

C435 / C435A / SR5 Test Box Instructions



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1. Diary of Changes

Issue 1.0.....7th April 03
Issue 1.1.....30th June 04

2. Introduction

The test box has been designed to allow the testing of selected parallel functions of any C435, C435A or SR5 validator. In order to function, the test box must be supplied with 12V - 24V DC. The units will take up to 2.5A when coins are routed to certain paths, so this should be catered for by the PSU.

3. Overview of test box

There are DC inputs on the rear of the box, along with a master ON / OFF switch. There are 3 validator looms emanating from the back of the test box – the 21-way header connects to the PARALLEL interface connector (connector 2 on the PCB cover label). The 10-way plugs into the sorter override connector (connector 3 on the PCB cover label). The 2-way header connects to the diagnostics connector (connector 8 on the PCB cover label).

DO NOT TURN THE POWER ON BEFORE ALL CONNECTIONS BETWEEN THE TEST BOX AND ACCEPTOR ARE MADE!!!!!!

The default state for the test box should be all switches in the up position.

3.1 Test Box Functions

The following are the functions available for this test box.

3.1.1 ACCEPT LINES

These are LED's which are lit when the parallel connector's accept lines are activated. Their operation depends upon the type of validator connected, and the coin MODE selected using the toggle switch to the right of the middle row of switches. The tables below show the standard credit codes for the Mode1 SR5, the C435A (UK AWP) and ordinary C435 (non-UK AWP): An X denotes that the LED is on.

Table 1: C435A + SR5 Mode 2 Credits

		C435A (BACTA) Validator											
		5/6 Coin Mode						16 Coin Mode					
		A 1	A 2	A 3	A 4	A 5	A 6	A 1	A 2	A 3	A 4	A 5	A 6
£1	X							X		X	X	X	X
50p (n)		X					X		X	X			X
20p			X				X	X		X			X
10p				X					X	X	X	X	X
Token					X		X	X	X	X			X
£2	DOES NOT ACC.						X	X	X	X	X	X	X
5p						X				X			X
Coin 8	NOT USED						NOT USED						X
Coin 9	NOT USED						NOT USED						X
50p (old)		X					X			X	X		X
Coin 11	NOT USED						NOT USED						X
Coin 12	NOT USED						NOT USED						X
Coin 13	NOT USED						NOT USED						X
Coin 14	NOT USED						NOT USED						X
Coin 15	NOT USED						NOT USED						X
Coin 16	NOT USED						NOT USED						X

PLEASE NOTE THE INHIBIT POLARITY IS REVERSED FOR THE C435A AND SR5 MODE 2 THEREFORE THE INHIBIT SWITCHES ON THE TEST BOX MUST ALL BE SET TO THE 'ON' POSITION BEFORE TESTING.

Table 2: C435 / SR5 Mode 1 Credits

		C435 / SR5 Mode 1 Validator											
		5/6 Coin Mode						16 Coin Mode					
		A 1	A 2	A 3	A 4	A 5	A 6	A 1	A 2	A 3	A 4	A 5	A 6
Coin 1	X					X				X		X	
Coin 2		X				X	X			X		X	
Coin 3			X			X		X		X		X	
Coin 4				X		X	X	X		X		X	
Coin 5					X	X			X	X		X	
Coin 6	X					X	X		X	X		X	
Coin 7		X				X		X	X	X		X	
Coin 8			X			X	X	X	X	X		X	
Coin 9	X					X				X	X	X	
Coin 10		X				X	X			X	X	X	
Coin 11			X			X		X		X	X	X	
Coin 12				X		X	X	X		X	X	X	
Coin 13					X	X			X	X	X	X	
Coin 14	X					X	X		X	X	X	X	
Coin 15		X				X		X	X	X	X	X	
Coin 16			X			X	X	X	X	X	X	X	

(NB – A6 is only used on C435A in 5/6 coin mode. In all other cases it will be on permanently)

The displayed codes are for the Mode1 SR5, see TSP021 SR5 Modes Appendix for variants)

3.1.2 INHIBIT / ENABLE SWITCHES

As the name suggests these allow the user to enable or disable specific coins on the acceptor through the parallel interface. The coins affected depend upon the type of acceptor connected:

Table 3: C435A / SR5 Mode 2 Inhibits

	Coins Disabled in 5/6 COIN MODE	Coins Disabled in 16 COIN MODE
Inhibit 1	£1	£1
Inhibit 2	50p (N)	50p (O&N), 10p, 5p
Inhibit 3	20p	20p
Inhibit 4	10p	NOT USED
Inhibit 5	Token	Token
Inhibit 6	£2	£2
Inhibit 7	NOT USED	NOT USED

Inhibit 8	NOT USED	NOT USED
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(NB – 5p cannot be inhibited in 5/6 coin mode.)

Table 4: C435 / SR5 Mode1 Inhibits

	Coins Disabled in 5/6 COIN MODE	Coins Disabled in 16 COIN MODE
Inhibit 1	Coins 1 & 9	Coins 1 & 9
Inhibit 2	Coins 2 & 10	Coins 2 & 10
Inhibit 3	Coins 3 & 11	Coins 3 & 11
Inhibit 4	Coins 4 & 12	Coins 4 & 12
Inhibit 5	Coins 5 & 13	Coins 5 & 13
Inhibit 6	Coins 6 & 14	Coins 6 & 14
Inhibit 7	Coins 7 & 15	Coins 7 & 15
Inhibit 8	Coins 8 & 16	Coins 8 & 16

3.1.3 BANK INHIBIT / ENABLE SWITCHES

As the name suggests these allow the user to enable or disable a specific bank of coins on the validator through the parallel interface. This works the same way as the DIL switches on the reverse of the unit. To inhibit a bank of coins the switch must be set to ON.

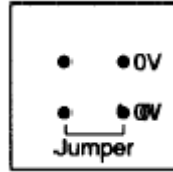
Table 5: Bank select

C435/A /SR5	Coins affected
Bank 1	Coins 1 - 8
Bank 2	Coins 9 - 16

3.1.4 DIAGNOSTICS

These switches perform specific diagnostic functions of the units depending on the position of the 2-way connector.

Position 1 - Accept Line Testing

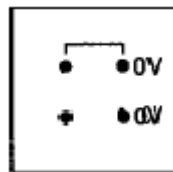


Diagnostics (connector 8 on the PCB cover label)

In this mode the inhibit lines are mapped onto the accept lines so that checks can be made on the output driver circuitry.

Note that accept line 1 is controlled by both inhibit line 1 and inhibit line 6, accept line 2 by inhibit 2 and 7, accept line 3 by inhibit 3 and 8.

Position 2 - Solenoid testing & Sensor locking



Diagnostics (connector 8 on the PCB cover label)

In this mode, the inhibit lines are mapped onto various solenoids.

Inhibit line 1	Sorter Solenoid 1 (lower flap)
Inhibit line 2	Sorter Solenoid 2 (upper flap)
Inhibit line 3	Manifold Solenoid (for 8-way sorting)
Inhibit line 4	Accept gate Solenoid

Pulling the inhibit line low enables the solenoid.

The solenoids are not enabled continuously but pulsed on and off every 500ms.

Additionally, the status of the PLL sensor locking indicator is shown on the accept lines. If there is a fault with any of the validation sensors (broken wire, damaged flexi-PCB etc) then the associated accept line will not be active. If the acceptor is working correctly, all accept lines should be active.

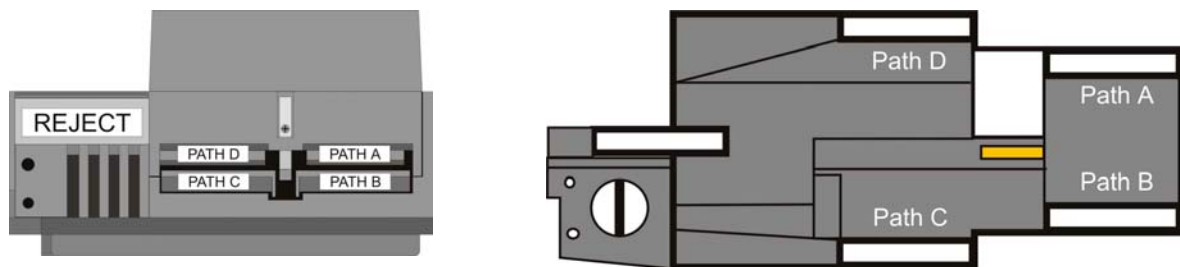
3.1.5 SORTER OVERRIDES

These switches test the override connector of the acceptor – switches position '1' means that the path is overridden. In AWP applications only the 4 paths A, B, C and D are used - refer to the table 6 below for details relevant to AWP acceptors:

Table 6: Overrides

Path Number	Path Overridden
1	D
2	C
3	B
4	A
5	NO EFFECT
6	NO EFFECT
7	NO EFFECT

Figure 1 Manifold Sorter Paths



Diagrams show sorter routes seen from below.

3.1.6 5 COIN / 16 COIN MODE

This selects the pattern of credit codes generated by the C435/A. See tables 1 and 2 on pages 5 and 6 for details.

3.1.7 +12V COMA / -12V COMA

Selects the polarity of the accept lines. The only difference you will see is red accept LED's if positive COMA is selected, or green accept LED's if negative COMA is selected.

Note: If your machine is a 0V COMA, test using -12V COMA.

3.1.8 DISPLAY SCREEN

This displays the credit code of the coin entered, also error messages as below:

A = Alarm condition.

B = Data changes during the pulse output.

C = Pulse is too long.

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