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PRODUCTION TOOLS • SHOW CONTROL • BACKUP SOLUTIONS

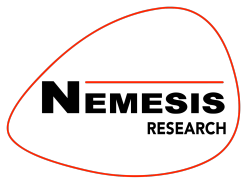
ELVIS-9600

Programmable Cable Tester

MANUAL/SETUP

010825





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Overview

Meet ELVIS-9600 – an advanced, fully automated cable tester built for the rigors of industrial environments. Designed specifically for multi-conductor cables used in audio and communication systems, ELVIS-9600 delivers exceptional speed, precision, and ease of use.

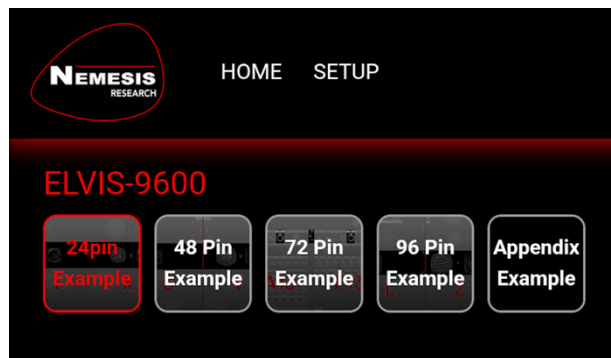
First Steps

1. **Create Elvis Administration Account.** If not already done contact Orbital Sales to set up an Elvis Administration Account. All Elvis within an organisation share one central Administrator for the creation and administration of Test Sequences. You will need to nominate a User Name and E-mail Address.
2. **Unpacking & Connections.** Remove Elvis-9600 from the packaging and install in rack, using 4x M6 rack screw (not included).
3. Connect the ethernet socket to your local network (this network must have internet access and a wireless access point to facilitate Elvis Tablet to connect).
4. Connect the tablet to power via the USB Power out socket on the rear of Elvis using either the USB-C or USB-A. USB-C normally provides faster charging. (Alternatively use the supplied separate AC adaptor).
5. Connect Elvis-9600 to the AC via the included PowerCon cable.
6. **Powering up.** Press the power button on the front panel.
7. The blue halo light, green 'PSU' LED and red 'ERR' LED will all illuminate.
8. After booting and if a network connection is found, the red 'ERR' LED will go out and be replaced by the green 'NET' LED.
9. **Network setup.** The Tablet (via WiFi) and Elvis (via ethernet) must be connected to the same network and this network should be enabled to connect to the Internet. Elvis default IP Address is 192.168.1.253. You may need to change these settings to comply with your own network, or if multiple Elvis are to be deployed. To modify the network settings:
Click 'SETUP'.
A popup will appear, enter the default password '12345678'.
Click 'NETWORK'
Fill in the appropriate fields, click 'Save', then 'Restart'.
Wait for the changes to take effect and connect via the new IP address.
10. **Tablet setup.** Press the power button on the side of the tablet and wait for it to boot.
11. After a short pause the tablet will enter a 'Kiosk' mode. This allows authorised users to make changes to the tablet, but prevents unwanted editing of settings or apps. Kiosk Mode is not essential in the operation of Elvis, but it has the advantage of completely "locking down" the tablet.
12. In portrait view swipe from the left of the screen to access the kiosk settings. Enter the default Kiosk pin '1234', click 'OK'.
13. Tap 'Settings', then 'Device Management', scroll all the way down to the bottom and click 'WiFi Settings' (one from the bottom of the list).

14. Select your WiFi network from the list, enter your WiFi password. Ensure 'Auto-connect' is 'ON'. Once connected click back, then back again. Swipe right to left to return to the original 'Settings' page.
15. Select 'Web Content Settings', then 'Start URL'. Enter the IP address that you selected for the Elvis-9600 unit, click 'OK'. Return to the 'Settings' page.
16. Click 'Kiosk Mode (PLUS)' then 'Kiosk Mode PIN'. Enter a memorable PIN number then click 'OK'. **(Do not loose/forget this pin number)**. Without this PIN you will need to enter recovery mode and factory reset the tablet to regain entry.)
17. From these settings you can also disable the power button, refresh mode, etc. Once happy with the tablet setup, swipe right to return to the default screen. Press and hold the power button and restart the tablet. Ensure that the tablet now reboots directly into the Elvis Testing screen.
18. **Updating Elvis.** To update the Elvis-9600 tap 'SETUP'. In the popup window enter the password '12345678'. Extra 'Menu buttons' appear at the top of the screen. Click 'FIRMWARE UPGRADE'. The unit may then return the message 'Your device is up to date' or an option to install new firmware. We recommend always running the latest version of firmware.
19. **Updating the test files.** To ensure you have all your available tests installed on the Elvis-9600 enter the setup mode (tap 'SETUP' enter the password '12345678' in the pop-up window) and tap the 'TEST FILES' button. This will display the files currently on the unit and a 'Get Test Files' button. Click the 'Get Test Files' button and wait for the device to connect to the server and download the latest versions of the test files. Once the progress bar has reached 100% tap the 'Home' button and Elvis is ready for use (initially select a different test to the one still highlighted as the cached tablet data can sometimes cause initial incorrect display. This resolves when another test is selected). N.B. The test files will need to be manually updated as per this section whenever a new tests or modified tests are updated to the central on-line server.

Using your Elvis for the first time

20. **Initial tests.** The tester will now display the 4 default example tests. Before connecting any cables, run the 24-pin test. Tap the '24Pin Example'. This will load the first example test, display the test instructions and associated pictures. Tap 'TEST'. The unit will then run the 24pin test and (as



there are no cables connected) display the 'FAIL' message. Now fit the included 25 Pin D-Sub from Output 1 to Input 1. **Be very careful to align the connectors properly and do not bend the pins. Very lightly tighten the locating screws.** Press 'Test' again and check the 'PASS' result is displayed. You can also now tun the 'SLOW TEST' should you

- wish. This repeats the test a predetermined number of times (set in the tests .json file) The tablet displays the 'Test Progress' bar and the blue halo on the front of the unit blinks to show the test is in progress. 'PASS' will be displayed once the test is complete
21. Repeat the test for the '48 Pin Example', with only the 1 D-Sub connected the unit will 'FAIL' the cable. It will confirm that the first 24 pins are connected, but pins 25-48 are open circuit. Fit the 2nd D-Sub from Output 2 to Input 2. Rerun the test and confirm that the cables now 'PASS'. (As a side note, if you wish to deliberately patch Output 1 to Input 2, you will receive the 'FAIL' message along with 'Open Circuit' and 'Short circuit to xxx' messages. Correctly re-plug the cables before continuing.
 22. Repeat for the 72 & 96 pin tests without the cable connected and then with. This will confirm that all pins are working and tests ok. **Always be very careful to align the connectors properly and do not bend the pins. Very lightly tighten the locating screws**

Adding expansion boards

23. **Optional extra Input/Output Expansion Boards.** Expansion boards should be fitted within a case using the bolt holes provided and appropriate 10mm stand offs. Be very careful not to crack the circuit board by overtightening your fixings or placing undue stress on the board. It is recommended all 18 locating holes are utilised and the expansion boards are located in an area with good future access to the connectors.

Once the expansion boards are securely in place the D-Sub connectors should be carefully inserted as per **Appendix 1**. Be careful not to bend the pins or overtighten the locking screws.

Additional Expansion boards can be daisy chained using short D-Sub male to female cables.

Creating your own tests

24. **Creating/editing Elvis-9600 test files.** Log in to you **Elvis Administration Account** (as detailed in Section 1) at <https://www.orbitalsound.com/login>.
25. On your account home page there will now be a section heading **'Your Elvis-9600 devices'**. Click the **'Upload or Update device config'** link. This will display a list of all your tests that will be installed on all your Elvis-9600 devices. From here you can create and manage your own tests.
26. You can download the example tests from the config page by clicking the red 'Download' icon next to the filename. Feel free to copy and modify these to your needs. **See Appendix 2 for details on .json file creation.**
27. Once a new test .json file has been created, click the 'Create New' button. A pop up window will appear with fields for 'Test Button Name' and 'Notes' plus a box to drag and

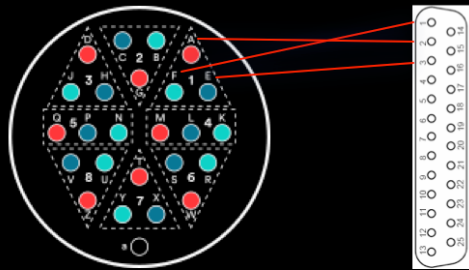
drop the .json file in. The 'Test Button Name' is automatically filled in from the .json file. Add notes about the test, click 'Create'. Once test files have been uploaded online, return to the tablet and update the test files once more. This will pull the new/edited files from the server. During the upload the .json file structure will be checked for continuity errors and if found will be rejected.

28. Finally click the ACTIVE tick box on the LHS to mark the tests you want to become available to the Elvis units.
29. All Elvis units on an Administrator Account share the same test files. If you wish to have different test file sets on different Elvis then separate Administration Accounts should be created. Please ask Nemesis for assistance with this.

Making and connecting your own panels

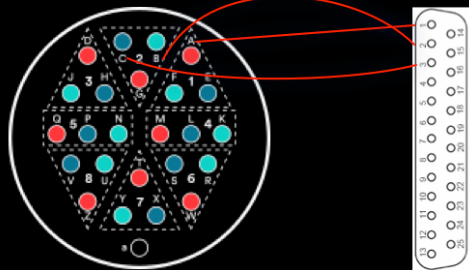
30. **25Pin D-Sub wiring.** We would recommend that the connectors to be tested are wired in accordance with the manufacturer guidelines. For example: an XLR would be wired from D-Sub 1, 2, 3 to XLR 1,2,3 (Ground, Hot+, Cold-), but in the case of a Veam multipin connector - instead of a sequential sequence (D-SUB 1, 2, 3 to Veam A, B, C) the manufacturer's directions should be adhered to (D-SUB 1, 2, 3 to Veam F, A, E) as per the diagram below.

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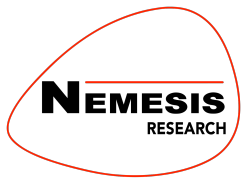


Ch. No.	Hot +	Cold -	Earth
1	A	E	F
2	G	C	B
3	D	H	J
4	M	L	K
5	Q	P	N
6	W	S	R
7	T	X	Y
8	Z	V	U

✗



Ch. No.	Hot +	Cold -	Earth
1	A	E	F
2	G	C	B
3	D	H	J
4	M	L	K
5	Q	P	N
6	W	S	R
7	T	X	Y
8	Z	V	U



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Final Commissioning

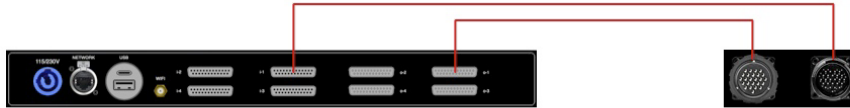
31. **Final tests & Commissioning.** Once the panels have been manufactured, install them securely in the unit/housing. Connect the D-sub in the corresponding Output/Input connector. Ensure that the appropriate test files have been downloaded to the Elvis-9600 tester. Connect a known working cable between the 2 connectors. Select the appropriate test on the tablet and run the test. Repeat this for all connectors/cables.

Daily Use

32. Press the power button and wait for Elvis-9600 to boot.
33. Power on the tablet with the power button on the side, wait for this to boot and enter the Elvis-9600 home screen.
34. Tap the test you wish to perform.
35. Follow the onscreen instructions regarding connecting cables to appropriate sockets (Ensure only the cable to be tested is connected).
36. Press 'TEST' (This performs a fast continuity test checking every pin for continuity and short circuits).
-Or-
Press 'SLOW TEST' (This runs the fast test on a loop a set number of times, normally in the 1000's, allowing manipulation of the cable along its length to find intermittent faults) and wait for the 'Test progress' bar to complete.
37. Once the test has completed note 'PASS' or 'FAIL' as reported by Elvis-9600. (The 'FAIL' report will list the open/short circuits).
38. Disconnect the cable.
39. Repeat as necessary or choose a different test.

Appendix 1- Optional extra Input/Output Expansion Boards

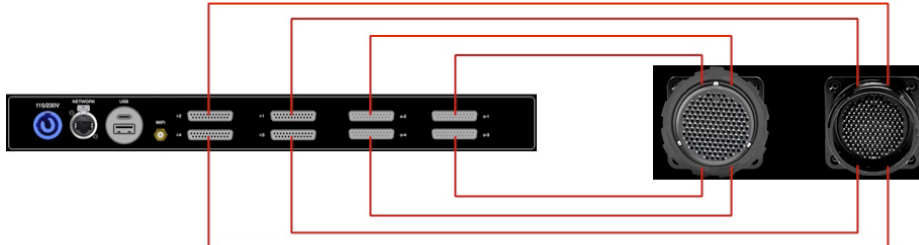
Standard ELVIS-9600 Operation



Using Input connector 1 and Output connector 1 testing 24 pins, for example 1 x 24 pin Veam multicore.



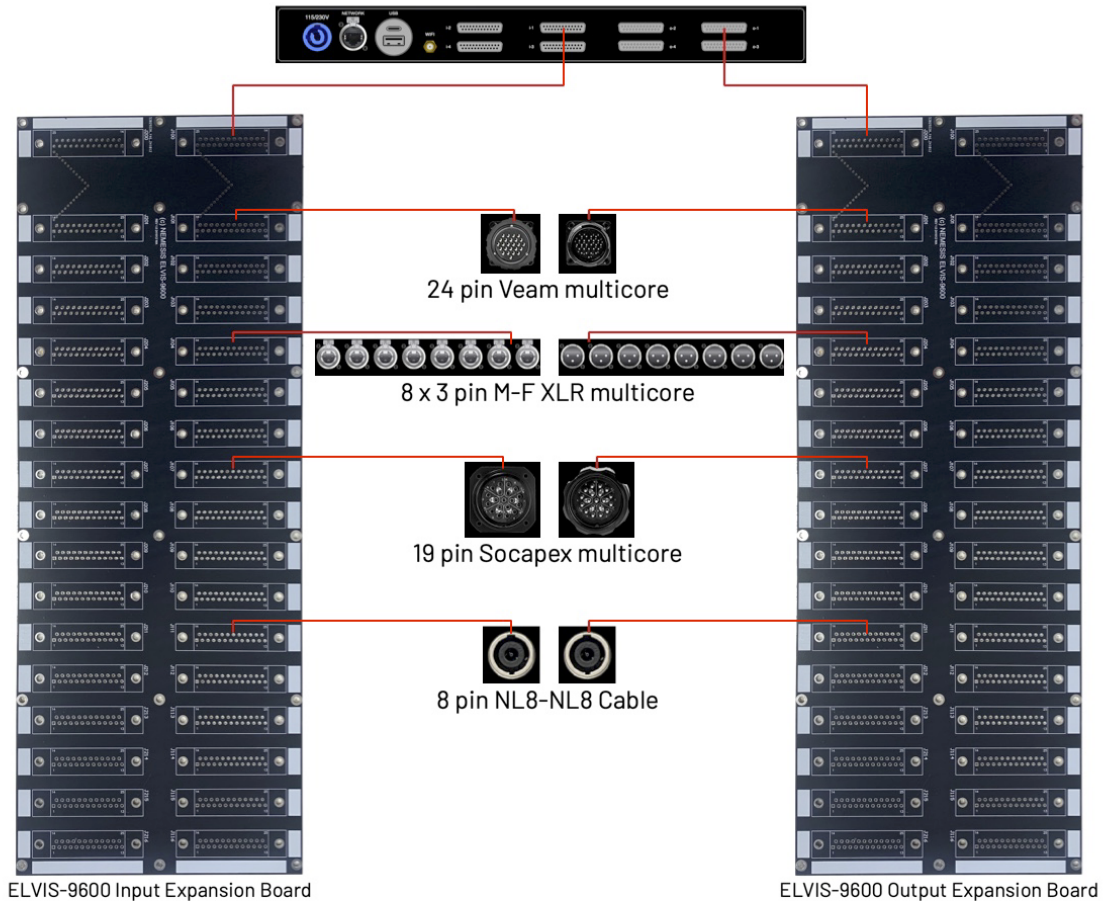
Using Input connectors 1&2 and Output connectors 1&2 testing 48 pins, for example 1 x 48 pin Veam multicore.



Using Input connectors 1,2,3&4 and Output connectors 1,2,3&4 testing 96 pins, for example 1 x 96 pin Veam multicore.

One set of ELVIS-9600 Expansion Boards allow the user to add additional connectors in parallel to the test sequence and is available in Input or Output format. Each fitted with 32 standard D-Sub connectors (first 24 pins wired).

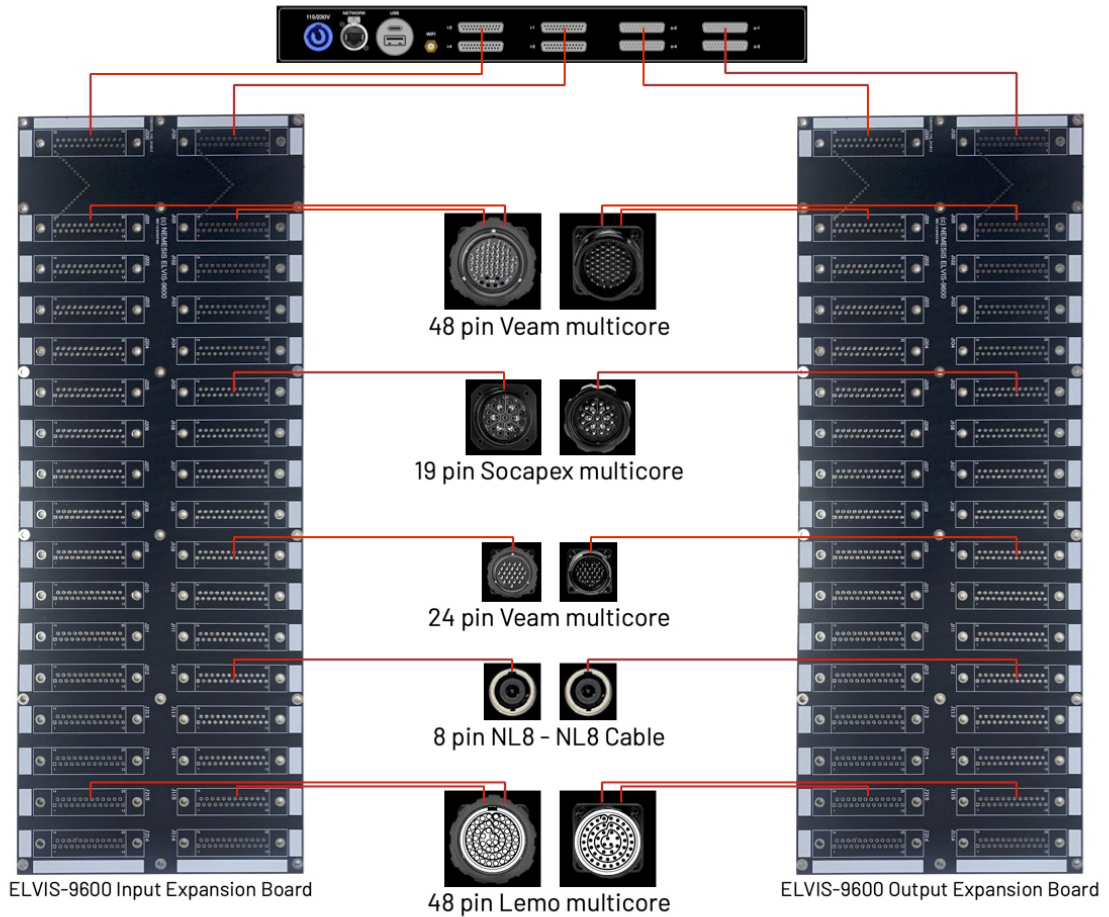
ELVIS-9600 Operation with Expansion Boards



Using Input connector 1 and Output connector 1, allowing for 16 additional sets of (up to) 24 pin connectors, using standard D-Subs
(Expansion boards can easily be daisy-chained to increase the test sets from 16 to 32 etc etc)

One set of ELVIS-9600 Expansion Boards allow the user to add additional connectors in parallel to the test sequence and is available in Input or Output format. Each fitted with 32 standard D-Sub connectors (first 24 pins wired).

ELVIS-9600 Operation with Expansion Boards

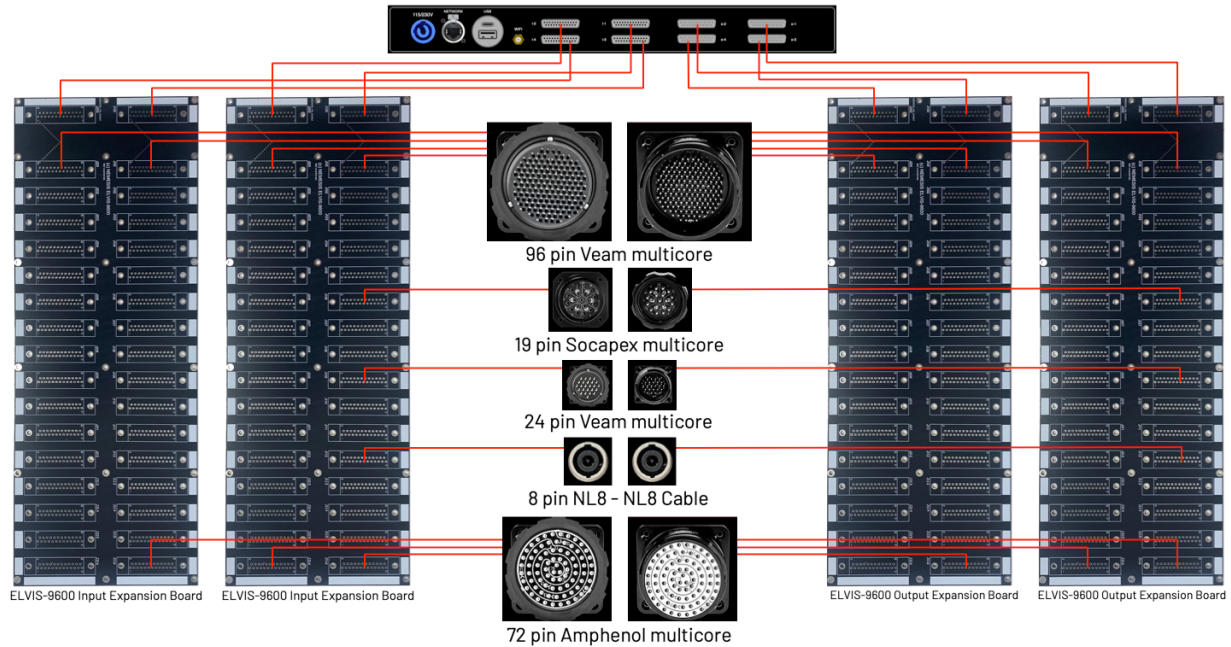


Using Input connectors 1 & 2 and Output connectors 1 & 2, allowing for 16 additional sets of (up to) 48 pin connectors, using standard D-Subs
(Expansion boards can easily be daisy-chained to increase the test sets from 16 to 32 etc etc)

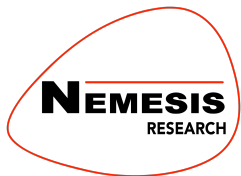
ELVIS-9600 Expansion Boards

Two sets of ELVIS-9600 Expansion Boards allow the user to add additional connectors in parallel to the test sequence and is available in Input or Output format. Each fitted with 32 standard D-Sub connectors (first 24 pins wired).

ELVIS-9600 Operation with Expansion Boards



Using Input connectors 1,2,3 & 4 and Output connectors 1,2,3 & 4, allowing for 16 additional sets of (up to) 96 pin connectors, using standard D-Subs
(Expansion boards can easily be daisy-chained to increase the test sets from 16 to 32 etc etc)



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Appendix 2- Elvis 9600 test File structure

Test files are stored as .json files. The file names are not shown to the end user. File name should be less than 20 characters long and not contain spaces.

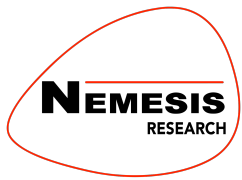
Details:

testInfo	
name	A brief description of the test. This shows on the dropdown menu to select at test
descriptionHTML	More detailed description of the test. Use HTML markup to add any formatting required. Max 1024 characters
numberOfPins	The number of pins to be tested.
type	p,t p – test each pin once to all other pins t – allows tails fan outs to be tested in any order. The test will complete when all tails have been connected. - For 't', outputs 1, 2, 3 etc....(determined by 'repeat' i.e how many pins are in each connector) are 'listened' to by all inputs. When pin 1 is detected by an input the following sequential inputs are then tested also (determined by 'repeat'). The result is stored in memory. Once all connectors have been tested, the result for the tails is displayed as normal.
showLabels	1, 0 1 – show pinInfo.labels when displaying fault information. 0 – show pin number when displaying fault information
duration	0, no slow test option >1, slow test option, number of times to repeat the test
tailsDelay	Delay in ms between Elvis sensing that a connection has been made, and starting the test. This setting only affects type=t and will default to 500ms if not supplied
order	Integer to determine order tests are displayed on screen

startPin	The pin number to start the test on. Defaults to 1. If a tails test, $[\text{startPin}] \bmod [\text{pinInfo.repeat}]$ must equal 1
passHelpMessageHTML	Message returned when test passes. Use HTML markup to add any formatting required. Max 1024 characters
failHelpMessageHTML	Message returned when test fails. Use HTML markup to add any formatting required. Max 1024 characters
pinInfo	
repeat	The number of pins in a channel of a multicore. E.g. speaker socapex 2, audio multicore 3.
labels	An array of friendly labels for each pin. If repeat = 0 %% will be replaced by pin number when displayed. If repeat > 1 then %% will be replaced by $[\text{pinNumber}] + [\text{repeat} - 1] / [\text{repeat}]$ rounded down. Only the first [repeat] labels will be used.
pins	For future use. This could be used to provide an array of pin labels on the physical multicore on a fault report
errorHelp	
json	The json returned after if the test generates the error to provide help on. Max 1024 characters
messageHTML	Help message returned when this test error occurs. Use HTML markup to add any formatting required. Max 1024 characters

Example:

```
{
  "testInfo": {
    "name": "Appendix Example",
    "descriptionHTML": "<br><h3>8-Way Tails Breakout </h3><p>Connect Male male Veam to <b><span style='color:DeepPink;'>X</span></b></h3><p>Connect Female XLR 1 to <b><span style='color:DeepPink;'>B1</span></b></h3><p>Click 'DO THE TEST NOW'.</p><p>Disconnect XLR 1 and connect XLR 2 <b><span style='color:DeepPink;'>B1</span></b>Continue until all tails have been tested.</h3><p>to The test will complete automatically and display results.</p>",
```



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```
"numberOfPins": 24,
"type": "t",
"showLabels": 1,
"duration": 0,
"tailsDelay": 500,
"order": 501,
"passHelpMessageHTML": "<span style=\"color: white;\">You have passed the test you
lucky cable",
"failHelpMessageHTML": "Unfortunately you have not made the cut and will get cut up!"

},
"pinInfo": {
  "repeat": 3,
  "labels": [
    "Channel %% ground",
    "Channel %%+",
    "Channel %%-"
  ],
  "pins": [
    "F",
    "A",
    "E",
    "B",
    "G",
    "C",
    "J",
    "D",
    "H",
    "K",
    "M",
    "L",
    "N",
    "Q",
    "P",
    "R",
    "W",
    "S",
    "Y",
    "T",
    "X",
    "U",
    "Z",
    "V"
  ]
},
"errorHelp": {
  "json": {
    "errors": [
      {
        "pin": "Error found when testing: Channel 8 ground",
        "pinErrors": [
```



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