

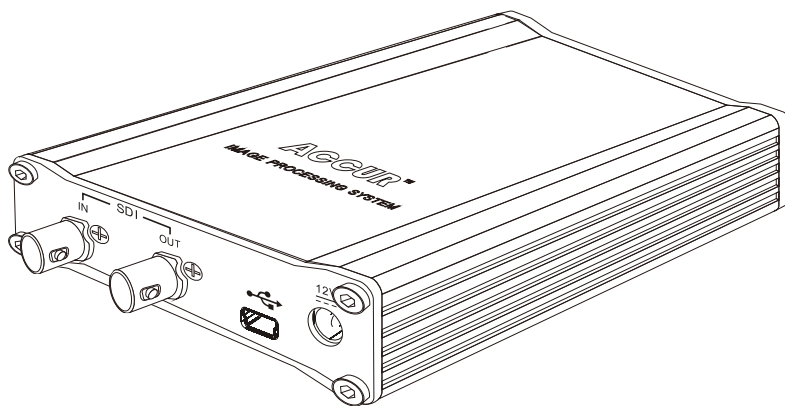
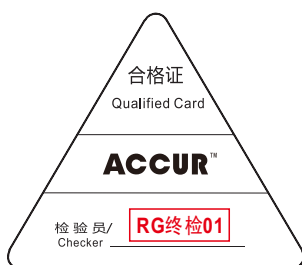
ACCUR™



魔盒

Global First
BA-100

Operating instruction



 **洛阳瑞光影视光电技术有限公司**
LUOYANG RUIGUANG MOVIE-TV OPTIC-ELECTRONIC TECHNOLOGY CO.,LTD

深圳市领马科技有限公司(监制)



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BA-100 Function Brief

- 1 SDI output standard testing pattern
- 2 SDI monitor color calibration (work with CalMan 5 calibration software)



Attention:

1. Use the assorted power adaptor
2. Away from heat, keep ventilated
3. Connecting (plug) equipment, pay attention to esd protection
4. When equipment is on operation, note the waterproof, as well as the water splashed down

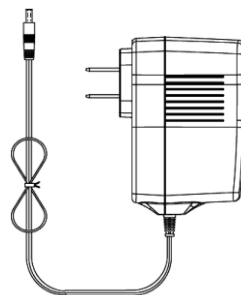
Packing list: BA-100

Power adapter (12V 2A)

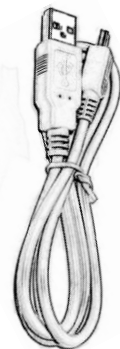
USB cable (A-Mini B)



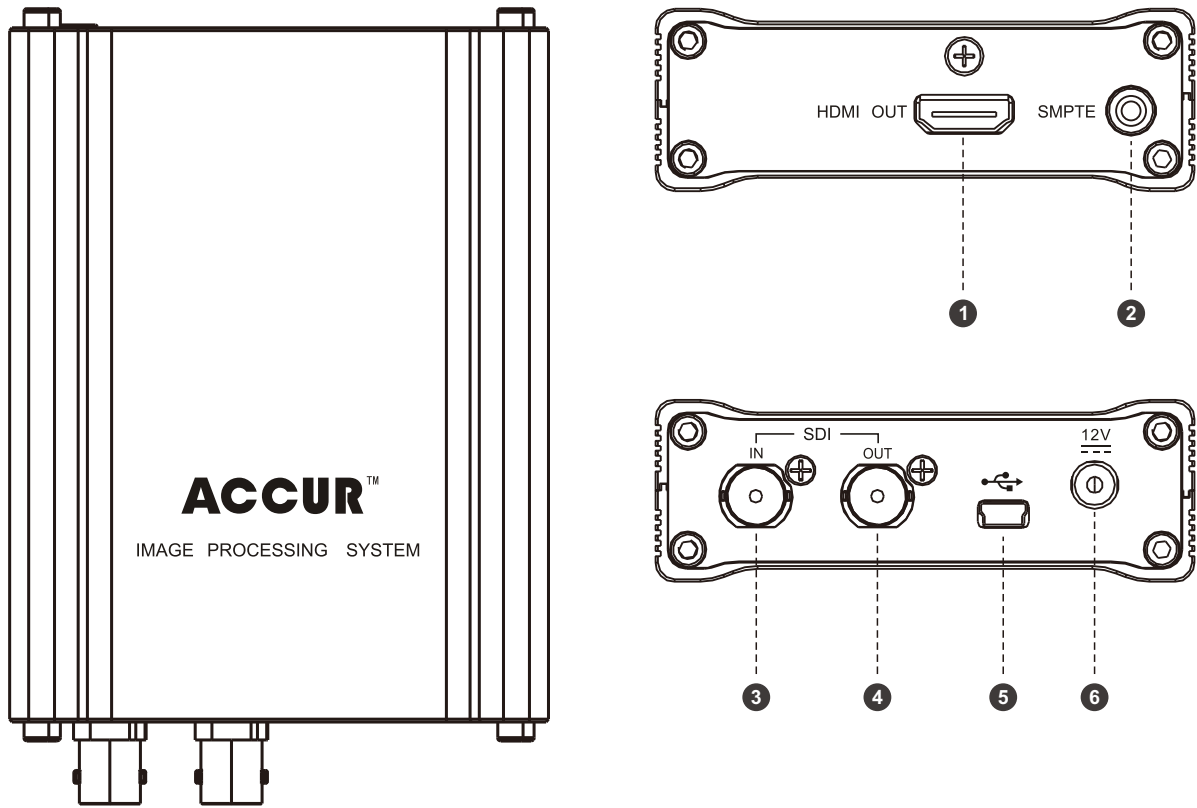
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Hardware (interface/key) functions description



1 Key functions description(2)

KEY	Short press	Press for 3s
SMPTE	576 50i---1080 50i cyclic switching	Red LED turn on LUT OFF Green LED Turn on LUT ON

2 Interface functions description(1-3-4-5-6)

- 1.HDMI output
- 3.SDI input
- 4.SDI output
- 5.USB data controlling port
- 6.DC 12V IN

Note: HDMI signal output is the same as the “SDI - OUT”

Operation instruction and notes

1 SDI/HDMI output standard testing pattern

Step1. Plug the AC/DC adapter into the “ $\underline{12V}$ ”input in BA-100

Step2. Link BA-100 SDI OUT and SDI IN on the tested equipment by coaxial cable, switch the signal channel of the device to SDI mode, the tested pattern displayed.

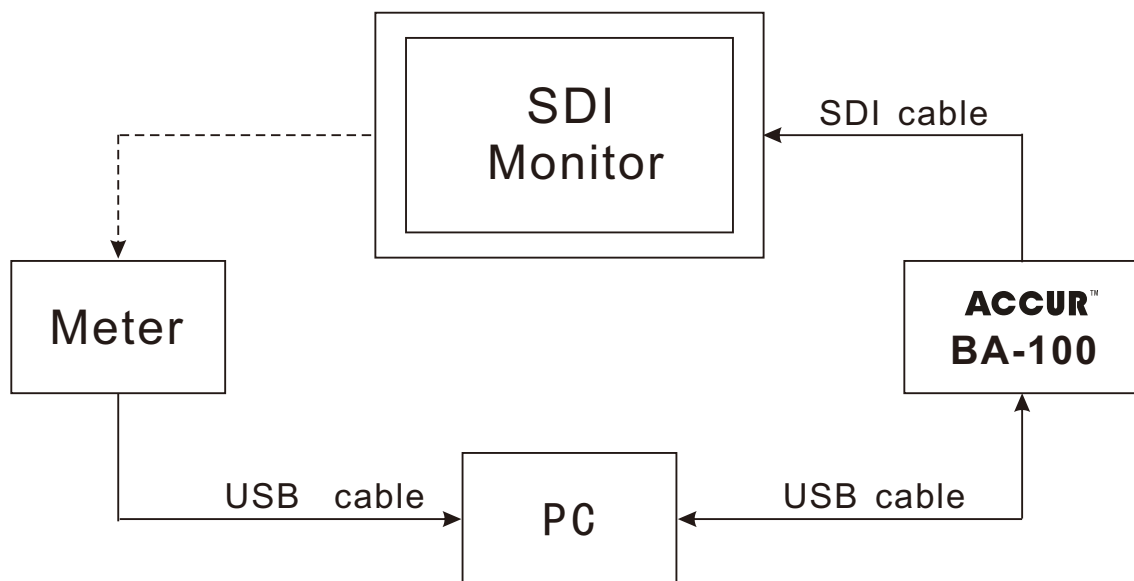
Step3. Press the key“SMPTE”, “SDI OUT”signal output switches between high definition(1080 50i)and standard definition(576 50i).



SMPTE RP 219 SDTV/HDTV

2 SDI monitor color calibration

Hardware equipment connection diagram



Calibration PC System Requirements :

- Windows® Vista™ or later with latest operating system updates installed (recommended: Windows 7® or later)

- 2 GHz processor (recommended: 2 GHz Dual Core Processor)
- 2 GB RAM (recommended: 4 GB RAM)
- Microsoft® .NET Framework 4.6 or later



Note: for the use of the calibration software and the relating notes , please refer to 《CalMAN for Ruige PCC use instruction》

Program software upgrade

MCU and FPGA program upgrade

Step1. copy the MCU and FPGA upgrade program to the root directory under DISC U

Step2. connect the U disc with the BA-100 “ ↔ ” based on the OTG cable

Step3. Keep pressing the SMPTE key , power the BA-100, once the SMPTE green light flash , release the SMPTE key , after finishing the upgrade , flashing status disappear , if the light flashing is always on , meaning MCU .FPGA upgrade failed

File name: Mcu***.bna, Fpga***.bnb

Such as: McuUpdateForLutLoader_150727.bna

FpgaUpdateForLutLoader_150727.bnb

BA-100 Technique Specification

1、SDI input distance , the testing of the breakdown point (real testing data)

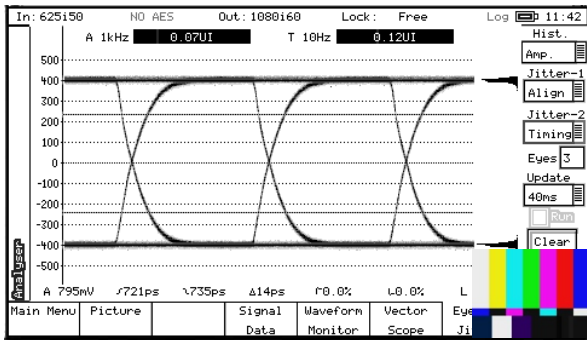
Model/Distance	SD-SDI	HD-SDI	3G-SDI
Belden 1694A	400M	160M	120M

Other cable transmission , refer to the below standard

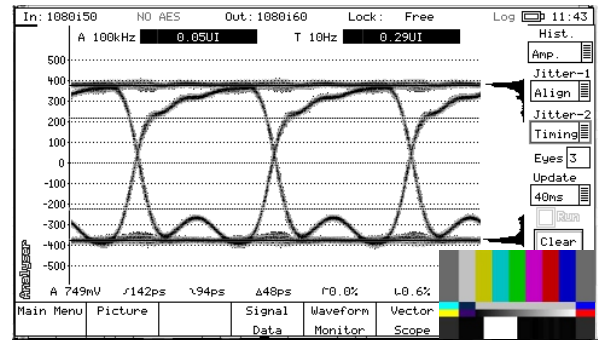
Criterion	SMPTE 344M	SMPTE 292M	SMPTE 424M
Video format	SD-SDI	HD-SDI	3G-SDI
Baud rate	540Mb/s	1.5Gb/s	3.0Gb/s
Model/Unit	M	M	M
L-2. 5CFB	139	54	36
L-2. 5CHD	168	66	46
L-3CFB	179	68	46
L-4CFB	216	82	55

2、 Time delay : 40ns

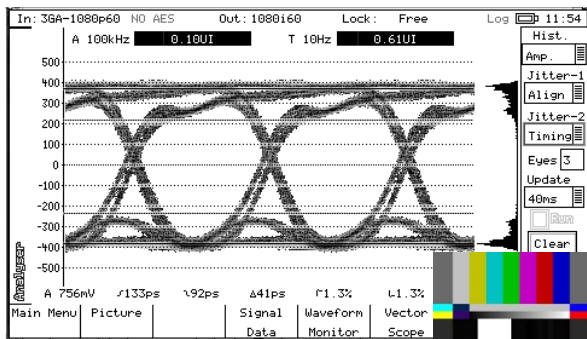
3、 SDI signal Eye Diagram testing and signal quality characteristic parameter



576 50i



1080 50i



1080 60p

Note : Eye diagram testing use the SDI cable from Canare L-3C2VS, length is 300mm.

Interface	SDI-OUT		
	SD-SDI	HD-SDI	3G-SDI
Video format	SD-SDI	HD-SDI	3G-SDI
Amplitude (mv)	801	783	786
Over/Undershoot	0%/0%	0.6%/0%	1.2%/0.6%
Rise/Fall Time	678ps/ 649ps	85ps/ 83ps	94ps/ 90ps
Timing jitter (10Hz)	0.09UI	0.22UI	0.48UI
Alignment jitter SD (1KHz) HD (100kHz) 3G (100kHz)	0.06UI	0.05UI	0.11UI

SDI digital signal quality characteristic parameter(testing)

NOTE: the above technical parameter are all real testing value, but the relating data testing can be affected by testing environment , SDI cable quality , transmission distance, matching impedance, BNC connector.,etc , thereby , the related technical parameters will be subject to the actual testing data based on customer ' s use environment.

LUT file loading(PC)



1 RgLutLoadTool download

Method 1: scan the right side QR code to download “RgLutLoadTool”.

Method 2: login <http://www.ruige.com/index/vpro/50.html> and enter the “ Support ” UI , then click “RgLutLoadTool” to download.

2 Hardware Connection

Step1. connect the power adaptor with the “ $12V$ ” input end of the BA-100

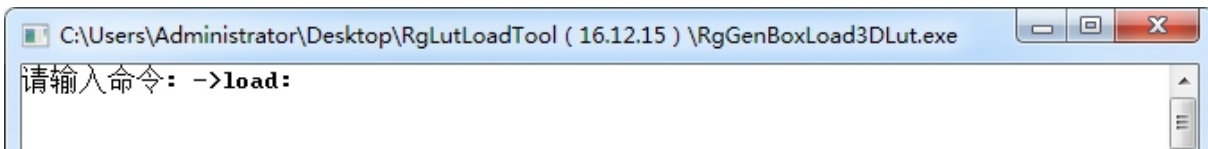
Step2. connect the BA-100 with the computer via the USB cable

3 LUT file loading

Step1. Unzip the “RgLutLoadTool.rar” by clicking right button of the mouse

Step2. Copy the LUT file(From_SLog2-SGumut_To_LC-709Type A .cube)under the root directory of “RgLutLoadTool161215“

Step3. Double click “RgGenBoxLoad3DLut.exe”to pop-up the loading window



Step4. After“请输入命令: ->”input command“load:From_SLog2-SGumut_To_LC-709TypeA.cube , and click “Enter” to confirm , then shows : “Load Lut ...”, means loading (if the file name is too long, you can just copy the file name with the suffix)

Step5. Once the loading is finished , the command line will show the character “Load Lut success”, means the LUT document loading is successful



Note : Lut loading file name can not include the “blank space” and the Chinese character.

Specification

Name: IMAGE PROCESSING SYSTEM

Model: BA-100

Interface type: Mini USB2.0 () × 1

SDI (Input × 1, Output × 1)

HDMI (Output × 1)

SDI IN: 1080/24p/24psf/25p/30p/50i//60i/50p/60p
720/50p/60p、480i/576i

Input voltage: DC 12V 2A (jack plug)

Dimension: 108.2 (W) × 84.2 (D) × 28.4 (H) mm

Power consumption: 6W (Max)

Weight: 0.7Kg (Including Packing and spare parts)

Problem solution

- 1、 When reading data , but no LED green light flash , please check your U disc ,or change a new U disc.
- 2、 If monitor can not display test/loading image
 - a:Please check whether monitor supports HD signal , if not , and just supports SD , press the “SMPTE”key to switch the “SDI OUT” format into SD (576 50i)
 - b:Check SDI cable connection well or not , and whether SDI signal in/out is connected well or not
 - c:Check monitor is set in SDI channel or not;
- 3、 When calibration , “Source”、 “Displays” can not set well
 - a:Please check USB cable connection well or not;
 - b:Please check whether the BA-100 driving file (.dll) is installed well or not