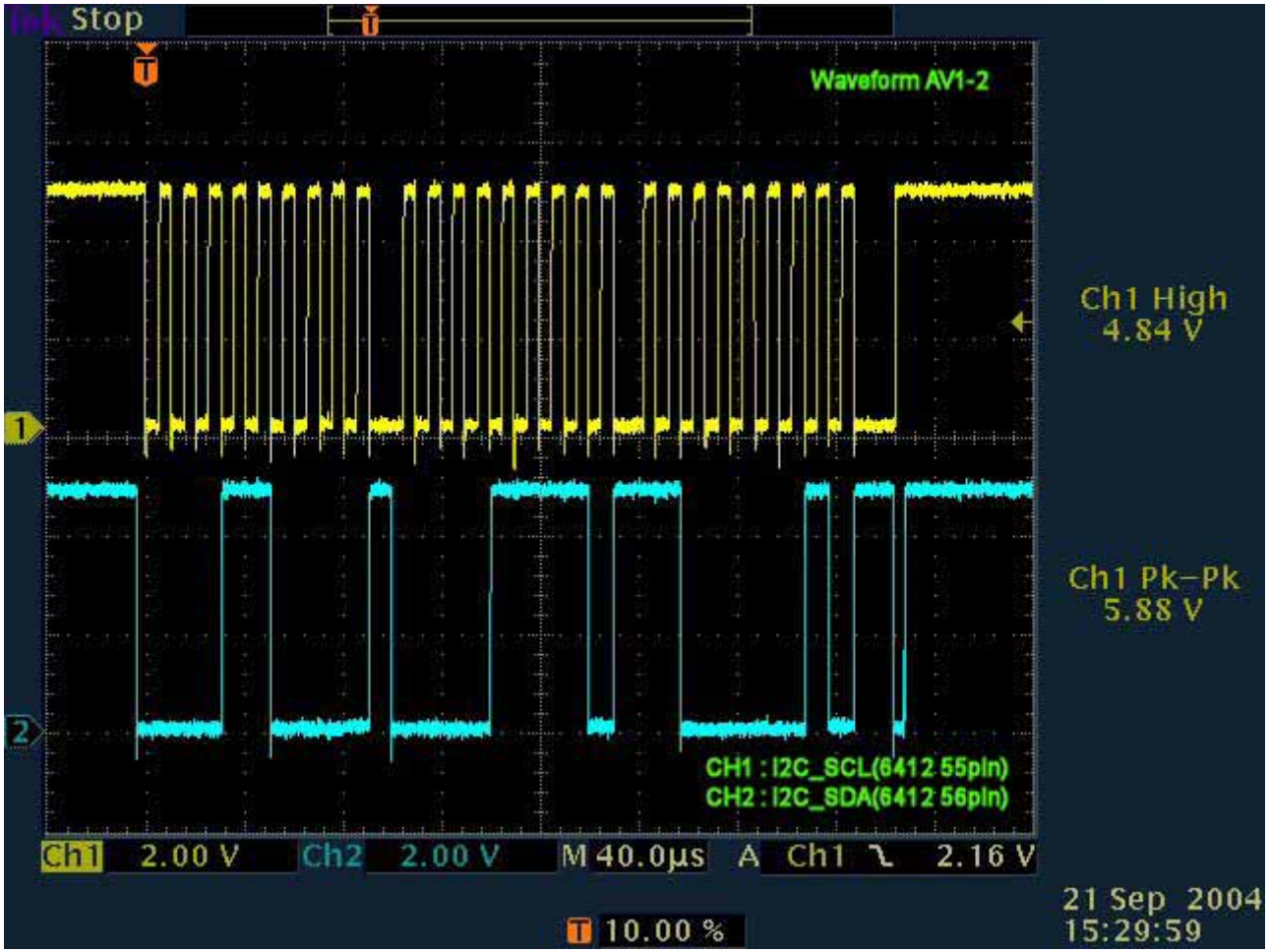

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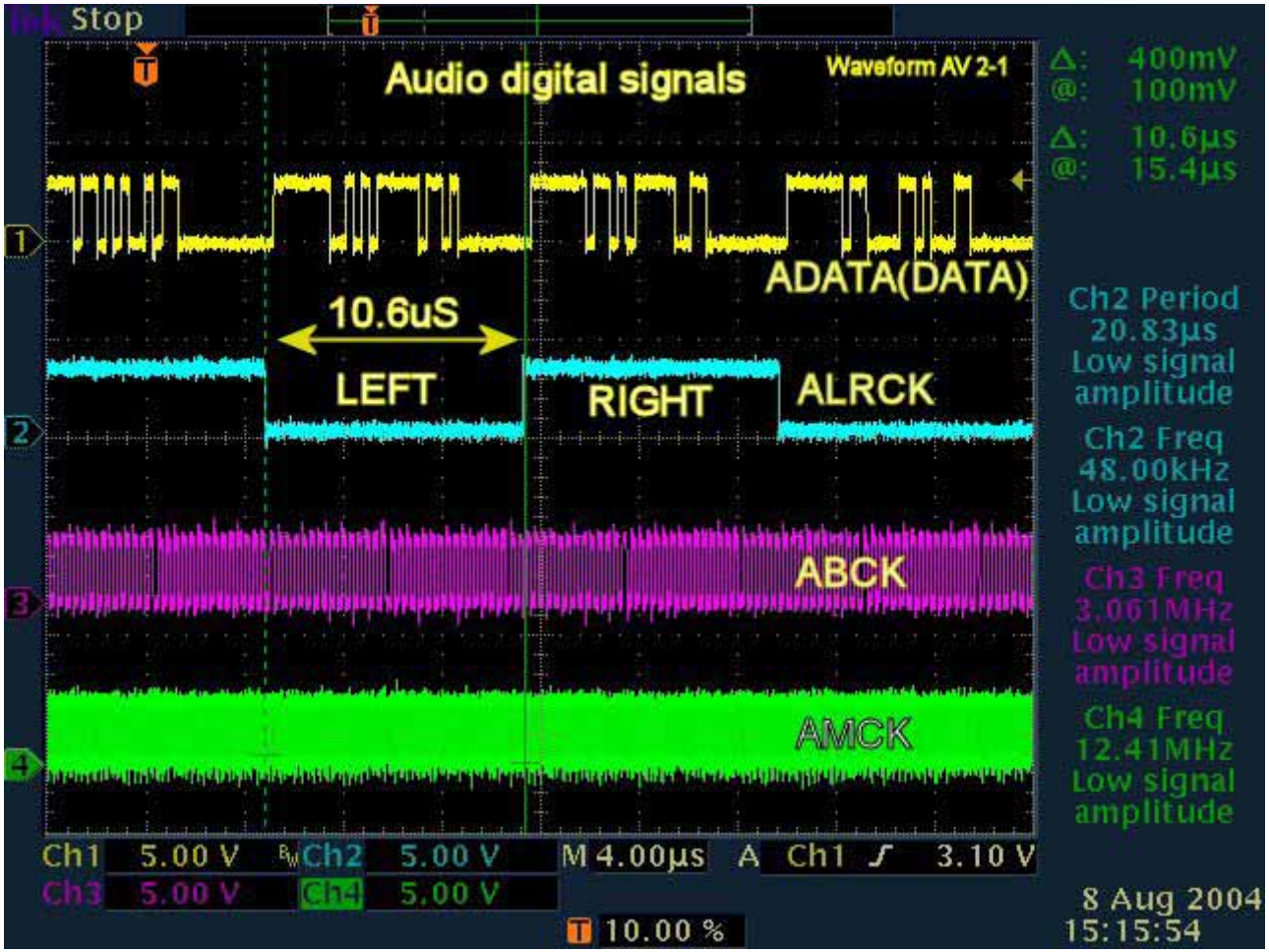

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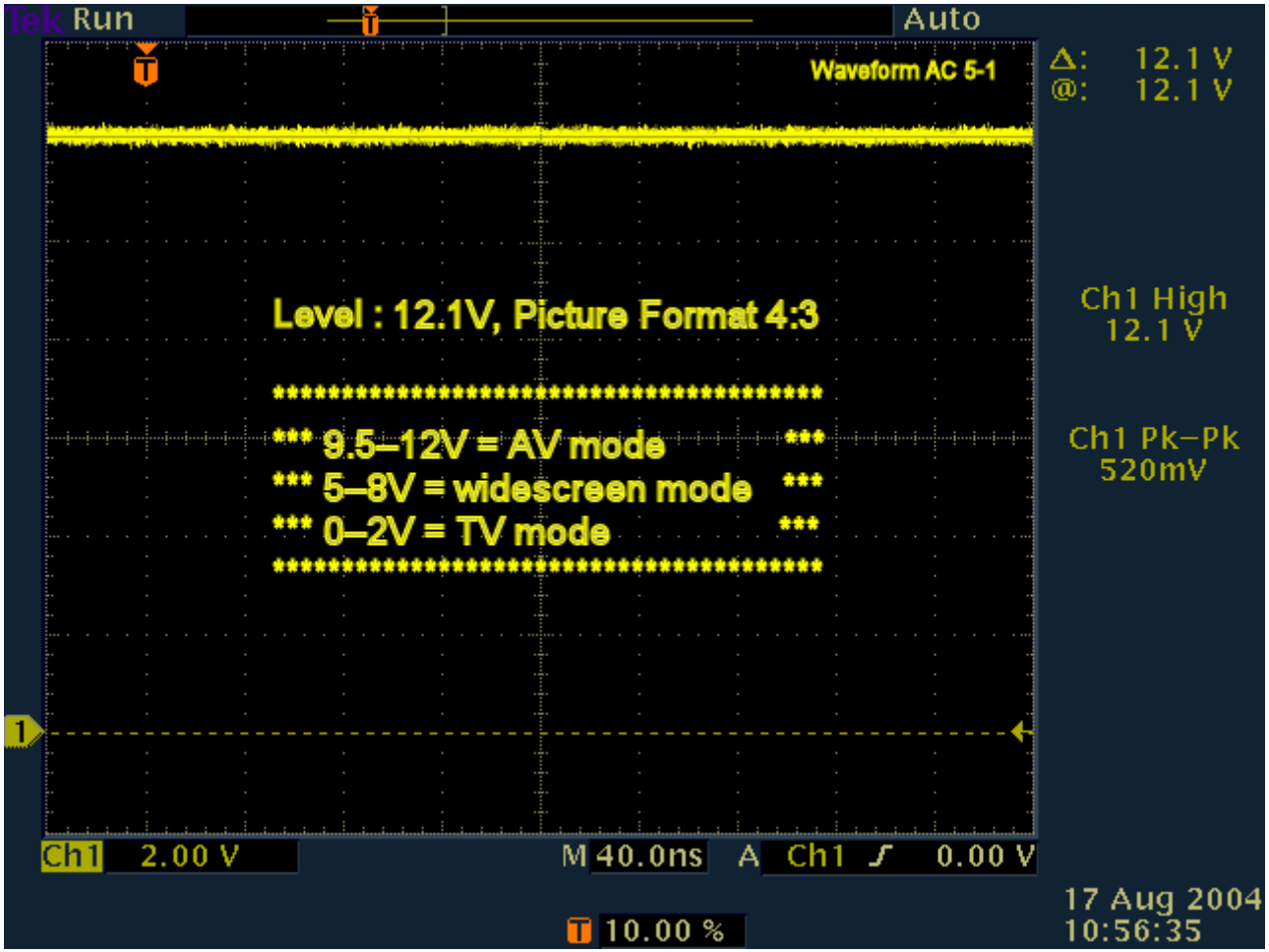

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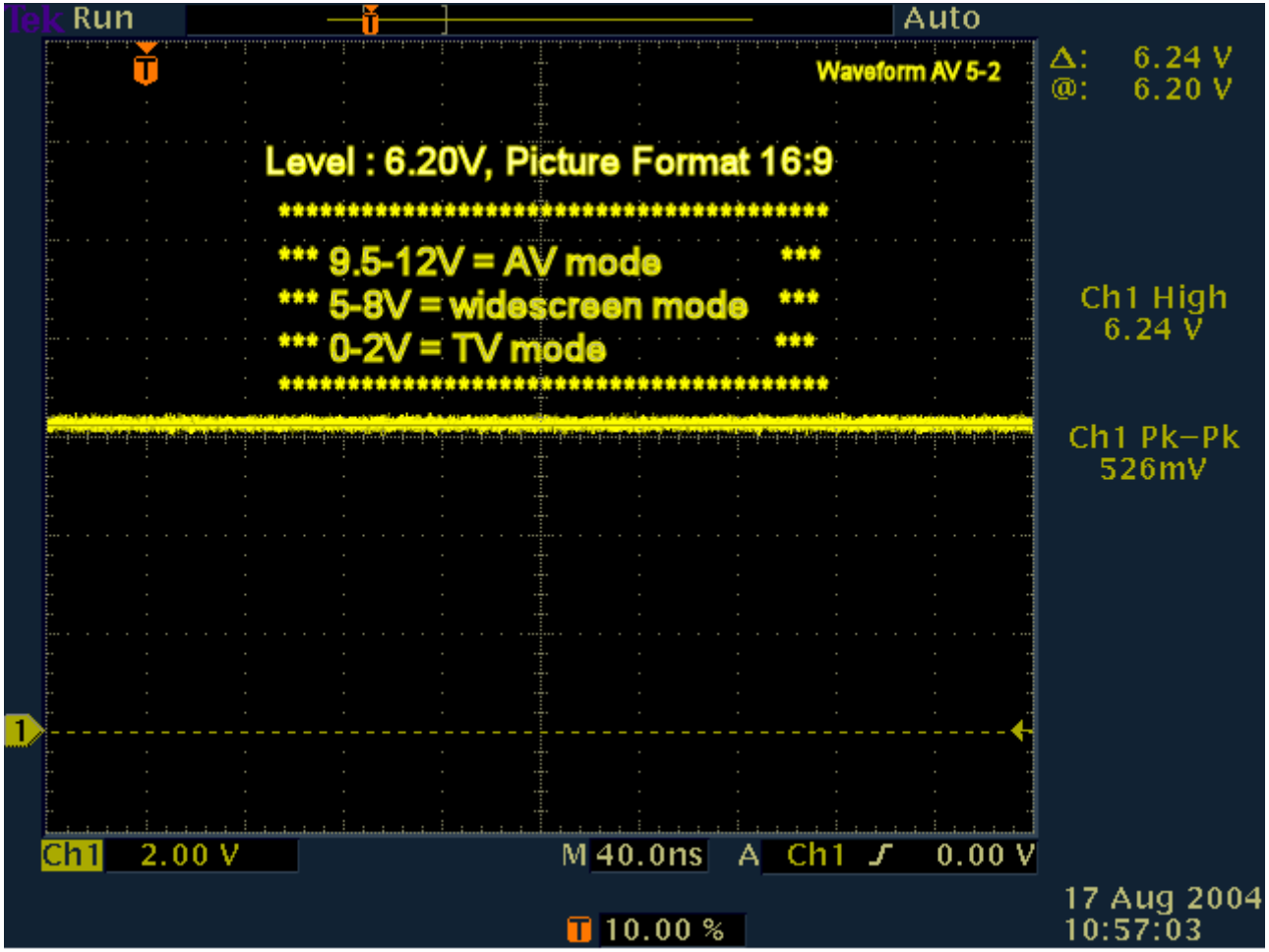
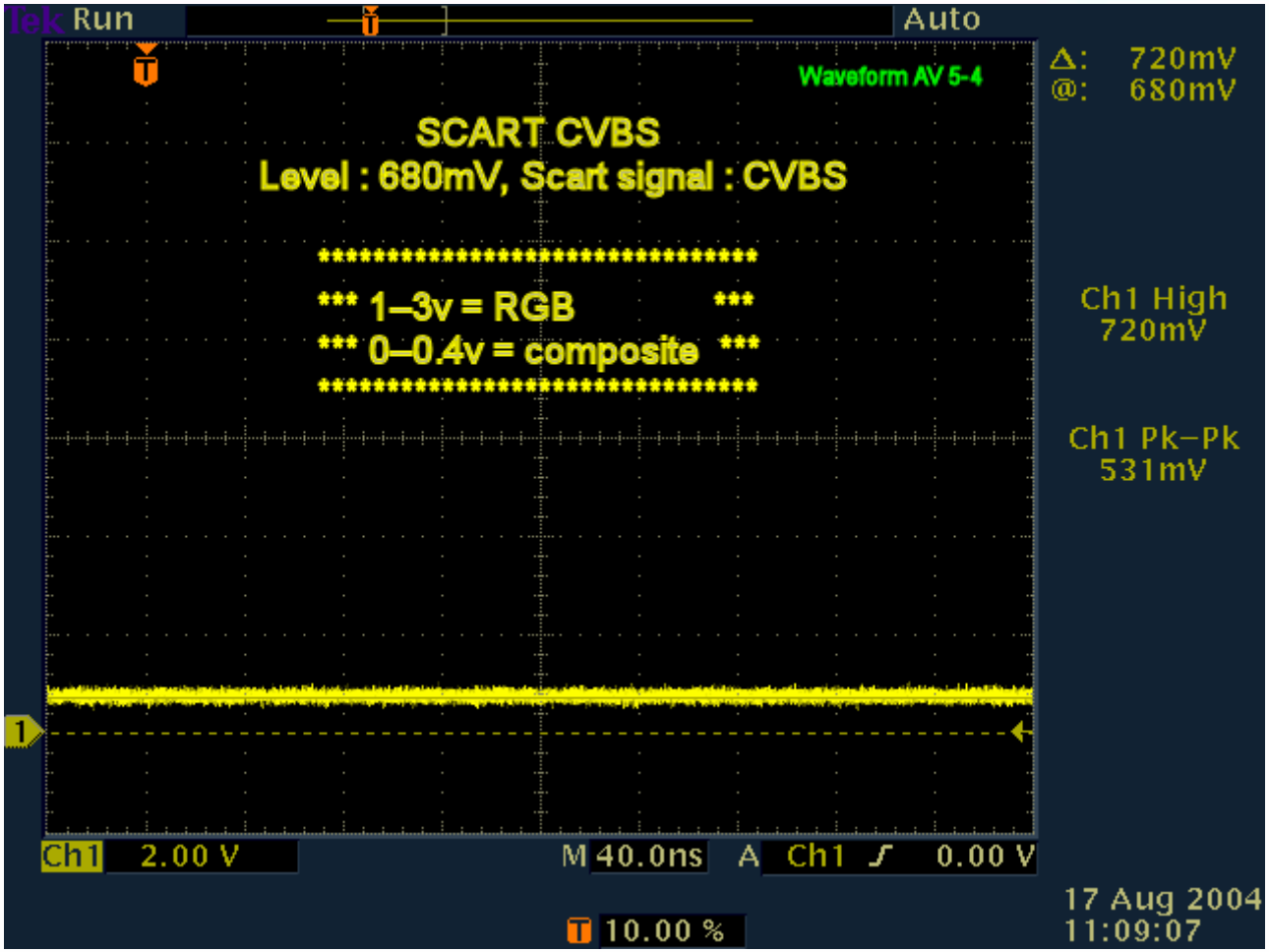
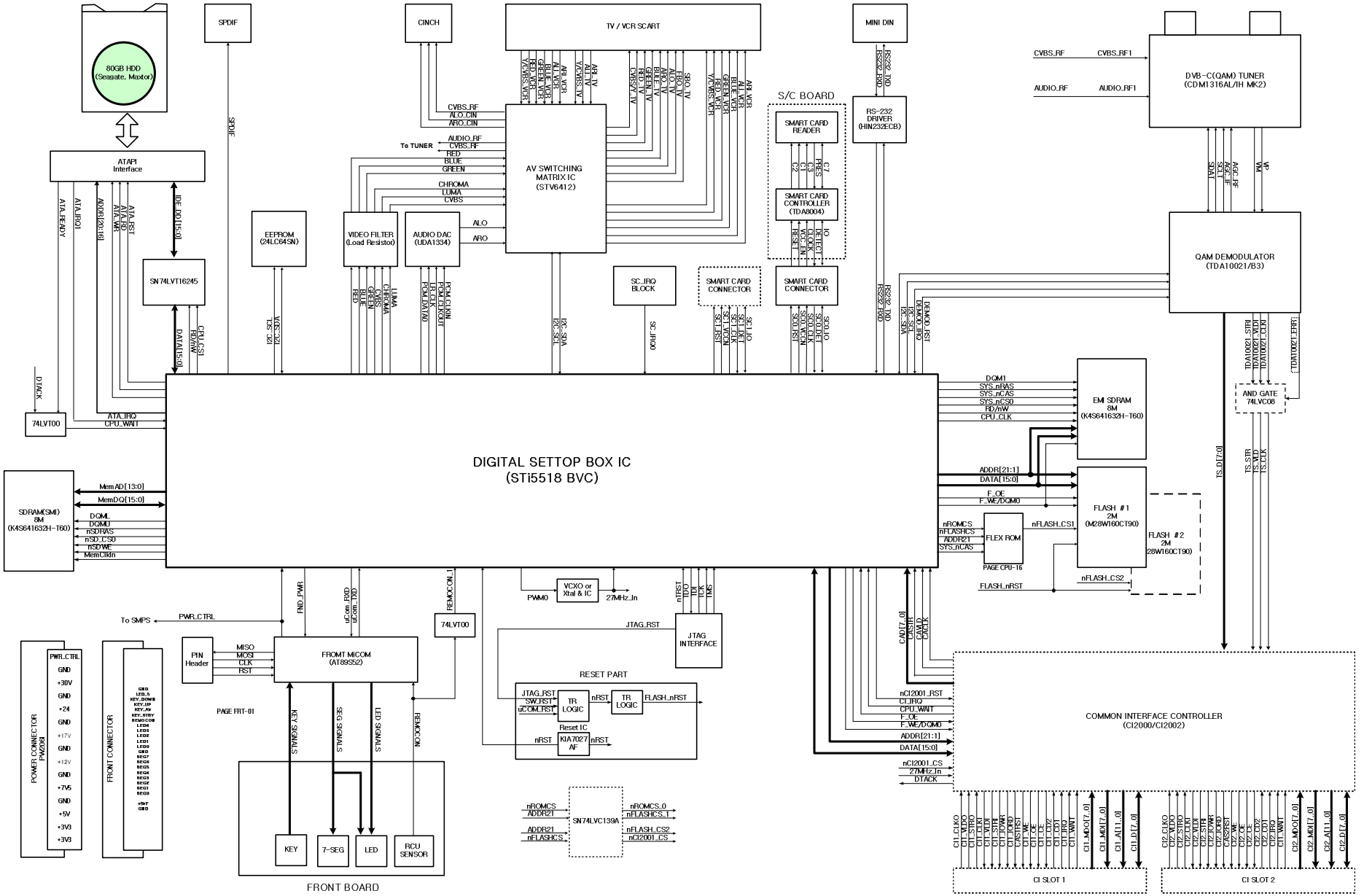


CXC-2000PVR WAVEFORMS

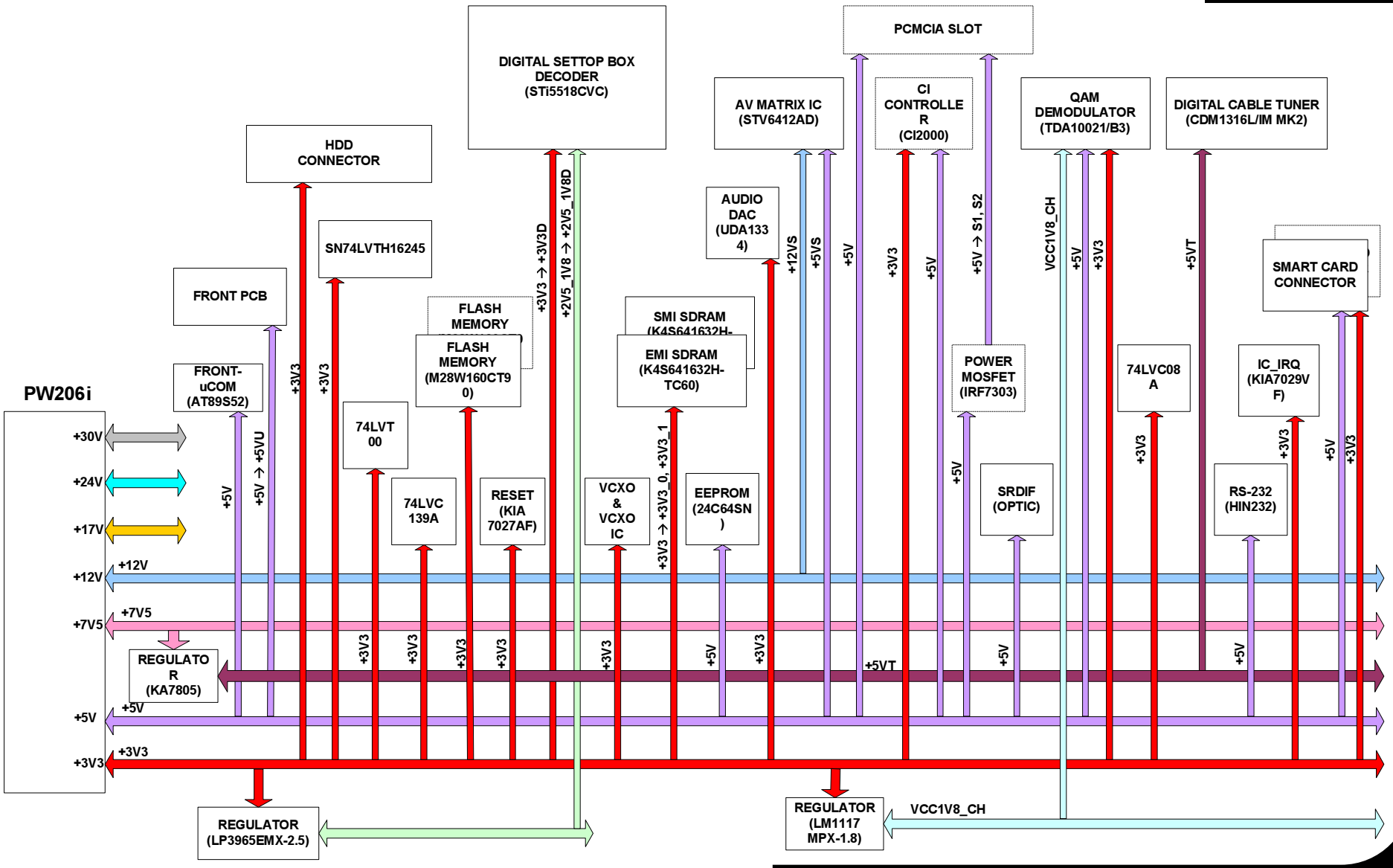
CXC-2000PVR WAVEFORMS



CXC-2000PVR Block Diagram (040707122)



CXC-2000PVR Power Block Diagram(04/07/22)



Part Number	Value	Description	Quantity	Part Reference	Manufacturer	Manufacturer Part Number	Other
	Ass`y CPU B/d						
00001-0022	TS80C52X2	IC MICOM TS80C52X2/PROGRAMED/QFP44PIN	1	U21	ATMEL	TS80C52X2	자삽/SMD
00004-0030	K4S641632H-TC60	IC SD-RAM K4S641632H-TC60/TSOPII/54P	1	U390	SAMSUNG	K4S641632H-TC60/TSOPII/54P	자삽/SMD
00004-0032	K4S281632F-TC75	IC SD-RAM K4S281632F-TC75/TSOP 54P	1	U371	삼성전자(SAMSUNG)	K4S281632F-TC75	자삽/SMD
00007-0012	24LC64T-I/SN	IC EEPROM 24LC64T-I/SN 8P	1	U360	MICROCHIP	IC EEPROM 24LC64T-I/SN 8P	자삽/SMD
00009-0067	LM1117S-1.8	IC REGULATOR LM1117S-1.8/SOT-223 4P	1	U502	HTC	LM1117S-1.8/SOT-223 4P	자삽/SMD
00009-1005	KA7805/TO-220	IC REGULATOR KA7805/TO-220	1	U501	FAIR CHILD	KA7805/PI +5V/1A/TO-220	수삽/BULK
00010-0062	TDA10021/B3	IC QAM DECODER TDA10021HT/B3	1	U503	PHILIPS	TDA10021HT/B3	자삽/SMD
00010-0111	STI5518BQC	IC DECODER STI5518BQC/LQFP 208P	1	U182	STMicroelectronics	STI5518BQC(D1S)	자삽/SMD
00012-0027	ELM7S04	IC CMOS 1-INPUT INVERTER ELM7S04	1	U571	ELM	ELM7S04	자삽/SMD
00012-0063	SN74LVTH16245	IC CMOS SN74LVT16245ADGGR/SOP48	1	U700	TI	SN74LVT16245ADGGR	자삽/SMD
00012-0076	74LVT00	IC CMOS 74LVT00/SOP	1	U703	PHILIPS	74LVT00	자삽/SMD
00013-0042	TE28F160C3TD70	IC FLASH MEMORY TE28F160C3TD70	1	U330	INTEL	M28W160CT90N6	자삽/SMD
00014-0013	UDA1334BTS	IC DAC UDA1334BTS/SSOP16	1	U520	PHILIPS	UDA1334BTS	자삽/SMD
00017-0009	HIN232ECB	IC RS232 DRIVER HIN232ECB	1	U600	인터실(INTERSIL)	HIN232ECB	자삽/SMD
00099-0052	KIA7027AF	IC VOLTAGE DETECTOR KIA7027AF/SOT-89	1	U300	KEC	KIA7027F	자삽/SMD
00099-0059	KIA7029AF	IC VOLTAGE DETECTOR KIA7029AF/SOT-89	1	U570	KEC	KIA7029F	자삽/SMD
00099-0060	STV6412AD	IC SCART CONTROL STV6412AD	1	U430	SGS THOMSON	STV6412AD	자삽/SMD
00099-0071	KA5SDKAS01TSN	IC SINGLE CHIP VCXO KA5SDKAS01TSN	1	U311	KAWASAKI	KA5SDKAS01TSN	자삽/SMD
00106-0002	104p/X7R/2012/25V	CAP MULTI CERAMIC-CHIP 0.1uF/104p/25V/X7R/2012	4	C444 C528 C532 C533	삼성전기(SAMSUNG)	CL21B104KANC	자삽/SMD
00106-0025	104p/2012	CAP MULTI CERAMIC-CHIP 0.1uF/104p/50V/Y5V/2012	3	C2 C4 C14	PHILIPS	0805Y5V104Z50	자삽/SMD
00106-0026	224p/2012	CAP MULTI CERAMIC-CHIP 0.22uF/224p/50V/Y5V/2012	6	C437 C438 C439 C440 C441 C442	PHILIPS	0805Y5V224Z50	자삽/SMD
00106-0042	104p/25V	CAP MULTI CERAMIC-CHIP 0.1uF/104p/25V/Y5V/1608	82	C6 C8 C10 C12 C15 C25 C36 C37 C52 C241 C242 C243 C244 C245 C246 C247 C249 C250 C251 C252 C253 C254 C255 C256 C260 C263 C265 C267 C300 C310 C314 C320 C330 C331 C332 C350 C360 C370 C371 C372 C373 C374 C375 C390 C391 C392 C393 C394 C431 C433 C435 C436 C450 C502 C505 C509 C512 C515 C516 C525 C527 C538 C539 C570 C571 C572 C576 C580 C581 C585 C586 C588 C590 C591 C592 C593 C598 C700 C702 C703 C704 C707	PHILIPS	0603Y5V104Z25	자삽/SMD
00106-0051	104p/X7R	MLCC 0.1uF/104p/25V/X7R/1608	10	C517 C518 C519 C530 C531 C535 C536 C537 C594 C595	삼성전기(SAMSUNG)	CL10B104KANB	자삽/SMD
00106-0052	102p	CAP MULTI CERAMIC-CHIP 0.001uF/102p/25V/X7R/1608	6	C463 C464 C542 C543 C551 C552	PHILIPS	0603X7R102K25	자삽/SMD
00106-0057	471p	CAP MULTI CERAMIC-CHIP 470pF/471p/25V/COG/1608	2	C601 C602	삼성전기(SAMSUNG)	CL10COG471JANC	자삽/SMD
00106-0076	330p	CAP MULTI CERAMIC-CHIP 33pF/330p/25V/COG/1608	2	C21 C22	PHILIPS	0603COG330J25	자삽/SMD
00106-0081	105p/2012	CAP MULTI CERAMIC-CHIP 1uF/105p/16V/Y5V/2012	9	C548 C557 C558 C559 C560 C600 C603 C605 C606	PHILIPS	0805Y5V105Z16	자삽/SMD
00106-0100	680p	CAP MULTI CERAMIC-CHIP 68pF/680P/25V/COG/1608	3	C506 C507 C534	PHILIPS	0603COG680J25	자삽/SMD
00106-0104	681p	CAP MULTI CERAMIC-CHIP 680pF/681p/25V/X7R/1608	4	C540 C541 C549 C550	삼성전기(SAMSUNG)	CL10B681KBNB	자삽/SMD
00106-0127	510p	MLCC 51pF/510p/25V/COG/1608	2	C596 C597	PHILIPS	0603COG510J25	자삽/SMD
00106-0131	105p	MLCC 1uF/105/16V/Y5V/1608	1	C38	PHILIPS	0603Y5V105J16	자삽/SMD
00106-3022	5R6p	MLCC 5.6pF/50V/COG/1608	1	C313	삼성전기(SAMSUNG)	CL10C5R6CBNB	자삽/SMD
00107-0016	47uF/25V	CAP ELE 47uF/25V/-40~+85℃/Taping/Standard	1	C5	삼영(SAMYOUNG)	SMS1EVB470M	자삽/RADIAL
00107-0046	470uF/25V	CAP ELE 470uF/25V/-40~+85℃/Taping/Standard	1	C432	삼영(SAMYOUNG)	SMS1EVB471M	자삽/RADIAL
00107-0069	33uF/16V	CAP ELE 33uF/16V/-40~+85℃/Taping/Standard	1	C203	삼영(SAMYOUNG)	SMS1CVB330M	자삽/RADIAL
00107-1003	100uF/16V	CAP ELE 100uF/16V/-40~+85℃/Taping/Standard	6	C9 C11 C51 C240 C248 C446	삼성전기(SAMSUNG)	SSL1C101M0611	자삽/RADIAL
00107-1007	47uF/16V	CAP ELE 47uF/16V/-40~+85℃/Taping/Standard	3	C312 C514 C599	삼성전기(SAMSUNG)	SSL1C470M0511	자삽/RADIAL
00107-1015	1uF/50V	CAP ELE 1uF/50V/-40~+85℃/Taping/Standard	1	C604	삼성전기(SAMSUNG)	SSL1H010M0511	자삽/RADIAL

Part Number	Value	Description	Quantity	Part Reference	Manufacturer	Manufacturer Part Number	Other
00107-1027	10uF/16V	CAP ELE 10uF/16V/-40~+85℃/Taping/Standard	1	C447	삼성전기(SAMSUNG)	CESSL1C100M0511AB	자삽/RADIAL
00107-1031	47uF/50V	CAP ELE 47uF/50V/-40~+85℃/Taping/Standard	8	C544 C545 C546 C547 C553 C554 C555 C556	삼성전기(SAMSUNG)	CESSL1H470M0611AB	자삽/RADIAL
00107-1033	22uF/50V	CAP ELE 22uF/50V/-40~+85℃/Taping/Standard	1	C513	삼성전기(SAMSUNG)	SSL1H220M0511	자삽/RADIAL
00107-1041	100uF/10V	CAP ELE 100uF/10V/-40~+85℃/Taping/Standard	1	C24	삼성전기(SAMSUNG)	SSL1A101M0511	자삽/RADIAL
00107-1045	10uF/50V	CAP ELE 10uF/50V/-40~+85℃/Taping/Standard	15	C261 C262 C264 C266 C351 C430 C434 C443 C445 C461 C462 C520 C522 C524 C526	삼성전기(SAMSUNG)	SSL1H100M0511	자삽/RADIAL
00107-1072	220uF/10V	CAP ELE 220uF/10V/-40~+85℃/0511/Taping/STD	3	C501 C504 C508	삼성전기(SAMSUNG)		자삽/RADIAL
00200-0004	103/2012	RES CHIP 10KΩ, 5%, 2012	2	R1 R2	ROHM	MCR102012J103E	자삽/SMD
00200-0087	472	RES CHIP 4.7KΩ, 5%, 1608	13	R20 R174 R271 R272 R302 R303 R312 R324 R325 R519 R525 R530 R531	ROHM	MCR03 EZH J 472	자삽/SMD
00200-0088	471	RES CHIP 470Ω, 5%, 1608	10	R48 R463 R466 R505 R541 R542 R543 R544 R552 R553	ROHM	MCR03 EZH J 471	자삽/SMD
00200-0090	0	RES CHIP 0Ω, 5%, 1608	7	R160 R161 R162 R290 R291 R554 R555	ROHM	MCR03 EZH J 000	자삽/SMD
00200-0092	122	RES CHIP 1.2KΩ, 5%, 1608	2	R49 R504	ROHM	MCR03 EZH J 122	자삽/SMD
00200-0093	223	RES CHIP 22KΩ, 5%, 1608	1	R304	ROHM	MCR03 EZH J 223	자삽/SMD
00200-0094	102	RES CHIP 1KΩ, 5%, 1608	10	R22 R23 R24 R25 R26 R27 R47 R264 R506 R709	ROHM	MCR03 EZH J 102	자삽/SMD
00200-0095	105	RES CHIP 1MΩ, 5%, 1608	1	R533	ROHM	MCR03 EZH J 105	자삽/SMD
00200-0096	103	RES CHIP 10KΩ, 5%, 1608	20	R41 R43 R260 R261 R300 R310 R316 R320 R321 R322 R323 R326 R444 R527 R534 R570 R704 R705 R706 R707	ROHM	MCR03 EZH J 103	자삽/SMD
00200-0098	470	RES CHIP 47Ω, 5%, 1608	6	R501 R502 R511 R512 R513 R537	ROHM	MCR03 EZH J 470	자삽/SMD
00200-0099	4R7	RES CHIP 4.7Ω, 5%, 1608	1	R450	ROHM	MCR03 EZH J 4R7	자삽/SMD
00200-0100	101	RES CHIP 100Ω, 5%, 1608	8	R263 R313 R517 R518 R520 R536 R601 R603	ROHM	MCR03 EZH J 101	자삽/SMD
00200-0101	221	RES CHIP 220Ω, 5%, 1608	2	R546 R557	ROHM	MCR03 EZH J 221	자삽/SMD
00200-0105	332	RES CHIP 3.3KΩ, 5%, 1608	4	R445 R523 R524 R600	ROHM	MCR03 EZH J 332	자삽/SMD
00200-0106	750	RES CHIP 75Ω, 5%, 1608	6	R550 R558 R560 R562 R563 R565	ROHM	MCR03 EZH J 750	자삽/SMD
00200-0111	303	RES CHIP 30KΩ, 5%, 1608	2	R42 R44	ROHM	MCR03 EZH J 303	자삽/SMD
00200-0118	330	RES CHIP 33Ω, 5%, 1608	9	R29 R30 R31 R32 R33 R34 R35 R36 R265	ROHM	MCR03 EZH J 330	자삽/SMD
00200-0120	681	RES CHIP 680Ω, 5%, 1608	1	R314	ROHM	MCR03 EZH J 681	자삽/SMD
00200-0141	512	RES CHIP 5.1KΩ, 5%, 1608	1	R21	ROHM	MCR03 EZH J 512	자삽/SMD
00200-0142	222	RES CHIP 2.2KΩ, 5%, 1608	5	R269 R270 R350 R351 R602	ROHM	MCR03 EZH J 222	자삽/SMD
00200-0148	202	RES CHIP 2KΩ, 5%, 1608	1	R529	ROHM	MCR03 EZH J 202	자삽/SMD
00200-0154	270	RES CHIP 27Ω, 5%, 1608	1	R431	ROHM	MCR03 EZH J 270	자삽/SMD
00200-0194	331/F	RES CHIP 330Ω, 1%, 1608	6	R410 R412 R414 R416 R418 R420	ROHM	MCR03 EZH F 331	자삽/SMD
00200-0204	511	RES CHIP 510Ω, 5%, 1608	1	R526	ROHM	MCR03 EZH J 511	자삽/SMD
00200-0206	103/3216	RES CHIP 10KΩ, 5%, 3216	1	R3	ROHM	MCR18 EZH J 103	자삽/SMD
00200-0216	121/F	RES CHIP 120Ω, 1%, 1608	2	R432 R433	ROHM	MCR03 EZH F 121	자삽/SMD
00200-0225	561	RES CHIP 560Ω, 5%, 1608	1	R327	ROHM	MCR03 EZH J 561	자삽/SMD
00200-0227	3R9	RES CHIP 3.9Ω, 5%, 1608	1	R465	ROHM	MCR03 EZH J 3R9	자삽/SMD
00200-0260	750/F	RES CHIP 75Ω, 1%, 1608	7	R540 R545 R548 R549 R551 R556 R561	ROHM	MCR03 EZH F 750	자삽/SMD
00200-0274	203/F	RES CHIP 20KΩ, 1%, 1608	2	R273 R274	ROHM	MCR03 EZH F 203	자삽/SMD
00200-0289	680/F	RES CHIP 68Ω, 1%, 1608	1	R487	ROHM	MCR03 EZH F 680	자삽/SMD
00207-0003	103*4	RES CHIP NETWORK 10KΩ*4	1	PR20	ROHM	MNR14 E0AB J 103	자삽/SMD
00207-0006	470*4	RES CHIP NETWORK 47Ω*4	2	PR51 PR52	ROHM	MNR14 E0AB J 470	자삽/SMD
00207-0011	000*4	RES CHIP NETWORK 0Ω*4	2	PR160 PR161	ROHM	MNR14 E0AB J 000	자삽/SMD
00207-0019	560*4	RES CHIP NETWORK 56Ω*4	1	PR520	ROHM	MNR14 E0AB J 560	자삽/SMD
00300-0004	1N5402-U	DIODE SILICON RETIFIER 1N5402-U/AXIAL	1	D50	DC	1N5402-U	수삽/AXIAL
00400-0008	KST4403	TR CHIP KST4403/PNP/SOT-23	7	Q20 Q21 Q22 Q23 Q24 Q25 Q26	FAIRCHILD	KST4403	자삽/SMD
00400-1001	KST4401	TR CHIP KST4401/NPN/SOT-23	7	Q27 Q300 Q301 Q320 Q321 Q350 Q502	FAIRCHILD	KST4401	자삽/SMD
00401-0014	KTA1273	TR NOMAL KTA1273/PNP/TO-92L	1	Q501	KEC	KTA1273	자삽/TO-92

Part Number	Value	Description	Quantity	Part Reference	Manufacturer	Manufacturer Part Number	Other
00402-0003	FDV301N	FET FDV301N	3	Q260 Q261 Q430	FAIRCHILD	FDV301N	자삽/SMD
00500-0030	28.920MHZ/30pF	VIBRATOR CRYSTAL 28.920MHZ/30pF/HC-49S	1	Y501	빛샘정보통신	28.920MHZ/30pF/HC-49S	수삽
00500-0045	24.000MHz/20pF	VIBRATOR CRYSTAL FOUNDMETAL 24.000MHz/20pF/ATS/+-30ppm	1	Y20	동진전자(DONGJIN.E)	FOUNDMETAL 24.000MHz/20pF/ATS/+-30ppm	수삽
00500-0060	27MHZ/13.5pF	X-TAL 27MHZ/13.5pF/20PPM/HC-49U	1	Y310	동진전자(DONGJIN.E)	X-TAL 27MHZ/13.5pF/20PPM/HC-49U	수삽
00901-0049	UB33-HAP	JACK 3P RCA UB33-HAP(Y,W,R)	1	JP460	인창전자	UB33-HAP	수삽
00903-0017	IDSFB-40P-DSA4C	IDE BOX HEADER 40PIN IDSFB-40P-DSA4C	1	JP700	융진전자	IDSFB-40P-DSA4C	수삽
00904-0006	HR-DGR2661S-8	CON SCART HR-DGR2661S-8 DOUBLE	1	U540	효성일렉트(HYOSUNG ELEC)	HR-DGR2661S-8	수삽
00906-0030	53014-0910	CON WAFER 53014-0910	1	JP580	MOLEX	53014-0910	수삽
00906-0060	5267-15A	CON WAFER 5267-15A	1	JP1	MOLEX	5267-15A	수삽
00906-0068	12511HS-24(W)	CON FFC WAFER 12511HS-24(W)	1	JP20	연호전자	12511HS-24(W)	수삽
00909-0004	BFTX-1001/H4D	CONNECTOR SPDIF BFTX-1001/H4D	1	JP450	BRIGHT LED ELECTORONICS CORP.	BFTX-1001/H4D	수삽
00910-0006	RD-9P-FH	CON D-SUB 9PIN (RD-9P-FH)	1	JP600	융진전자	RD-9P-FH	수삽
01103-0005	CIB21P330NE	POWER BEAD CIB21P330NE	1	L501	삼성전기(SAMSUNG)	CIB21P330NE	자삽/SMD
01103-0011	BLM18PG300SN1D	POWER BEAD-300 BLM18PG300SN1D	21	L39 L40 L242 L260 L261 L262 L263 L268 L269 L270 L271 L370 L390 L430 L512 L513 L514 L515 L520 L580 L588	MURATA	BLM18PG300SN1D	자삽/SMD
01103-0015	BLM18AG601SN1D	CHIP BEAD-601 BLM18AG601SN1D	40	L1 L28 L29 L30 L31 L32 L33 L34 L35 L36 L37 L38 L264 L265 L700 L701 L702 L703 L704 L705 L706 L707 L708 L709 L710 L711 L712 L713 L714 L715 L716 L717 L718 L719 L720 L721 L722 L723 L724 L725	MURATA	BLM18AG601SN1D	자삽/SMD
01404-0032	CDM1316L/IH MK2	TUNER CDM1316L/IH MK2	1	U505	PHILIPS	CDM1316L/IH MK2	수삽
10591-05-001	HEAT SINK-M	HEAT SINK-M	1	AC260	BETHEL	HEAT SINK-M	수삽
	Ass`y FRONT B/d						
00107-1051	47uF/16V/SSE	CAP ELE 47uF/16V/-40~+85℃/Taping/5mm Height	1	C900	삼성전기(SAMSUNG)	SSE1C470M0605	자삽/RADIAL
00203-0019	222/A	RES CARBON 2.2KΩ,1/4W,5%	1	R901	CHO YANG ELECTRONICS	CRD25TJ222	수삽
00203-0061	470/A	RES CARBON 47Ω, 1/4W, 5%	1	R900	영지통상㈜	RD14470J	수삽
00602-0010	SLR124	LED RED SLR124(WITH LED SPACER-3)	1	D900			수삽
00602-0011	SLG124	LED GREEN SLG124(WITH LED SPACER-3)	1	D901			수삽
00602-0025	SLY124Y	LED AMBER SLY124Y(W/ LED SPACER-3)	1	D902	서울전자산업(SEOUL ELECTRONIC)	SLY124Y	수삽
00603-0013	BQ-M36X2RD-001	7-SEGMENT 4DIGIT BQ-M36X2RD-001	1	U900	BRIGHT LED ELECTORONICS CORP.	BQ-M36X2RD-001	수삽
00605-0004	FRP-5530HL	REMOCON SENSOR FRP-5530HL	1	U901	포커스(FOCUS)	FRP-5530HL	수삽
00802-0005	DHT-1105TABF	S/W TACT DHT-1105TABF(160±50g/5mm)	4	S900 S901 S902 S903	동현하이테크(DONGHYUN)	DHT-1105TABF	자삽
00906-0069	12511HR-24(W)	CON FFC WAFER 12511HR-24(W)	1	JP900	연호전자	12511HR-24(W)	수삽
09900-1003	JUMPER 0	JUMPER JUMPER 0	9	JP2 JP4 JP5 JP6 JP7 JP8 JP9 JP10 JP11	삼우(SAMWOO)	JUMPER 0	자삽/AXIAL