

## Shortcut, Playback And Program Wing API Specification 1.7

### Purpose

This document specifies the interface requirements for application programs to use the ethernet based Shortcut, Playback, and Program wings as input devices for lighting control.

### Application Messages

The application program must listen on port 3330 for UDP messages from the wing. The wing will send a message whenever a key is pressed or released, a fader is moved or an encoder is rotated.

The application program can also send UDP messages to the playback wing on port 3330, to control the seven segment display.

### TCP Connection

Starting from firmware version 1.35 the wings will also accept TCP connection. This form of connection is a lot more reliable as the PC will establish a connection with the wing and each packet is acknowledged .

To open a TCP connection you must use the same port 3330.

The wing will also close the connection after 3 seconds of inactivity, and revert back to UDP mode. You must send a packet every couple seconds, even if the packet is not valid it will keep the connection open.

### 1. Playback Wing Output

The format of the message the Playback wing sends is shown below.

The key number assigned to each of the 40 main keys is 0 to 39 reading left to right from top to bottom of the keyboard.

The fader number assigned to each of the 10 faders is 0 to 9 reading from left to right of the keyboard.

Size In Bytes	Description
4	Message type, 'WODD' for wing output data.

Size In Bytes	Description
1	Wing firmware version number, 0 to 255.
1	Wing flags. 1=Playback wing.
1	Bit 7: 0=PageUp key pressed, 1=PageUp key released. Bit 6: 0=PageDown key pressed, 1=PageDown key released. Bit 5: 0=Back key pressed, 1=Back key released. Bit 4: 0=Go key pressed, 1=Go key released.
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 32. Bit 6: Key 33. Bit 5: Key 34. Bit 4: Key 35. Bit 3: Key 36. Bit 2: Key 37. Bit 1: Key 38. Bit 0: Key 39.
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 29. Bit 6: Key 22. Bit 5: Key 23. Bit 4: Key 24. Bit 3: Key 25. Bit 2: Key 26. Bit 1: Key 30. Bit 0: Key 31.
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 16. Bit 6: Key 17. Bit 5: Key 18. Bit 4: Key 19. Bit 3: Key 20. Bit 2: Key 21. Bit 1: Key 27. Bit 0: Key 28.

Size In Bytes	Description
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 8. Bit 6: Key 9. Bit 5: Key 10. Bit 4: Key 11. Bit 3: Key 12. Bit 2: Key 13. Bit 1: Key 14. Bit 0: Key 15.
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 0. Bit 6: Key 1. Bit 5: Key 2. Bit 4: Key 3. Bit 3: Key 4. Bit 2: Key 5. Bit 1: Key 6. Bit 0: Key 7.
3	Unused.
10	Fader state for faders 0 to 9. Valid range is 0 to 255.
3	Unused.

## ***2. Playback Wing Input***

The format of the message the Playback wing receives is shown below.

<b>Size In Bytes</b>	<b>Description</b>
4	Message type, 'WIDD' for wing input data.
1	Version number, set to 1.
32	Unused.
1	Seven segment decimal LED display data, in BCD. Valid range is BCD values from 00H to 99H.
4	Unused.

### 3. Shortcut Wing Output

The format of the message the Shortcut wing sends is shown below.

The key number assigned to each of the 60 main keys is 0 to 59 reading left to right from top to bottom of the keyboard.

Size In Bytes	Description
4	Message type, 'WODD' for wing output data.
1	Wing firmware version number, 0 to 255.
1	Wing flags. Bit 3: 0=PageUp key pressed, 1=PageUp key released. Bit 2: 0=PageDown key pressed, 1=PageDown key released. Bits 1,0: 2=Shortcut wing.
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 56. Bit 6: Key 57. Bit 5: Key 58. Bit 4: Key 59.
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 48. Bit 6: Key 49. Bit 5: Key 50. Bit 4: Key 51. Bit 3: Key 52. Bit 2: Key 53. Bit 1: Key 54. Bit 0: Key 55.
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 40. Bit 6: Key 41. Bit 5: Key 42. Bit 4: Key 43. Bit 3: Key 44. Bit 2: Key 45. Bit 1: Key 46. Bit 0: Key 47.

Size In Bytes	Description
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 32. Bit 6: Key 33. Bit 5: Key 34. Bit 4: Key 35. Bit 3: Key 36. Bit 2: Key 37. Bit 1: Key 38. Bit 0: Key 39.
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 24. Bit 6: Key 25. Bit 5: Key 26. Bit 4: Key 27. Bit 3: Key 28. Bit 2: Key 29. Bit 1: Key 30. Bit 0: Key 31.
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 16. Bit 6: Key 17. Bit 5: Key 18. Bit 4: Key 19. Bit 3: Key 20. Bit 2: Key 21. Bit 1: Key 22. Bit 0: Key 23.
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 8. Bit 6: Key 9. Bit 5: Key 10. Bit 4: Key 11. Bit 3: Key 12. Bit 2: Key 13. Bit 1: Key 14. Bit 0: Key 15.

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Size In Bytes	Description
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 0. Bit 6: Key 1. Bit 5: Key 2. Bit 4: Key 3. Bit 3: Key 4. Bit 2: Key 5. Bit 1: Key 6. Bit 0: Key 7.
16	Unused.

#### **4. Program Wing Output**

The format of the message the Program wing sends is shown below.

The key number assigned to each of the 62 main keys is 0 to 61 reading left to right from top to bottom of the keyboard.

The Encoder buttons are assigned numbers 0 to 2.

<b>Size In Bytes</b>	<b>Description</b>
4	Message type, 'WODD' for wing output data.
1	Wing firmware version number, 0 to 255.
1	Wing flags. 3=Program wing.
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 33. Bit 6: Key 59. Bit 5: Key 60. Bit 4: Key 61  Bit 3: Encoder 0. Bit 2: Encoder 1. Bit 1: Encoder 2
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 51 Bit 6: Key 52. Bit 5: Key 53. Bit 4: Key 41. Bit 3: Key 42. Bit 2: Key 43 Bit 1: Key 31 Bit 0: Key 32

Size In Bytes	Description
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 58 Bit 6: Key 54 Bit 5: Key 55 Bit 4: Key 44 Bit 3: Key 45 Bit 2: Key 34 Bit 1: Key 35 Bit 0: Key 57
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 39 Bit 6: Key 40 Bit 5: Key 46 Bit 4: Key 47 Bit 3: Key 48 Bit 2: Key 49 Bit 1: Key 50 Bit 0: Key 56
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 26 Bit 6: Key 27 Bit 5: Key 28 Bit 4: Key 29 Bit 3: Key 30 Bit 2: Key 36 Bit 1: Key 37 Bit 0: Key 38
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 18 Bit 6: Key 19 Bit 5: Key 20 Bit 4: Key 21 Bit 3: Key 22 Bit 2: Key 23 Bit 1: Key 24 Bit 0: Key 25

Size In Bytes	Description
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 15 Bit 1: Key 16 Bit 0: Key 17
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 7. Bit 6: Key 8 Bit 5: Key 9 Bit 4: Key 10 Bit 3: Key 11 Bit 2: Key 12 Bit 1: Key 13 Bit 0: Key 14
1	Key states where 0=key pressed, 1=key released. Bit 7: Key 0. Bit 6: Key 1. Bit 5: Key 2 Bit 4: Key 3. Bit 3: Key 4 Bit 1: Key 5 Bit 0: Key 6
10	Unused
1	255: Encoder 0 turned clockwise 1: Encoder 0 turned anti-clockwise 0: Encoder 0 unchanged
1	255: Encoder 1 turned clockwise 1: Encoder 1 turned anti-clockwise 0: Encoder 1 unchanged
1	255: Encoder 2 turned clockwise 1: Encoder 2 turned anti-clockwise 0: Encoder 2 unchanged

## 5. Program Wing Input

The format of the message the Program wing receives is shown below.

Size In Bytes	Description
4	Message type, 'WIDD' for wing input data.
1	Version number, set to 1.
1	Command, where 0=Do nothing, 1=Clear LCD, 2=Write LCD.
1	LCD Column. Valid range is 0 to 19.
1	LCD Row. Valid range is 0 to 3.
21	Zero terminated text to display on LCD starting at the LCD row and LCD column. This is only used when Command=2.
12	Unused.