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2 Introduction

Timecode is a type of digital time reference signal used extensively in broadcasting and post-production environments. Professional tape machines and VTRs use timecode as a tape position indication, as do many other types of broadcast equipment. It is also used as a precise time-of-day reference in all broadcast areas, accurate to one hundredth of a second. Timecode can be transmitted in various forms, sometimes embedded with other signal types, but if it is to be routed as an independent signal the common method is as a balanced, two wire circuit, known as LTC (longitudinal timecode).

2.1 The Sirius Timecode range

There are two builds of Timecode cards in the Sirius series 2 range: -

- 4792: Sirius 2 Timecode input card.
- 4799: Sirius 2 Timecode output card.

This manual also describes the Timecode cards in the Sirius series 1 range for existing systems: -

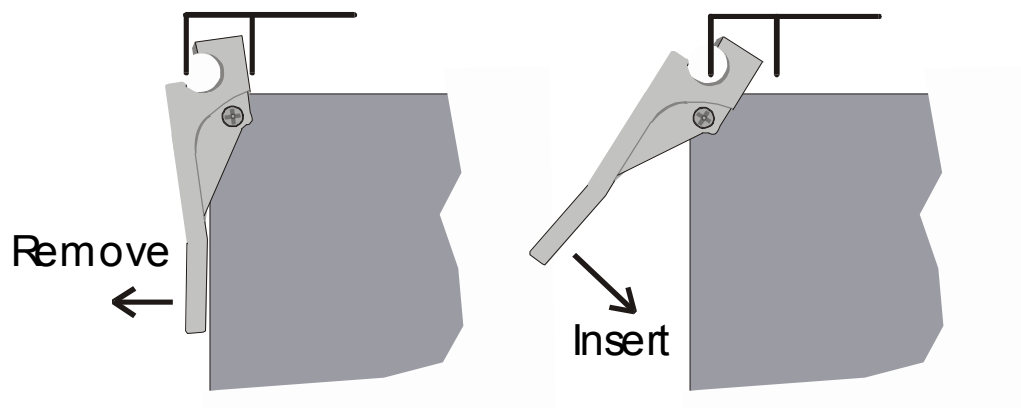
- 4793: Sirius 1 Timecode input card.
- 4797: Sirius 1 Timecode output card.

There are also four builds of connector panel, or 'spine card', to accompany the I/O cards:

- 1763: 50 way D type plug for 16 balanced inputs on upper half of 7U frame, and for all inputs on a 4U and 16U frame
- 1766: 50 way D type socket for 16 balanced outputs on upper half of 7U frame, and for all outputs on a 4U and 16U frame
- 1770: 50 way D type plug for 16 balanced inputs on lower half of 7U frame only
- 1771: 50 way D type socket for 16 balanced outputs on lower half of 7U frame only

The spine cards must be fitted into the correct section of the 4U or 7U frame to function, and are labelled INPUT and OUTPUT to ensure that they are not fitted upside down.

2.2 Inserting and removing cards



As can be seen by the above sectional drawing, all card handles locate into the metalwork of the Sirius frame in such a way that allows easy insertion and removal. Pulling the bottom of the handle outwards will lever the card out of its socket for removal. When inserting the module, the handle must be lifted and located in the frame as shown, before using the handle to push the card fully home. Static precautions must be observed when inserting and removing all system modules.

The user must note that cards in the bottom of a 7U frame are fitted upside down, and therefore their handles are at the bottom. In a 16U frame, handles are to the left in the left hand side of the frame, and to the right in the right hand side.

2.3 Timecode Input Card.



Figure 1: Sirius Timecode Input Card

The 8-channel timecode input card is designed for Sirius router range. There are no user adjustments, switches or indications available on this card.

2.4 Timecode Output Card



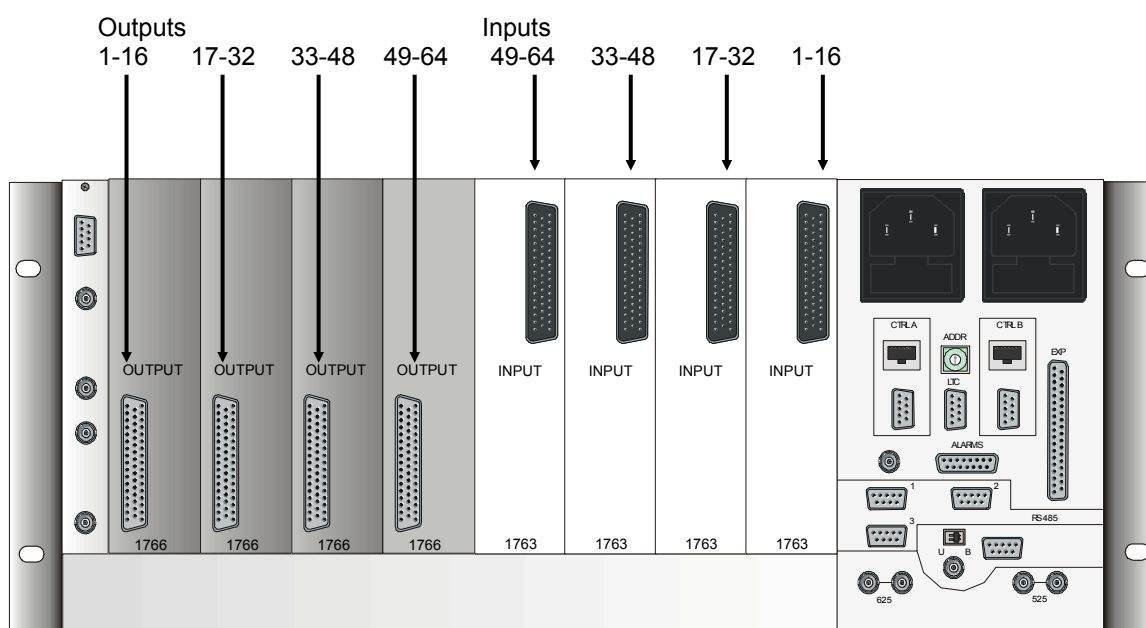
Figure 2: Sirius Timecode Output Card

The 8-channel timecode output card is designed for Sirius router range. There are no user adjustments, switches or indications available on this card.

3 Rear panel connector layouts

3.1 4U frame with the Timecode cards

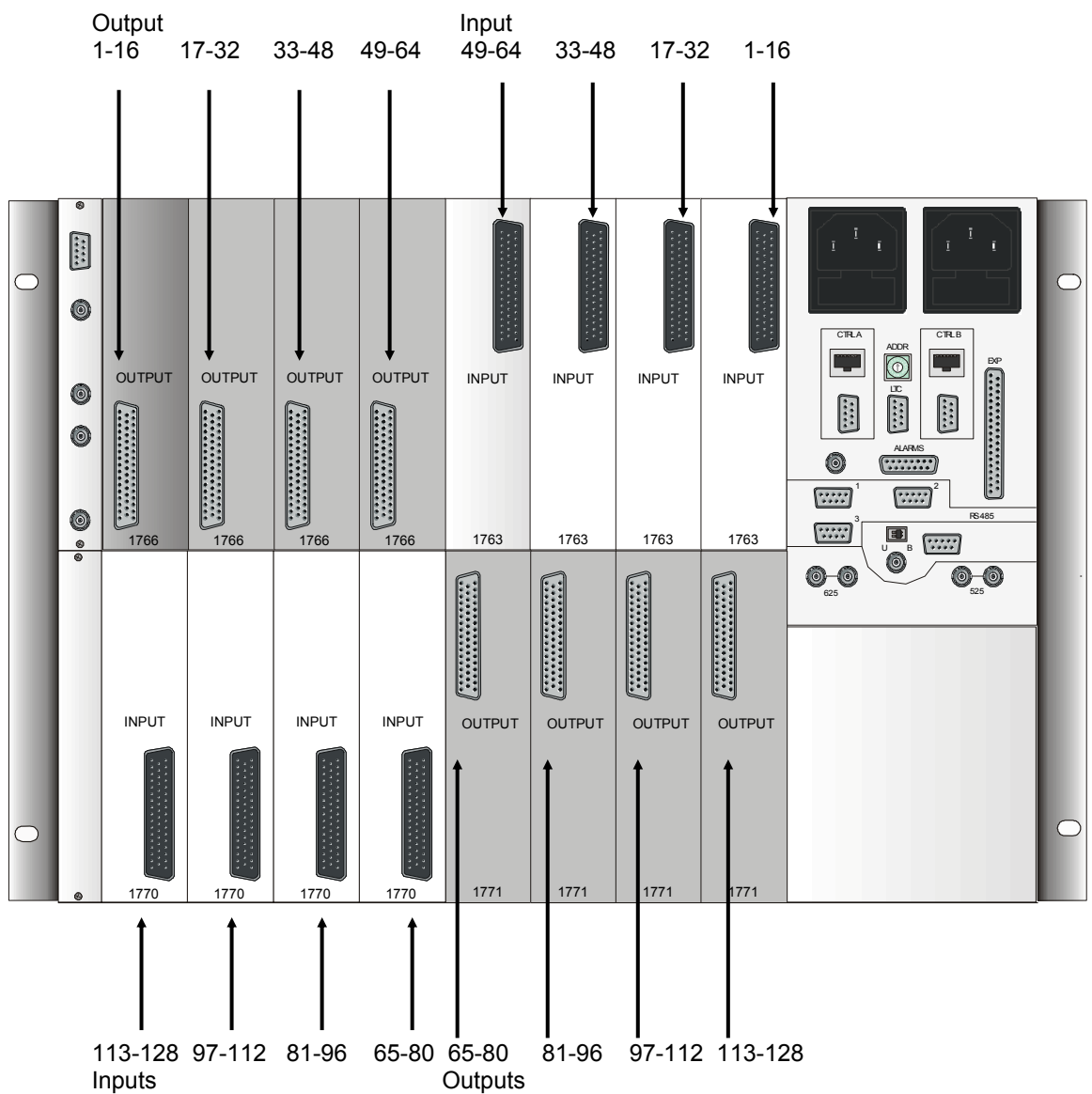
When viewed from the rear, the D type connectors on a 4U frame fully equipped with timecode input and output cards, will be allocated as follows. The spine card number is also indicated:



The above configuration shows a 'square' router with the same number of inputs as outputs, however it is possible to 'trade' extra inputs for outputs in this frame, in which case the connector types will change as appropriate. See Section 3 of the main Sirius user guide.

3.2 7U frame with Timecode cards

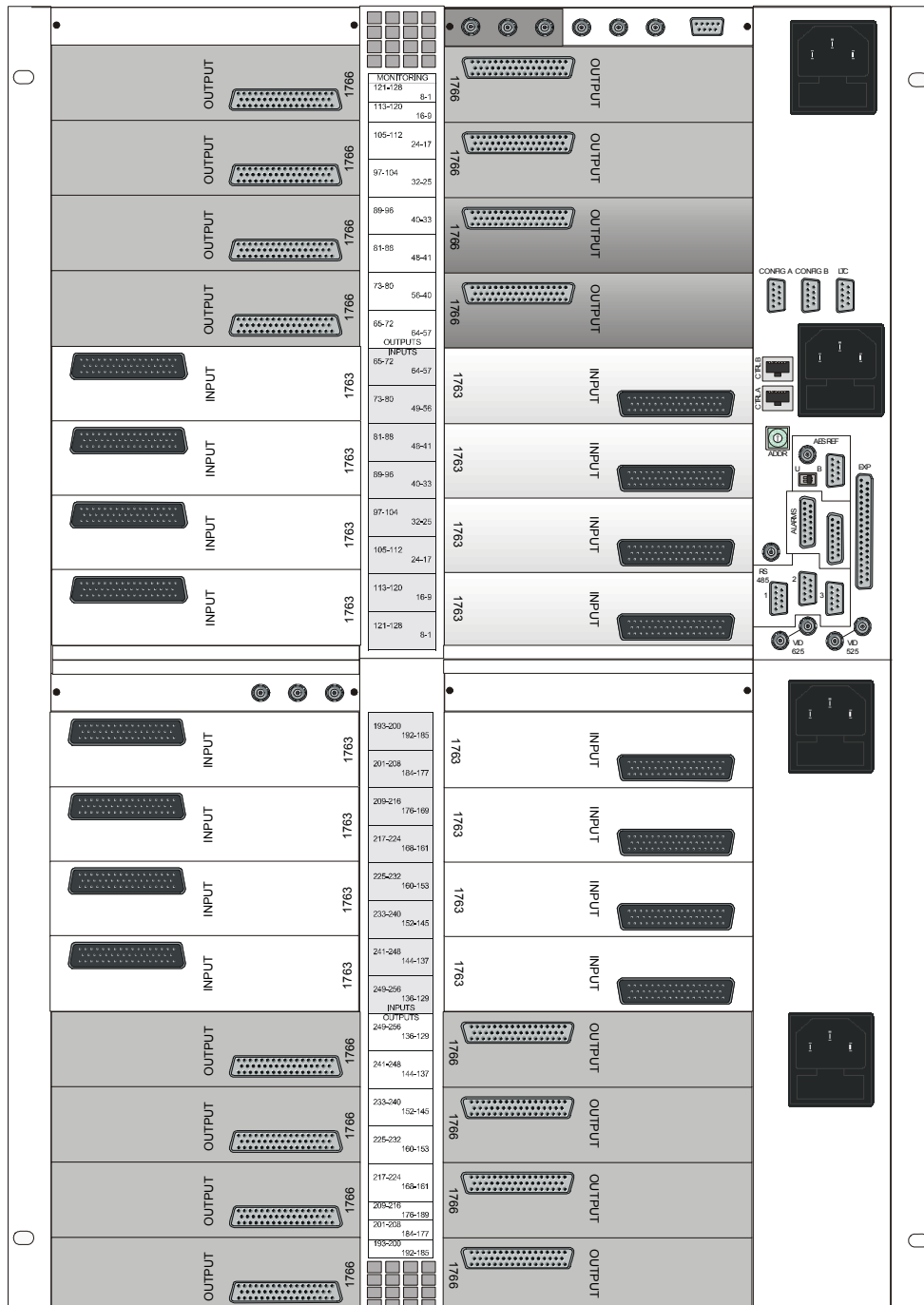
When viewed from the rear, the D type connectors on a 7U frame fully equipped with timecode input and output cards, will be allocated as follows. The spine card number is also indicated:





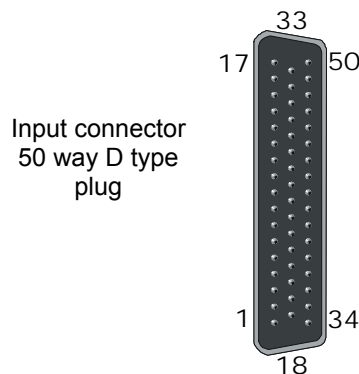
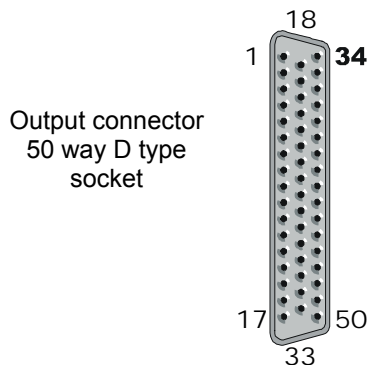
3.3 16U frame with Timecode cards

When viewed from the rear, the D type connectors on a 16U frame fully equipped with timecode input and output cards, will be allocated as follows. All input spine cards are type 1763, and outputs type 1766:



3.4 50 way D type connector pinout

The pin allocations for the 50-way D type plug and socket used for Timecode connections are as follows:



Channel	Function	Pin
1	Signal +	18
	Signal -	2
	Signal GND	34
2	Signal +	35
	Signal -	19
	Signal GND	3
3	Signal +	20
	Signal -	4
	Signal GND	36
4	Signal +	37
	Signal -	21
	Signal GND	5
5	Signal +	22
	Signal -	6
	Signal GND	38
6	Signal +	39
	Signal -	23
	Signal GND	7
7	Signal +	24
	Signal -	8
	Signal GND	40
8	Signal +	41
	Signal -	25
	Signal GND	9
Screen	Chassis GND	1

Channel	Function	Pin
9	Signal +	26
	Signal -	10
	Signal GND	42
10	Signal +	43
	Signal -	27
	Signal GND	11
11	Signal +	28
	Signal -	12
	Signal GND	44
12	Signal +	45
	Signal -	29
	Signal GND	13
13	Signal +	30
	Signal -	14
	Signal GND	46
14	Signal +	47
	Signal -	31
	Signal GND	15
15	Signal +	32
	Signal -	16
	Signal GND	48
16	Signal +	49
	Signal -	33
	Signal GND	17
Screen	Chassis GND	50



4 Specification

Conforms to SMPTE 12M TE standard.

Frequency range: 1kHz to 300kHz.

Input: Must be greater than 270mV. 1K Ω ac coupled.

Output: 1V into 1k Ω , 50 Ω ac coupled.

Note:

- Normal Sirius monitoring is not available with Timecode cards.

4.1 Series 1 & 2 compatibility

- Series 2 Timecode cards (4792 & 4799) can be used with any Series 1 Crosspoint card.
- The Series 1 Timecode Output card (4797) can be used with any Sirius 600 series Crosspoint card.
- Do not mix the Series 1 Timecode Input card (4793) with the following Series 2 Crosspoint cards: 3908, 3912, 3913, 3962, 3969, 4908, 4911 or 4913.