ARH-2 QUICKSTART INSTALLATION GUIDE

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NOTE: THIS IS A QUICK REFERENCE GUIDE FOR EXPERIENCED INSTALLERS, OTHERWISE PLEASE REFER TO THE FULL INSTALLATION MANUAL THAT IS AVAILABLE IN SEVERAL LANGUAGES AND AT WWW.ACTIVESILICON.CO.UK/TCS/

REMARQUE : CECI EST UN GUIDE DE REFERENCE RAPIDE POUR DES INSTALLATEURS EXPERIMENTES, SINON SE REPORTER AU MANUEL D'INSTALLATION COMPLET QUI EST DISPONIBLE EN PLUSIEURS LANGUES ET SUR WWW.ACTIVESILICON.CO.UK/TCS/

AVVERTENZA: QUESTA GUIDA SINTETICA D'INSTALLAZIONE È DESTINATA AI TECNICI ESPERTI. A COLORO CHE NON HANNO ESPERIENZA A RIGUARDO, SI RACCOMANDA DI CONSULTARE IL MANUALE COMPLETO DISPONIBILE IN VARIE LINGUE AL SITO WEB: WWW.ACTIVESILICON.CO.UK/TCS/

NOTA: ÉSTA ES UNA GUÍA DE REFERENCIA RÁPIDA PARA USUARIOS CON EXPERIENCIA. SI LO DESEA, PUEDE CONSULTAR EL MANUAL COMPLETO DE INSTALACIÓN, DISPONIBLE EN VARIOS IDIOMAS, EN WWW.ACTIVESILICON.CO.UK/TCS

AMERICAN ROULETTE WHEELS

Step 1 - Fit to Wheel and Connect to Control Box

Fit the Reader Head snuggly to the wheel using the magnetic discs. (Fit by peeling the red film off and offering the Reader Head up onto the wheel rim as described in the full installation manual.) The lip of the Reader Head must be tight up against the rim. Connect up the Reader Head cable to the Control Box. **IMPORTANT**: Make sure the correct cable is used – this is marked "ARH-2", and should only be used with ARH-2 Reader Heads.

Step 2 - Align Sensors

Use a 2mm allen key (from the "ARH-2 Setup Kit") through the two rear holes to adjust the beams:

The hole to the right of the rear connector is used to adjust the number ring sensor light beams (the dual beam). This should initially adjusted so that the beams are central in the number ring. If the wheel has large white numbers, it is often better to focus the light beams onto the outer edge of the number ring) to get maximum red and black area (as opposed to white numbers). The beam position can most easily be seen by aligning a red pocket in front of the beams, or by spinning the wheel quickly.

Similarly the hole to the left of the rear connector is used to adjust the roulette ball sensor light beam. This should be adjusted so that the beam is just above the centre on a ball of the same size and type as the one used during gaming.

Step 3 - Check Operation

Spin the wheel at a typical spin speed - the left hand LED ("WS" for Wheel Spin) should start to flash red for each red pocket detected. After two or three revolutions, this LED should go green indicating the Reader Head has synchronised to the wheel. Once synchronised, the LED will flash off for each pass of the single zero.

Now spin the roulette ball in the rim - the middle LED ("BR" for Ball in Rim) should flash for each rim pass of the ball. On the first rim pass the Display should indicate "Good Luck" (if supported and enabled by the Display). When the ball slows down sufficiently to trigger the No More Bets (NMBs) point, the middle LED will remain on for at approximately five seconds and the Display should flash "No More Bets" (or "Last Bets" etc). The NMBs point may be adjusted using the Display to set a number between 1 and 20 (under SETUP-ADS-NMB, 1 is early and 20 late) - see also the "Manual Adjustments" section. Note that some displays do not support "Good Luck" or "No More Bets" graphics, but is it STILL IMPORTANT to set the NMB point to about 1 or 2 revolutions before the ball drops. The NMB point is indicated by the middle LED staying on solid for five seconds.

When the ball lands in a pocket, the right hand LED ("WB" for White Ball) should flash for each pass of the roulette ball. The number of passes (1 or 2) before the winning number is sent may be set using the Display. If the WB LED ever flashes when there is not a ball in its view (resulting in the winning number not be sent to the display), then this means the automatic threshold it actually too sensitive and it must be turned down using a manual adjustment of the ball trimmer. See the next section for details.

Check the operation at typical high and low spins speeds and using the actual roulette ball used for gaming.

FRENCH ROULETTE WHEELS / MANUAL ROULETTE BALL ADJUSTMENT

Follow steps 1 to 3 above. If all is working well there is no need to do anymore. However, although the pocket sensing should work using the default settings, the ball sensitivity may need turning up (often for French wheels and/or a small ball, and sometimes down for US wheels/large ball): Remove the lid by screwing in the 4 allen screws using a 1.27mm (0.050") allen key (from the "ARH-2 Setup Kit"). Locate the Mode Switch Bank - SW2 (contains 4 switches). If the pockets are all a constant colour, operate switch 4 to select the ON position (this selects a lower threshold for the roulette ball). Re-test the unit. If the ball is still not detected, operate switch 3 to select the ON position (this increases the brightness slightly of the ball sensor LED drive). Re-test the unit.

If the ball is still not being detected, set the threshold manually using the "White Ball" five-turn trimmer. This is adjusted as follows: First ensure the trimmer is fully anti-clockwise, but turning it at least 6 turns anti-clockwise (there is no end stop). This is its default "automatic mode". Now turn the trimmer one and a half to two turns clockwise – this will switch the adjustment into "manual mode", which will be obvious because LED3 (next to the trimmer) will stop pulsing for each pass of the ball. Now continue to turn the trimmer clockwise until the LED pulses for each pass of the ball, and does not pulse at any other time (e.g. from reflections or coloured pockets in the wheel). Check this at typically high and low spins speeds and adjust the threshold level accordingly.

TROUBLESHOOTING

Problem	Solution
The Reader Head does not synchronise to the wheel (left hand LED does not go green).	Change the angle of the number ring sensor light beams – try a different position on number ring, typically towards the outside, attempting to pick on pure red and black, and not the lettering. On particularly tricky wheels, trimmer RB1 may be adjusted – see "Manual Adjustments". Also allow at least 30 seconds to synchronise from when the Reader Head is switched on.
The ball is not always seen by the Reader Head (sometimes when using a small ivory roulette ball).	Switch SW2 switch 3 to ON. This increases the light beam intensity. SW2 switch 4 could also be switched ON to lower the automatic detection threshold – but only if the pocket ring is a constant colour. See "Manual Adjustments".
The winning number read is a neighbouring pocket.	The roulette ball sensitivity is too high – turn SW2 switch 3 and 4 OFF, and/or point the ball beam towards the top of the ball.
The right hand LED indicates a roulette ball sometimes when the wheel is empty.	This can result in the wrong number being sent to the display (typically zero or a red pocket number) or no number at all. The resolution is the same as above – that is the ball sensitivity is too high. It may be necessary to manually set the white ball threshold – see "Manual Adjustments".

MANUAL ADJUSTMENTS

Switch 1	Switch 2	Mode Switch SW2 – Sub-Switches 1 and 2 (Default as shipped is OFF)
Off	Off	New game when the ball is detected spinning in the rim.
On	Off	Reserved for future use.
Off	**On**	The winning number is only sent if the direction of the wheel has changed since the last winning number has been sent, or if the wheel has been stationary or near stationary for 60 seconds or more.
On	**On**	Reserved for future use.

Switch	Mode Switch SW2 – Sub-Switches 3 and 4 (Default as shipped is OFF)
3	When ON, gives increased brightness for the ball sensor light beam, which increases its sensitivity. This might typically be switched on for some French wheels or when using a small ball in a US wheel.
4	When ON, selects a lower auto-threshold for the white ball detection (i.e. more sensitive), typically used with French roulette wheels..

Trimmer	Function (Default as shipped is all trimmers fully anti-clockwise (auto-mode)
RB1	**Red/Black sensing manual adjustment**: If it is not possible to achieve synchronisation in the auto-mode, then spin the wheel quite fast and wind RB1 two turns clockwise, and then further clockwise until the "WS" LED consistently stays green and flashes off for each pass of the single zero pocket. (The LED next to the RB1 trimmer should flash for each red pocket.) Note RB1 adjusts the threshold against a dynamic average background level – therefore the adjustment can only be made whilst spinning the wheel.
RB2	Reserved for future use.
WB	**White Ball detection threshold**: This may be used to manually set the threshold for the roulette ball detection. See "French Roulette Wheels " for details of how to use. This threshold is best set with the ball in a black pocket.
BR	**Ball in Rim manual adjustment**: In the unlikely circumstance that the roulette ball is not detected in the rim, this trimmer may be adjusted to set a lower threshold: Spin the ball in the rim and turn the trimmer two turns clockwise, followed by slowly clockwise until the LED next to it flashes for each rim pass of the ball. This adjustment may also be used to raise the threshold should the middle ("BP") LED flicker due to noise pickup.

NOTE: The trimmers have 5 turns. When the trimmer is wound fully anti-clockwise, the Reader Head functions automatically for that particular adjustment. (Note there is no end stop - to wind fully anti-clockwise, simply turn more than 5 times anti-clockwise.) The default setting is fully anti-clockwise. If any settings are manually set, these will be preserved if the unit is disconnected or power cycled.

No More Bets Manual Adjustment

The 16 position switch marked "NMB Drop Point" may be used to set the No More Bets drop point.

Setting	Function (Default as shipped is setting 0 = read No More Bets drop point from Display)
0..F	When the NMB Drop Point Switch is dialled to setting is 0, the No More Bets point is read from compatible Displays. Alternatively, and preferably (given not than many displays have this feature), a number between 1 and 15 (A = 10, B = 11 etc) may be dialled up manually to set the No More Bets point directly. The lower the number the earlier the NMB point and vice-versa.

TIPS

- If the casino uses different roulette balls on a regular basis it will not be possible to set the ball sensor light beam to just above centre for every ball (as stated in Step 2 above). In this instance, set the position of the ball beam to the centre (or just above) of the smallest roulette ball used.
- For "Touch Bet" roulette installations, the NMB point should be set manually using the dial up switch for each Reader Head (as typically there is only a keypad to set the NMB point for one Reader Head).
- For the Caro English (or Fair) roulette wheel using deep coloured ball pockets, the "number ring" beams can be focussed above the roulette ball into the pocket area towards the centre of the wheel (as the traditional number ring is too steep to be read reliably). Or alternatively use an "ARH Base Riser" to give the Reader Head a better view into the wheel.

INTERNAL LAYOUT

This shows the position of the sensors, switches, trimmers, and LEDs on the circuit board.