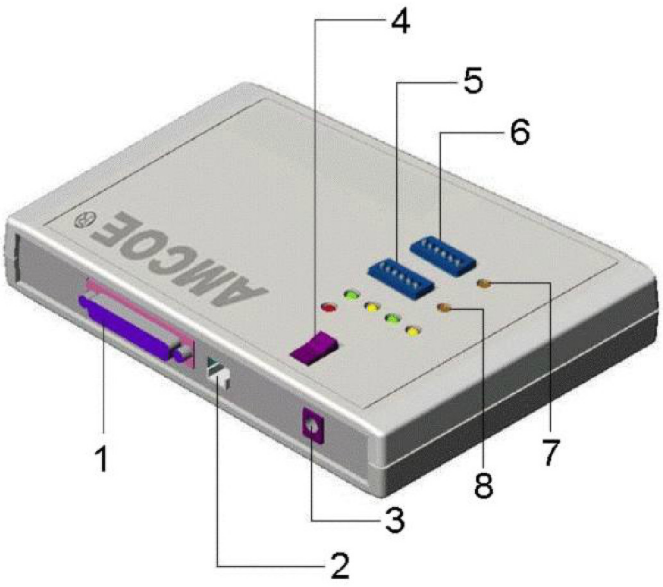
Amcoe Inc.

Amcoe Link Control Box (Version 2.2)

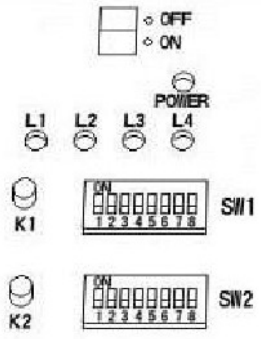
MANUAL

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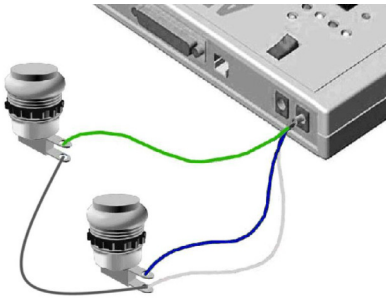
S2000 LINK **Supports external LED display (version 1.9 and after)**



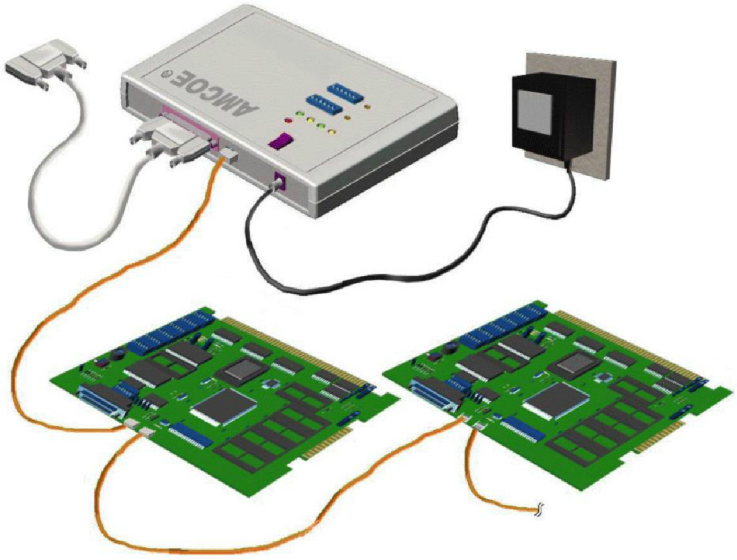
Control Unit: (approx. 7.5" x 5.5" x 1.25")
1 = RS232 port
2 = Link Cable Connector
3 = Adaptor socket
4 = Power On/Off switch
5 = Dip switch 1
6 = Dip switch 2
7 = K2
8 = K1



External connections for K1 and K2



Accessories:
AC to DC adaptor - 7.5V ~ 12VDC (included)
Link Cable – If Link Cable Connector (2) is 3-pin, five 3-pin link cables will be included. Additional sold separately. If Link Cable Connector (2) is standard RJ45, no cable included; use standard CAT-5 cable. One 3-pin to RJ45 converter board (per system) is required to link boards with 3-pin connector and boards with RJ45 connector together.



Connection is very simple.
1/ The RS232 port (use straight through cable) is for communication with PC, modem, printer, or external LED Sign. Various programs are used for different applications. For normal linking without extended functions, It does not have to be connected. Standard program has PRINTER DIRECT for ALL UNITS in link.
2/ Plug AC to DC adaptor to 110~120V AC source.
3/ Connect Link Cable from Control Unit to CN1 of 1st unit, from CN2 of 1st unit to CN1 of 2nd unit, from CN2 of 2nd unit to CN1 of 3rd unit, and so on. The entire connection is a serial connection and ends at CN1 of the last unit.



NOT RECOMMENDED RECOMMENDED
Connecting cable routing on ground level recommended.

THE MOST COST EFFECTIVE WAY TO LINK!

Preparation:
1/S2000 board must have Link Version Program. Action 2000 Version 2.4 and following. Fruit Bonus 2000 & New Cherry 2000 Version 2.2 and following. All other S2000 games are link ready when first released. It is recommended to update your S2000 game to a latest version whenever available.
2/Set Unit ID on each S2000 board. (See manuals of respective games.) WARNING: DO NOT set same Unit ID to two or more boards. Setting same Unit ID to more than one board will cause damages.
3/ Set Unit ID in order. Start from 1 and do not skip number.
4/ Connect as described above.
5/ Make dip switch selections on Dip Sw 1 and Dip Sw 2 of Control Unit.

(Note: If this is your first time set up and you have been using approved Link Version programs as stand alone, you have the option of retaining all previous account figures which will be transferred immediately to Control Unit when Link commences or you may prefer to reset them before Link.)

Procedures:
A/ POWER ON
1/ Turn on all units.
2/ Power on Control Unit.

<table>
<tr><td>L1 and L2 blink alternatively.</td><td colspan="2">This is Ready-For-Reset mode.</td></tr>
<tr><td colspan="2">If no reset action taken (explained later) after a while, L2 is out and L1 is lit.</td><td rowspan="2">Version 1.2 will skip Standby mode and go directly to Link Mode.</td></tr>
<tr><td>Only L1 is lit.</td><td>This is Standby mode.</td></tr>
</table>

3/ Press K1 (of Control Unit) to leave Standby mode and go to Link mode. (Version 1.0 and 1.1 only)

<table>
<tr><td>L3 and L4 blink very rapidly.</td><td rowspan="2">This is Link mode</td></tr>
<tr><td>L2, L3, and L4 blink very rapidly.</td></tr>
</table>

4/ Link Bonus will appear and scroll horizontally on the screen of each unit.

B/ POWER OFF (Proper procedure to avoid errors caused by sudden disconnection.)
1/ Keep pressing K2 (of Control Unit) until only L1 is lit.(Standby mode)
2/ Turn Power Switch off. REMEMBER: power off ONLY AT STANDBY MODE.
3/ Turn off machines.

C/ SUSPEND AND RESUME
If you want to change certain dip switch selections on Control Unit during Link mode or turn off a unit for service, you do not need to power off Control Unit but to *suspend and resume* it.
1/ Keep pressing K2 (of Control Unit) until only L1 is lit. (Standby mode)
2/ Made necessary selections. DO NOT CHANGE maximum units in Link. Or, turn off a unit for repair / service. (You do not need to wait till service is done to resume linking the others.)
3/ Press K1 (of Control Unit) to leave Standby mode and go to Link mode.
4/ In case of repair / service, after done, just turn on that unit. Or, preferably, suspend (K2), power on that unit, resume (K1).

D/ ADD OR REMOVE UNIT
DO NOT USE *Suspend and Resume* when you want to add or remove a unit. You have to *Power Off.* Add or remove unit, correct Unit ID (on affected S2000 board - turn off to adjust) and maximum units in Link (on Control Unit) if necessary, and *Power On*.

E/ RESET OF CONTROL UNIT
During Ready-For-Reset mode (of *POWER ON),* keep pressing BOTH K1 and K2. (Or, keep pressing K1 & K2, power on.)
1/ L1 and L2 will go off. L3 is lit briefly followed by L1, L2, L3, and L4 all lit up.
2/ After L1, L2, L3, and L4 have lit up, release K1 and K2.
3/ L1, L2, L3, and L4 will shut off. Reset of Control Unit is done.
4/ L1 and L2 blink alternatively (Ready-For-Reset mode) again, then only L1 is lit (Standby mode). Version 1.2 will skip Standby mode.

In general, JUST REMEMBER: Press K1 to leave Standby mode to go to Link mode. Keep pressing K2 to leave Link mode to Standby mode. Release K2 when only L1 is lit. Only power off Control Unit at Standby mode. For simplicity, use Standby mode as reference point all the time. Except first time set up and adding or removing a unit, turn unit on or off at Standby mode.

Procedures used are to assure accurate data collection and processing without mistake. Even done improperly by negligence once a while, the only effect is data missing, which is usually -0.1 to -0.2 %. The only ***MUST*** *is* ***NO SAME UNIT ID for more than one unit****, which will cause DAMAGES either to S2000 board or the Control Unit.*
IMPORTANT: ISOLATION TRANSFORMER MUST BE INSTALLED FOR EACH MONITOR IN LINK.

Using External K1 and K2:
If Control Unit is kept inside a cabinet and cannot be accessed by the attendant, you can use the three external wires to connect two button switches (K1 & K2) outside the cabinet for daily power on and off procedures. Other procedures are not recommended because LED indications are not seen. The attendant can plug and unplug the adaptor instead of using the Power Switch. Instead of LED indications, look at Link Bonus on screen. When the adaptor is plugged in (power switch is on), Link Bonus does not appear on screen = Standby mode; Link Bonus appears on screen = Link mode. Using K1, press 1-2 seconds; using K2, press 5-10 seconds. Try the external switches while looking at the LED and screen yourself. Get a timing reference before instructing the attendant what to do. Try Power On, Power Off, and Suspend and Resume. (There are labels on the wires showing which one for K1 and which one for K2. One wire, usually black, is common GND for both. Color codes may change without notification. Thus, for identification, do not remove labels.)

Dip Switch Selections on Control Unit:

DIP SW 1	before 1.8	ver. 1.8~	1	2	3	4	5	6	7	8
BONUS BASE	2,000	3,000	OFF	OFF	OFF					
	3,000	5,000	ON	OFF	OFF					
	4,000	8,000	OFF	ON	OFF					
	5,000	10,000	ON	ON	OFF					
	8,000	20,000	OFF	OFF	ON					
	10,000	30,000	ON	OFF	ON					
	15,000	40,000	OFF	ON	ON					
	20,000	50,000	ON	ON	ON					
BONUS MAX	5,000	6,000				OFF	OFF	OFF	OFF	
	6,000	8,000				ON	OFF	OFF	OFF	
	7,000	10,000				OFF	ON	OFF	OFF	
	8,000	15,000				ON	ON	OFF	OFF	
	10,000	20,000				OFF	OFF	ON	OFF	
	15,000	25,000				ON	OFF	ON	OFF	
	20,000	30,000				OFF	ON	ON	OFF	
	25,000	35,000				ON	ON	ON	OFF	
	30,000	40,000				OFF	OFF	OFF	ON	
	35,000	50,000				ON	OFF	OFF	ON	
	40,000	60,000				OFF	ON	OFF	ON	
	50,000	70,000				ON	ON	OFF	ON	
	60,000	80,000				OFF	OFF	ON	ON	
	80,000	100,000				ON	OFF	ON	ON	
	100,000	120,000				OFF	ON	ON	ON	
	150,000	150,000				ON	ON	ON	ON	
BONUS ACCUMULATION	YES									OFF
	NO = FIX AT MAX									ON

DIP SW 2		1	2	3	4	5	6	7	8
UNITS IN LINK* (MAX UP TO)	5	OFF	OFF						
	8	ON	OFF						
	12	OFF	ON						
	15	ON	ON						
Total points played to increase 1 Bonus Point	100	faster		OFF	OFF				
	150			ON	OFF				
	200			OFF	ON				
	250	slower		ON	ON				
Printer to print account of Link Control Unit by K 1	Citizen	Version 1.8 & after				OFF			
	Epson					ON			
Percentage of Link Bonus	2%	Version 1.8 & after					OFF		
	3%						ON		
RESET MODE	Keep Bonus Points	Version 2.2 & after						OFF	
	Master Reset All Data							ON	

*UNITS IN LINK: Set to the nearest number. For example, if you link 4 units, set at 5 and do not set at 15; if you link 8 units, set at 8 and do not set at 12.

How does LINK work?

You have to understand that Link Bonus is something extra that you are willing to give out and it is not taken into consideration and calculation by individual unit. When a unit hits Link Bonus, Link Bonus Points will be collected separately to a 'place' underneath POINT. On Account Screen, Link Bonus Points won will be displayed in LINK IN. Usually, it is best to clear Link Bonus Points won immediately. After being cleared, Link Bonus Points being cleared will be displayed in LINK OUT. An ideal situation is LINK IN = LINK OUT and LINK TO IN = 0.

Under certain situations, such as TX version, Count Game, Auto Ticket Out (using 'SCORE'), and Limit Score, Link Bonus Points won cannot be cleared at all or immediately. In such cases, whenever POINT becomes zero, 100 points will be transferred from Link Bonus Points won to POINT. Points transferred from Link Bonus Points won to POINT will be displayed in LINK TO IN on account screen. An equal amount will also be added to Total In. Thus, Total In - LINK TO IN - Total Service = your *Actual In*. The program will treat LINK TO IN as usual IN and will take those points into calculation. That is to say the program will try to consume a portion of those points, which, however, will also generate usual win points as well. In the end, the situation will be your Total Out / Total In ratio remains more or less the same as without LINK. But, your Total Out / *Actual In* will be over what you expect. On the other hand, your LINK OUT, which is what you are willing to give out additionally, is reduced. From a pure mathematic point of view, you are saving some extra points.

If you do not understand above, do not worry about it. The good news is, regardless of what situations you are in, be prepared to give out 2-3% extra (in the long run). That's it.

The Control Unit has it own program and computation. It calculates all accumulated data collected, not existing data. For example, if you link 5 units for a month, then reset all of them. It will not affect Link Bonus Point nor the extra %, which is not based on existing data but on what **had** been accumulated (from reset of the Control Unit). Thus, to reset LINK, you must reset the Control Unit, not S2000 boards.

How to make Dip Switch selections?

1/ Increase rate (Dip Sw 2 #3 & #4) has an effect on %. A slow increase will reduce % a bit while a fast increase will raise % a bit. Fewer units in LINK, slower the increase rate. More units in LINK, faster the increase rate can be used. For example: 3 to 5 units, use 250; 6 to 8 units, use 200; 9 to 12 units, use 150; 13 to 15 units, use 150 or 100. We do not recommend 2 units. You may try for a period, after several hits, and adjust.

2/ Bonus Base: Roughly, give each unit 1000 points as base. Say, 3 units, use 3000; 6 units, use 8000. There is no fixed rule; just do not set it too high and too close to Bonus Max, especially under fast increase rate.

3/ Bonus Max: Bonus Max goes with number of units, not for attraction only. For example, use 20,000 to 30,000 with 6 units; 6,000 to 8,000 with 3 units. It is not linear proportion too. Sometimes, Link Bonus will hit before reaching Bonus Max; sometimes, it will hit well after reaching Bonus Max. There is no fixed cycle or frequency. Again, you may need to adjust after a period based on your operation results. Always match Bonus Max with total number of units in LINK. If you want to have a very big and attractive bonus and still be 2-3 % extra, you need to link more units for practical reason and not fewer for a cosmetic purpose only. If you link fewer units with a very big bonus, there may never be a hit, 0%, or very little, 0.5%. That will lose the purpose and interest of LINK.

4/ Fix Bonus at Max (Dip Sw 1 # 8): Some may think that fixing Bonus at Max will encourage players playing at all time. It may be true. However, it will reduce some of the hits at irregular intervals and at lower levels, say, half way to Max, just a little over Base. Either waiting time is too long or % is over. Anyhow, you have the option of choosing.

PRINTER DIRECT for all units in link (Standard Program)
Connect printer to RS232 port of the Control Unit. **Use one-to-one straight through cable**. On each S2000 game unit, select **PRINTER TYPE** to **VIA LINK**. Make sure the unit in link has "Printer Type" selection. Some game versions do not have this selection and cannot use this function. Most latest game versions have both "Printer Type" and "Printer Command" selections. Also, select appropriate PRINTER COMMAND on each game unit according to what kind of printer being in use. Refer to Manual and Confirm/Adjustment Screen of game.

Added features on VERSION 1.9 and after.
1/ Support external LED display.
2/ Revised Bonus Base and Bonus Max.
3/ Add dip switch selection of 2% or 3% Link Bonus.
4/ During link (do not suspend linking), press K1 to print (via a printer connected to Link Control Unit) total account data inside Link Control Unit. Dip switch to choose CITIZEN or EPSON mode for K1 operation.
5/ Output total account data to screen of S2000 board with RDFLCU program. RDFLCU = REQUEST DATA FROM LINK CONTROL UNIT. **Pirate 2001 is Version 1.9. Fruit Bonus 2000 & New Cherry 2000 is Version 3.3. Action 2000 is Version 2.8. Hold & Spin is Version 2.2. Pick & Win is Version 2.2.** (or newer version)
Go to the Account Screen of a RDFLCU machine during link. Do not suspend linking. Press Account Button one more time will go to a new screen. You will see data downloading from Link Control Unit. Nine different items are shown. You can press Small Button to clear RECENT IN, RECENT OUT, and RECENT BONUS. Clear command will be sent to Link Control Unit to reset these three items. Press Start Button to exit. Very simple and easy to keep track of total account data of your entire system. Regardless of Unit ID number, any machine with RDFLCU can request data from Link Control Unit with Version 1.9 program. Note: Whether using printer or screen to get data, data after the moment of request will not be accounted for. Say, players are still playing any of the machines during and after request is made. To ***synchronize*** total account data with the sum of all machines, all machines and Link Control Unit must be reset before operation and any newly added machine must be reset before linking. If synchronization is not required, you still have to reset Link Control Unit after changing to 1.9. **For accurate synchronization, you must use Link 1.9 or after with game version listed above.**
6/ Revise calculation and percentage program.

Added feature on VERSION 2.2 and after.
1/ Add dip switch selection of how the LINK CONTROL UNIT to be reset with the K1 and K2 buttons.
With dip switch 2 #7 OFF, reset all data except the Link Bonus points.
With dip switch 2 #7 ON, reset all data including the Link Bonus points. This is a master reset.