# **Colorlight**



## S2 Synchronous Sender

**USER MANUAL** 



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## **1. Introduction**

As a new generation of sender, S2 Sender has updated its core chips, and the performance significantly improved. It adopts dual USB2.0 as the communication interface to achieve high speed communication between the PC and senders. S2 Sender realizes cascading between multiple senders and much more convenient. S2 Sender can be applied to small display perfectly.

## 2. Interface Description

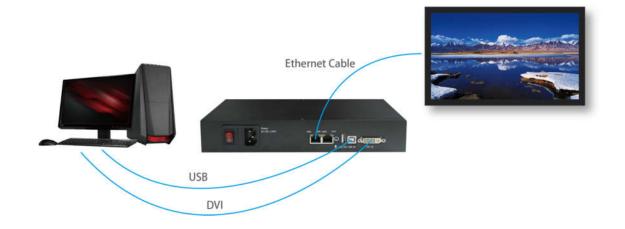




No	Name	Function	Remarks
1	Indicator panel and Configuration button	Adjust the brightness of the entire screen ( 16 levels ); Display the whole screen test mode conversion	Press "+"and "-"together to switch between brightness adjustment and testing mode.
2	Power Switch	On/off	
3	Power Socket	AC 100~240V	
4	Output Ports	RJ45, to transmit network signals	The control area of the two outputs can be separately set.
5	Audio input	Input audio signal via Ethernet cable	
6	USB TYPE-A	USB output, cascading among multiple senders	
7	USB TYPE-B	USB input, connecting PC for configuring parameters	
8	DVI Input	DVI output interface, connect to the graphics card	



## **3. Hardware Connection**



#### 1) Power Supply (PCI):

Match with computer PCI slot, or DC 3.8-12V for power supply.

#### 2) Video Signal Input (DVI):

Connect PC with S2 via proper DVI/HDMI cable via DVI interface.

#### 3) Screen Configuration (USB):

Use a standard USB A/B cable to connect S2 with PC for S2 configuration.

#### 4) Ethernet Cable (RJ45):

Connect S2 sender with the receiving card via Ethernet cable for controlling receiving card and the screen (Note: The Ethernet cable must be CAT5E or CAT6).



## 4. LEDVISION Installation and Preliminary Configuration

#### **4.1 Computer Configurations**

- CPU Frequency>= 2.0GHZ
- Host Memory>=1G
- Graphic card with DVI/HDMI interface: Memory ≥512MB
- The resolution of PC's graphic card should be equal to or larger than the actual LED display's.

Computer configuration can be adjusted according to the actual situation. Adjustment mainly aims at total pixels of LED display, the complexity of playing contents and whether playing HD video or not.



#### 4.2 USB Driver Installation

First download the installation package of LEDVISION software from Colorlight's official website <u>www.colorlightinside.com</u>, and complete the installation according to the diagrams shown below.

**1**. Run the software package, and select **[English]** for installer language. Click **[OK]** to move on.



**Note:** Run LEDVISION version 4.18 or higher while using S2.



2. After selecting a language, an installation wizard like below will appear. Click [ Next ];

Then choose installation location, click [ Browse ] to change default target location, then click [ Next ] after completing.

Choose components according to your own computer status, click [Install] to complete.

LEDVISION Setup – 🗆 🗙	\varTheta LEDVISION Setup – 🗆
Choose Install Location Choose the folder in which to install LEDVISION .	Choose Components Choose which features of LEDVISION you want to install.
Setup will install LEDVISION in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.	Check the components you want to install and uncheck the components you don't want to install. Click Install to start the installation.
Destination Folder C:\Program Files (x86)\LEDVISION Browse	Select components to install: Common Files Dependens Files USB-to_Serial Driver Winpcap Usb Driver For Sending Ca
C:\Program Files (x86)\LEDVISION Browse Space required: 100.8MB Space available: 239.9GB	Space required: 100.8MB
< Back Next > Cancel	< Back Install Cancel

After the installation is complete you are ready to use LEDVISION.



#### 4.3 Graphic Card Settings

Set up the working mode of the computer graphic card after completing hardware connection and powering S2 on, you can select **Duplicate** mode or **Extend** mode according to the different requirements.

• **Duplicate Mode:** That the contents displayed on LED screen are consistent with computer, that is to say, copy the computer contents onto LED screen, as pic below.



PC Screen

LED Screen



• Extend Mode: That the contents displayed on LED screen are inconsistent with computer's, that is, to extend a display image from the right side of PC screen, which was consistent with LED display's, we also call it "background playing", as pic below.

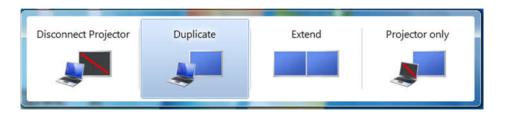




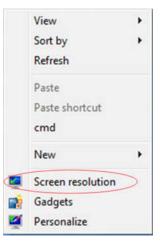
For different computers, there are different ways to change the mode. Take **WIN 7/8** system + **NVIDIA** graphics cards as an example, please read the following settings ways.

• Method 1: Hold down the WIN and P keys at the same time, and select the mode as you want in the pop-up

window.



• Method 2: Right-click and select "Screen resolution" to enter the page of "modify the display appearance"; if your graphics card is not NVIDIA and cannot find the setting interface please refer to the description of the graphics card.





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le Edit View	Tools Help				
	Change the app	pearance of your displays			
			21	Detect Identify	
	Display:	1. Mobile PC Display 🔹	~		
	Resolution:	1366 × 768 (recommended)			
	Orientation:	Landscape 👻			
	Multiple displays:	Extend these displays			
		Duplicate these displays Extend these displays Show desktop only on 1 Show desktop only on 2 tap P	)	Advanced settings	
	Make text and other What display setting	r items larger or smaller gs should I choose?			
			OK Can	el Apply	

**Note:** As for other kinds of graphic cards, if there is no corresponding window, please refer to the user manual of the graphic card.



## **5.** Parameter Configuration

First of all, please make sure the software under i Series

Mode before setting.

Click the **"Setting"** > **"Software Setting"** to enter the Software Management window, change the mode by inputting password: **168**.

Mode Settings	Mode Settings	Classic Mode			
Play Settings		S racics roac			
Startup Settings	Play Settings	Play Mode	Normal Play Mode	*	
LED Play Screen		Default Decode	Self Decoding First	•	
Timer Settings			sk Plug and Play Program Into		]
Vetwork Settings		Record Play L	-	gh Graphics Requirement:	5)
Shortcut Settings					
Other Settings	Startup Settings	Run When Sy	stem Starts		
		Play When So	ftware Starts		
		Minimize After	Start		
		Wait for 30 se	econds if system start u	pless than 2 minutes	
		Permit Multi-Ir	nstance		
			ed to run one instance e	and a second second	





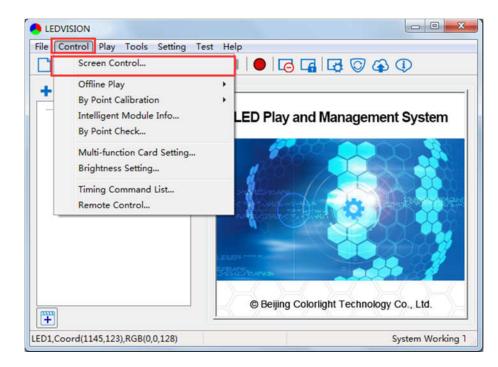
#### **5.1 Confirmation on Hardware Connection**

Please make sure the correctness of the hardware connection before setting, use LEDVISION to detect sender and all

receiving cards.

#### 5.1.1 Detect Sender and receiving card

Run LEDVISION, click the "Control" > "Screen Control" to enter the Screen Control window.





Select [ Sender Card ] for sending device, Click [ Detect Sender Cards ] in Sender Card Settings. Please check the hardware connection or the installation of relevant driver if cannot detect sender cards.

Select network port and click "**Detect Receiver Cards**" respectively, the software will automatically acquire the Receiver (Receiving card) quantity for each network port of the sender. Please check corresponding cable if the numbers of receiving card are inconsistent with actual status.

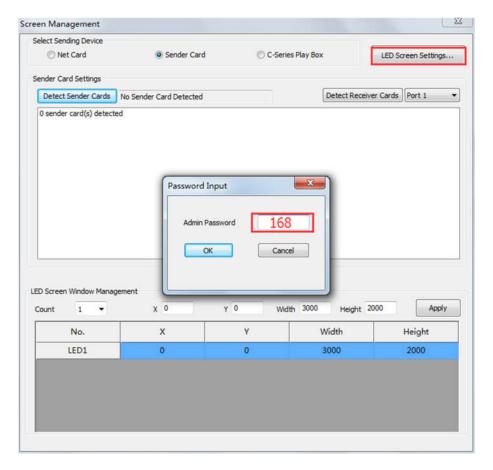
Net Card	Sender Card	C-Series Play Box	LED Screen Settings
der Card Settings			
		Detroit	Receiver Cards Port 1
Detect Sender Cards No Se	nder Card Detected	Detect	Receiver Cards Port 1



#### 5.2 LED Screen Setting

Click "LED Screen Settings" and input password [ 168 ] to enter the LED Screen Setting interface, and set up "Sending

device", "Screen parameters", "Connection parameters".





#### **5.2.1 Sending Device Setting**

Configure on the relevant parameters of the sender card.

g Device Scree	n Parameters Connect	ion Parameters(L	ook From Front)						
Select Sending De	vice								
O Net Car	d 💿 Sender	Card C	C-Series Play B	DX	Detect Receive	er Cards	All 1	2 3	4
Toatal: 0	No Sender Card Detec	ted	Detect		Port Index	Index	Version	Run Time	Support Chips
nput Signal Inform	nation				-				
Туре	No Signal	Frame Rate	[						
Width		Height							
ender Card Resol	lution(EDID) 800 x 600 v		Set						
Advanced	deu	MTI	Standard	~					
Loop Backup	bdy	Frame Output		~					
Enable HDCP		Input Bit Depth		~	_				
		Input Type		v					
Auto Switch (D		Sync Method		~					
better Graylev	el On Low Brightness	Sync Method	AUU						
			Send						
Test Mode	Off	~	Write Logo						
Work Mode	Normal Mode	~	3D Setting						
THAT'S PROOF									

**Sender Card Resolution:** Generally, sender card resolution must be consistent with the graphic card's.



**Input Signal Information:** Display the sender info that auto acquired via the software, which only provided for reference, and did not support personally set up.

Advanced: Prepare for professionals for special applications settings, no operation allowed for non-professionals.

#### Advanced settings include the parameters listed below:

Zero Frame Delay: Default uncheck, and should be enabled by technician under special status.

**Auto Switch DVI/HDMI:** The sender only identifies the video signal that has been set up when unchecked; Auto identify the signal that has been connected first when checked.

Brightness adjustment via multi-function card: Auto adjusts screen brightness via the sensor of multi-function card when checked.

Maximum Transmission Unit (MTU): Default "Standard", and consult with the technician if you need to apply to "Long Frame".

Frame Output: Default "Every Frame", and consult with the technician if you need to apply to "Every Other Frame".

Input Bit Depth: Default "8bit".

**Input Type:** DVI/HDMI, according to the actual using status.

Sync Method: Default "Auto"

Write logo: Custom, display before video signal input. The image formats should be bmp, jpg or png.

**3D Setting**: Works only for the function setting of 3D sender, did not apply for S2.





#### 5.2.2 Screen Parameters

Observe the display screen with single cabinet as unit, if all cabinets display normally (it is normal circumstance even the picture between cabinets is not continuous), please ignore this step and directly go to the next step.

#### Otherwise, enter the following configuration:

Click [ Load ], choose the correct parameter file.

Click **[ Send ]**, to send the loading parameter to the receiving card. Each cabinet should display normally (it is normal circumstance even the picture between cabinets is not continuous), then click **[ Save To Receiver ]** to save the parameters to the receiver card.

If each cabinet cannot display normally, then contact with the LED screen engineers.

1					LED	Screen S	etting LED1				- 0	×
nding Device	Screen	Parameters Co	nnection Para	ameters(Look Fr	om Front)							
Module Info	ormation											
c	Chip Type	Normal Chip		Width	64	Ť.	Inverted Data	No	Reverse			
S	can Mode	16 scan		Height	16		OE Active High	No	Reverse			
Box Setting	,											
	Width	64	<=146	Cascade	Left To Right	*	Data Group	Normal 20 g	groups v			
	Height	64	<=512	Fold Count	No Split	¥		Data G	Group Swap			
Performanc	e Setting											
Refr	resh Rate	1920	*	Multiple	Refresh x 16	¥	Calibration Mode	Disable	¥	Blanking Phase		
G	iray Level	8192	*	Gray Mode	Balanced Low Gra	y v	Calibration	From Recei	ver Cards 🗸 🗸	SCK Duty Ratio		
Se	erial Clock	13.9 MHz	*	Display Mode	Gray-level First	~	No Signal Action	Keep the La	ast Frame 🛛 🛩	White Balance Setting		
Blank	ing Value	0	÷ (×100m	) Brightness	8	v	Input Bit Depth	8bit	~	Intelligent Module Setting		
	Brightn	ess Percent: 71	%	Minimum O	E: 90.8 ns		Enable Gradual	Disable	¥	Custom Gamma Table		
	E.c.						Gamma Value	2.8	~	Other Settings		
	Hide	Advanced Settin	gs									
	Intelligen	t Setting	Sa	een Test		Send A	fter Modify					活W
Rea	d	Load		ave	Send	Save To	Receiver					



#### 5.2.3 Connection Parameters (Look from front)

You don't need to set up the control area of each net port respectively under i series mode, but set up the connection relationship of the receiver card aiming at each net port loading via the sender, and the software will auto calculate and set up the control area according to the connection relationship. Detailed Setting Steps as follows:

#### 1) Set up the quantity of receiving card

Set how many Receiver (Receiving card) that one port manages in Row Count and Col Count (6\*6 as an example), how many pixels that one Receiver (Receiving card) manages in Width and Height (128\*128 as an example), you will see led display mapping area from the right side (Viewing from the front of led display).

Sender Card Information	5	(4 No.	III 7 1	Show	v Connection Line	es 🖲 Standard	O Complex	
	-	1	2	3	4	5	6	Receiver Card Layout
Port	N.	Port No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	Col Count 6 💠 Row Count 6 💠 Reset All			
Reset the Current Port Number	5	Port No.: 0 Width: 128 Height 128	Port No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height 128	Port: No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	Selected Card Informatio
Calculate Auto Calculation O Manual Edit Sender Port X Y Width Height		Port No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height 128	Port No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	Port: No.:0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height 128	Width 128
phatineen händel (Chailes) (Chailes Anno Anno Anno Anno	4	Port No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height 128	Port No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height 128	Port: No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height 128	Operation Guide
	2	Port No.: 0 Width: 128 Height 128	Port No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height: 128				
	9	Port No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height 128	Port: No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height 128	
< >								



#### 2) Receiver Card Parameters Setting

Select the target sender and the net port from the left side, then select the corresponding cabinets of net port actual control area and set the connection lines in the mapping area.

nding Device Screen Parameters Connection Para	meter	s(Looi	From Front)						
Sender Card Information			1. 1	⊞ 7	Shore Shore	v Connection Lin	es 💿 Standard	Complex	
1 2 3	1		1	2	3	4	5	6	Receiver Card Layout
		+	Port 1-1 No.: 1 Widtl \$128 Height 128	Port: 1-1 No.: 2 Width: 128 Height: 128	Port 1-1 No: 3 Width 128 Height 128	Port: No.: 0 Width: 128 Height 128	Port No.: 0 Width: 128 Height 128	Port: No.: 0 Width: 128 Height 128	Col Count 6 🗘 Row Count 6 💠
Reset the Current Port Number		21	Port 1-1 No.: 6 Width 128 Height 128	Port 1-1 No.: 5 Width: 128 Height 128	Port -1 No.: 4 Width: 128 Height 128	Port No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height: 128	Selected Card Information
Calculate  Auto Calculation  Manual Edit Sender Port X Y Width Height		m	Port: 1 -1 No.: 7 Width: 128 Height: 128	Port 1-1 No.: 8 Width: 128 Height 128	Port 1-1 No.: 9 Widtl 128 Height 128	Port: No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height: 128	Width 128
1 1 0 0 384 384		4	Port No:0 Width:128 Height:128	Port: No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	Operation Guide
	4	S.	Port No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	Port No: 0 Width: 128 Height 128	Port: No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	
		ø	Port: No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height: 128	Port: No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height: 128	Port No.: 0 Width: 128 Height: 128	
c >									
Connection is modified									

#### There are two methods to set up:

1. Use mouse to select one by one

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A. In the mapping area, select the first receiving card based on the actual connection of the net port (view from the front), and then set up the actual loading width and height of the target receiving card in the right side (128\*128 as an example).

B. Click the Receiver (Receiving card) one by one until the last one for this network port loads.

#### 2. Connection Pattern

A. Aiming at the LED screen with standard connection lines.

B. First set up the receiving card information according to the actual loading width and height (128\*128 as an example).

C. Select the connection line you want from the right side, then cover the corresponding area of net port loading in the mapping area, finally complete setting.

As the cabinets have multiple specification (that is the inconsistent capacity of the receiving card), you can select the different one to adjust separately after completing setting.

Port         Port <th< th=""><th>Canda</th><th></th><th></th><th>d Inform</th><th>ation</th><th></th><th></th><th>h</th><th>~ No.</th><th><b>H 7</b></th><th>Shor</th><th>v Connection Lin</th><th>es 🖲 Standard</th><th>Complex</th><th></th></th<>	Canda			d Inform	ation			h	~ No.	<b>H 7</b>	Shor	v Connection Lin	es 🖲 Standard	Complex	
Port         Port 1-1         Port 1-1         Port 1-1         Port 1-1         No. 3         Port 1-2         Port 1-2         Port 1-2         Port 1-2         No. 3         Words 128	-	1	9						1	2	3	4	5	б	
Image: No. 6         Port. 1-1         Port. 1-1         Port. 1-1         Port. 1-2		2						-	No. 1 Widt S 128	No.: 2 Width: 128	No.: 3 Width 128	No: 1 Widt S 128	No.: 2 Width: 128	No.: 3 Width 128	Row Count 6
Calculate         Auto Calculation         Manual Edit           Sender         Port         X         Y         Width: 128	11	Reset	1-2 the Curr	_	10	1-4		64	No.: 6 Width 128	No.: 5 Width: 128	No.: 4 Width: 128	No.: 6 Width 128	No.: 5 Width: 128	No: 4 Width: 128	Selected Card Informatio
Sender Port         X         Y         Width Height           1         0         0         384         38			uto Calc	ulation				3	No.: 7 Width: 128	No.: 8 Width: 128	No.: 9 Width 128	No.: 7 Width: 128	No.: 8 Width: 128	No.: 9 Widtl 128	
3 0 384 384 384 Port 1-3 No.5 No		1	0	0	384	384		4	No.:7 Width 128	No.: 8 Width: 128	No: 9 Widtl 28	No.: 0 Width: 128	No.: 0 Width: 128	No.: 0 Width: 128	
Port: 1-3 Port: 1-3 Port: 1-9 Port: Port: Port: Port: Port: Port: Port: No::0		3	0	384	384	384	4	2	Port: 1-3 No.: 6 Width: 128	Port 1-3 No: 5 Width: 128	Port: 1-3 No.: 4 Width 128	Port: No.: 0 Width: 128	Port No.: 0 Width: 128	Port: No.: 0 Width: 128	
Height 126 Height 126 Height 126 Height 126 Height 126								9	No.1	No.:2	No.: 3	No.:0	No.: 0	No.: 0	Contraction Contraction
	4					>									



#### 3) Send to Receiver Cards & Save to Receiver Cards

Set up all the receiving card parameters and connection line respectively, click [Send] to send the correct parameter to the receiving card, and the screen should display normally about this time.

Then click [ Save to Receiver ] to save parameters to corresponding receiving card after confirming.

								L	ED Screen	Setting LED	1			
nding Dev	ice So	creen Pa	rameters	Conne	ection Para	amete	s(Loo	k From Front)						
Sondor I		nder Car	d Inform	ation			~	~   <del>No.</del>	⊞ 7	Show	w Connection Line	es 💿 Standard	d O Complex	
1	2		3					1	2	3	4	5	6	Receiver Card Layout
Port	J				1		-	Port 1-1 No.: 1 Widtl.S 128 Height 128	Port 1-1 No: 2 Width: 128 Height 128	Port 1-1 No.: 3 Width 128 Height 128	Port 1-2 No.: 1 Widtl.S 128 Height 128	Port 1-2 No.: 2 Width: 128 Height 128	Port: 1-2 No.: 3 Width 128 Height: 128	Col Count 6
1-1	Reset	1-2 the Curr	ent Port		1-4		5	Port 1-1 No.: 6 Width 128 Height 128	Port 1-1 No.: 5 Width: 128 Height 128	Port 1-1 No.: 4 Width: 128 Height 128	Port 1-2 No.: 6 Width 128 Height: 128	Port: 1-2 No.: 5 Width: 128 Height: 128	Port -2 No.: 4 Width: 128 Height: 128	Selected Card Information
Calculate Sender	0.	uto Calc	ulation	-	nual Edit Height		3	Port: -1 No.: 7 Width: 128 Height: 128	Port: 1-1 No.: 8 Width: 128 Height: 128	Port 1-1 No.: 9 Widtl-128 Height 128	Port -2 No: 7 Width: 128 Height: 128	Port: 1-2 No.: 8 Width: 128 Height: 128	Port 1-2 No.: 9 Widt 128 Height 128	Width 128
sender	1	0	0	384	384			Port 1-3	Port 1-3	Port 1-3	Port 1-4	Port 1-4	Port 1-4	Operation Guide
	2	384	0	384	384		4	No: 1 Widtl S 128	No.:2 Width: 128	No.: 3 Width 128	No.: 1 Widtl \$128	No.: 2 Width: 128	No.: 3 Width 128	
1	3	0	384	384	384		-	Height 128 Port 1-3	Height 128 Port 1-3	Height 128 Port 1-3	Height 128 Port 1-4	Height 128 Port 1-4	Height 128 Port 1-4	
	4	384	384	384	384	*	2	No.: 6 Width 128 Height: 128	No.: 5 Width: 128 Height: 128	No.: 4 Width: 128 Height: 128	No.: 6 Width 128 Height: 128	No.: 5 Width: 128 Height 128	No.: 4 Width: 128 Height: 128	
							9	Port: -3 No.: 7 Width: 128 Height: 128	Port 1-3 No.: 8 Width: 128 Height 128	Port 1-3 No.: 9 Widtl, 128 Height 128	Port: -4 No.: 7 Width: 128 Height 128	Port 1-4 No.: 8 Width: 128 Height 128	Port 1-4 No.: 9 Widt 128 Height 128	
٢					>		<						>	
Connectio	on is mo	dified												
R	ead		Load		5	ave	•	Send	Save to	o Receiver				



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