

Supported LED ICs

This section lists the technical specifications and control parameters of the LED driver ICs supported by Light Stream devices.

Supported LED ICs

Chip Model (IC)	Connection Type	Data Rate (kbit/s)	Channels	Color Depth (Bit)	PWM Frequency (Hz)	Backup Line	Control via LS Player Port	Control via LS Converter (+Extender)	LS Converter Preset	LS Converter Addressing Preset	Datasheet (PDF)
APA102	2-Wire (Clocked)	☒	3	8 + 5 bit	19200	☒	☒	☒	☒	☒	☒ EN
APA102-1515	2-Wire (Clocked)	☒	3	8 + 5 bit	20000	☒	☒	☒	☒	☒	☒ EN
APA102-2020	2-Wire (Clocked)	☒	3	8 + 5 bit	20000	☒	☒	☒	☒	☒	☒ EN
APA107	2-Wire (Clocked)	☒	3	8 + 5 bit	9000	☒	☒	☒	☒	☒	☒ EN
APA107-2020	2-Wire (Clocked)	☒	3	8 + 5 bit	9000	☒	☒	☒	☒	☒	☒ EN
CS8812	Single Wire	800	3	8 ☒ 12 bit γ	8000	☒	☒	☒	☒	Auto	☒ EN
FW1906	Single Wire	800	6	8 bit	2600	☒	☒	☒	☒	Auto	☒ EN
GS8206	Single Wire	800	3	8 ☒ 12 bit γ	8000	☒	☒	☒	GS8206	Auto	☒ EN
GS8208	Single Wire	800	3	8 ☒ 12 bit γ	8000	☒	☒	☒	GS8206	Auto	☒ EN
GS8208B	Single Wire	800	3	8 ☒ 12 bit γ	8000	☒	☒	☒	GS8206	Auto	☒ EN
GS8513	Single Wire DMX	250 – 500	3	8 ☒ 16 bit γ	9000	☒☒	☒	☒	DMX	☒	☒ ZH
GS8515	Single Wire DMX	☒	☒	☒	☒	☒☒	☒	☒	DMX	☒	☒
GS8523	Single Wire DMX	200 – 850	3	8 ☒ 16 bit γ	9500	☒☒	☒	☒	DMX	☒	☒ ZH
GS8524	Single Wire DMX	200 – 850	4	8 ☒ 16 bit γ	9500	☒☒	☒	☒	DMX	☒	☒ ZH
GS8526	Differential DMX	200 – 850	4	8 ☒ 16 bit γ	300 - 9500	☒☒	☒	☒	DMX	☒	☒ EN
GS8802	Differential DMX (RDM)	200 – 500	4	8 ☒ 16 bit γ	240 - 31000	☒☒	☒	☒	DMX	☒	☒ EN
HC2912C-2020	Single Wire	800	3	8 bit	☒	☒	☒	☒	☒	Auto	☒ EN
HD107S	2-Wire (Clocked)	☒	3	8 + 5 bit	27000	☒	☒	☒	☒	☒	☒ EN
HD108	2-Wire (Clocked)	☒	3	16 + 5 bit gain	28000	☒	☒	☒	☒	☒	☒ EN
Hi512E	Differential DMX	250 – 1600	4	8 ☒ 16 bit γ	250 - 16000	☒☒	☒	☒	DMX	☒	☒ EN
Hi512E4	Differential DMX	250 – 1600	4	8 ☒ 16 bit γ	250 - 16000	☒☒	☒	☒	DMX	☒	☒ EN
Hi512ES	Differential DMX	250 – 1600	4	8 ☒ 16 bit γ	250 - 16000	☒☒	☒	☒	DMX	☒	☒ EN
LB1908	Single Wire	800	3	8 bit	8000	☒	☒	☒	☒	Auto	☒ EN
LPD6803	2-Wire (Clocked)	☒	3	5 bit	2500	☒	☒	☒	☒	☒	☒ EN

LPD8803	2-Wire (Clocked)	☒	6	7 bit	4000	☒	☒	☒	☒	☒	☒ EN · ☒ ZH
LPD8806	2-Wire (Clocked)	☒	6	7 bit	4000	☒	☒	☒	☒	☒	☒ EN · ☒ ZH
SK6812	Single Wire	800	3 - 4	8 bit	1200	☒	☒	☒	SK6812	Auto	☒ EN
SK9822	2-Wire (Clocked)	☒	3	8 + 5 bit	4700	☒	☒	☒	☒	☒	☒ EN
SM16703P	Single Wire	800	3	8 bit	1200	☒	☒	☒	☒	Auto	☒ EN
SM16703SP	Single Wire	800	3	8 bit	4700	☒	☒	☒	☒	Auto	☒ EN
SM16704	Single Wire	800	4	8 bit	1200	☒	☒	☒	☒	Auto	☒ EN
SM16704PB	Single Wire	800	4	8 bit	1200	☒	☒	☒	☒	Auto	☒ EN
SM16716	2-Wire (Clocked)	☒	3	8 bit	1030000	☒	☒	☒	☒	☒	☒ EN
SM18522P	Differential DMX	200 – 700	1 - 4	8 ☒ 16 bit γ	4000	☒☒	☒	☒	DMX	☒	☒ ZH
SM18522PS	Differential DMX	200 – 700	1 - 4	8 ☒ 16 bit γ	4000	☒☒	☒	☒	DMX	☒	☒ EN
SM19522PG	Differential DMX	200 – 750	1 - 6	8 ☒ 16 bit γ	32000	☒☒	☒	☒	DMX	☒	☒ EN
TM512AB3	Single Wire DMX	200 – 1000	3	8 bit	3600	☒☒	☒	☒	DMX	☒	☒ ZH
TM512AC	Differential DMX	200 – 1000	4	8 ☒ 16 bit γ	2000	☒☒	☒	☒	DMX	TM512AC	☒ EN · ☒ ZH
TM512AC0	Differential DMX	200 – 1000	3	8 bit	2000	☒☒	☒	☒	DMX	TM512AC	☒ ZH
TM512AC4	Differential DMX	200 – 1000	4	8 bit	3600	☒☒	☒	☒	DMX	TM512AC	☒ ZH
TM512ACE	Differential DMX	200 – 1000	3	8 ☒ 16 bit γ	2000	☒☒	☒	☒	DMX	TM512AC	☒ ZH
TM1803	Single Wire	400 / 800	3	8 bit	400	☒	☒	☒	TM1803	Auto	☒ EN · ☒ ZH
TM1804 (High speed)	Single Wire	800	3	8 bit	> 400	☒	☒	☒	WS2812	Auto	☒ EN · ☒ ZH
TM1804 (Low speed)	Single Wire	400	3	8 bit	> 400	☒	☒	☒	☒	Auto	☒ EN · ☒ ZH
TM1809	Single Wire	400 / 800	9	8 bit	400	☒	☒	☒	☒	Auto	☒ EN
TM1812	Single Wire	800	12	8 bit	400	☒	☒	☒	☒	Auto	☒ EN
TM1814	Single Wire	800	4	8 + 6 bit gain	☒	☒	☒	☒	☒	Auto	☒ EN
TM1829	Single Wire	800	3	8 + 5 bit gain	7000	☒	☒	☒	☒	Auto	☒ EN
TM1903	Single Wire	400 – 800	3	8 bit	☒	☒	☒	☒	☒	Auto	☒ EN
TM1914	Single Wire	400 – 800	3	8 bit	☒	☒	☒	☒	☒	Auto	☒ EN
TM1914A	Single Wire	800	3	8 bit	☒	☒	☒	☒	TM1914	Auto	☒ ZH
TM1934	Single Wire	400 – 800	3	8 bit	☒	☒	☒	☒	☒	Auto	☒ EN
UCS512	Differential DMX	200 – 500	1 - 4	8 bit	2000	☒☒	☒	☒	DMX	UCS512	☒ ZH
UCS512B3	Single Wire DMX	250 – 750	3	8 bit	3000	☒☒	☒	☒	DMX	☒	☒ EN
UCS512C	Differential DMX	200 – 500	1 - 4	8 ☒ 16 bit γ	2000	☒☒	☒	☒	DMX	UCS512	☒ ZH
UCS512C1	Differential DMX	200 – 750	1 - 4	8 ☒ 16 bit γ	16000	☒☒	☒	☒	DMX	UCS512	☒ EN · ☒ ZH
UCS512C1L	Differential DMX	200 – 750	1 - 4	8 ☒ 16 bit γ	16000	☒☒	☒	☒	DMX	UCS512	☒ EN · ☒ ZH
UCS512C2	Differential DMX	200 – 750	1 - 4	8 bit	16000	☒☒	☒	☒	DMX	UCS512	☒ EN · ☒ ZH

UCS512C2L	Differential DMX	200 – 750	1 - 4	8 bit	16000	☒	☒	☒	DMX	UCS512	☒ EN · ☒ ZH
UCS512C3	Differential DMX	200 – 750	1 - 4	8 bit	3390	☒	☒	☒	DMX	UCS512	☒ ZH
UCS512C4	Differential DMX	200 – 500	1 - 4	☒	3600	☒	☒	☒	DMX	UCS512	☒ ZH
UCS512C7	Differential DMX	200 – 750	1 - 4	8 ☒ 16 bit γ	16000	☒	☒	☒	DMX	UCS512	☒ EN
UCS512C7L	Differential DMX	200 – 750	1 - 4	8 ☒ 16 bit γ	16000	☒	☒	☒	DMX	UCS512	☒ EN
UCS512C7T	Differential DMX	200 – 750	1 - 4	8 ☒ 16 bit γ	16000	☒	☒	☒	DMX	UCS512	☒ EN
UCS512C8	Differential DMX	200 – 750	1 - 4	8 ☒ 16 bit γ	16000	☒	☒	☒	DMX	UCS512	☒ EN
UCS512C8L	Differential DMX	200 – 750	1 - 4	8 ☒ 16 bit γ	16000	☒	☒	☒	DMX	UCS512	☒ EN
UCS512CBL	Single Wire DMX	200 – 750	1 - 4	8 ☒ 16 bit γ	16000	☒	☒	☒	DMX	UCS512	☒ EN · ☒ ZH
UCS512CL	Differential DMX	200 – 500	1 - 4	8 ☒ 16 bit γ	2000	☒	☒	☒	DMX	UCS512	☒
UCS512CN	Differential DMX	200 – 500	1 - 4	8 ☒ 16 bit γ	2000	☒	☒	☒	DMX	UCS512	☒ ZH
UCS512CNB	Differential DMX	200 – 500	4	8 ☒ 16 bit γ	2000	☒	☒	☒	DMX	UCS512	☒
UCS512D	Differential DMX	200 – 500	1 - 4	8 ☒ 16 bit γ + 6 bit gain	250 - 4000	☒	☒	☒	DMX	UCS512	☒ EN
UCS512D-H	Differential DMX	200 – 500	1 - 4	8 ☒ 16 bit γ + 6 bit gain	250 - 4000	☒	☒	☒	DMX	UCS512	☒ EN
UCS512DHN	Differential DMX	200 – 750	1 - 4	8 ☒ 16 bit γ + 6 bit gain	250 - 4000	☒	☒	☒	DMX	UCS512	☒ ZH
UCS512G	Differential DMX	200 – 500	1 - 6	8 ☒ 16 bit γ + 6 bit gain	250 - 32000	☒	☒	☒	DMX	UCS512	☒ ZH
UCS512G4	Differential DMX	200 – 500	1 - 4	8 ☒ 16 bit γ + 6 bit gain	250 - 32000	☒	☒	☒	DMX	UCS512	☒ ZH
UCS512G4H	Differential DMX	200 – 500	1 - 4	8 ☒ 16 bit γ + 6 bit gain	250 - 32000	☒	☒	☒	DMX	UCS512	☒ ZH
UCS512G6	Differential DMX	200 – 500	1 - 6	8 ☒ 16 bit γ + 6 bit gain	250 - 32000	☒	☒	☒	DMX	UCS512	☒ ZH
UCS512G6H	Differential DMX	200 – 500	1 - 6	8 ☒ 16 bit γ + 6 bit gain	250 - 32000	☒	☒	☒	DMX	UCS512	☒ ZH
UCS512H	Differential DMX	200 – 750	1 - 4	8 ☒ 16 bit γ	250 - 32000	☒	☒	☒	DMX	UCS512	☒ EN
UCS512H0L	Differential DMX	200 – 750	Master*	☒	☒	☒	☒	☒	DMX	☒	☒ EN
UCS512H4	Differential DMX	200 – 750	1 - 4	8 ☒ 16 bit γ	250 - 32000	☒	☒	☒	DMX	UCS512	☒ EN
UCS512H4L	Differential DMX	200 – 750	4	8 ☒ 16 bit γ	250 - 32000	☒	☒	☒	DMX	UCS512	☒ EN

UCS512H5L	Differential DMX	200 – 750	1 - 4	8 \times 16 bit γ	250 - 32000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	DMX	UCS512	EN
UCS512K	Differential DMX	250 – 750	1 - 128	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	DMX	<input checked="" type="checkbox"/>	EN
UCS512KH	Differential DMX	250 – 750	1 - 128	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	DMX	<input checked="" type="checkbox"/>	EN
UCS512KHB	Differential DMX	250 – 750	1 - 128	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	DMX	<input checked="" type="checkbox"/>	EN
UCS512KLB	Differential DMX	250 – 750	1 - 128	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	DMX	<input checked="" type="checkbox"/>	EN
UCS1903 (High speed)	Single Wire	800	3	8 bit	400	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	UCS1903	Auto	EN
UCS1903 (Low speed)	Single Wire	400	3	8 bit	400	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	EN
UCS1904	Single Wire	800	3	8 bit	1500	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	ZH
UCS2903	Single Wire	800	3	8 bit	1500	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	EN
UCS2904B	Single Wire	800	4	8 bit	1800	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	EN
UCS5603	Single Wire	800	3	12 + 4 bit gain	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	EN
UCS7604	Single Wire	800 / 1600	4	8 \times 16 bit γ + 4 bit gain	16000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	UCS7604	Auto	EN
UCS7614	Single Wire	800 / 1600	4	8 \times 16 bit γ + 4 bit gain	32000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	ZH
UCS8603	Single Wire	800 / 1600	3	16 + 4 bit gain	8000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	GS8206	Auto	EN
UCS8903	Single Wire	800	3	16 + 5 bit gain	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	UCS8903	Auto	EN
UCS8904A	Single Wire	800	4	16 bit	1000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	UCS8904	Auto	EN
UCS8904B	Single Wire	800	4	16 bit	4000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	UCS8904	Auto	EN
UCS9812	Single Wire	1100	12	16 + 4 bit gain	5000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	EN
WS2801	2-Wire (Clocked)	<input checked="" type="checkbox"/>	3	8 bit	2500	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EN
WS2801S	2-Wire (Clocked)	<input checked="" type="checkbox"/>	3	8 bit	2500	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EN
WS2805	Single Wire	800	5	8 bit	4000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	WS2812	Auto	EN
WS2811	Single Wire	800	3	8 bit	4000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	WS2811	Auto	EN
WS2811C	Single Wire	800	3	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	EN
WS2811L	Single Wire	<input checked="" type="checkbox"/>	3	8 bit	400	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	WS2811L	Auto	<input checked="" type="checkbox"/>
WS2812	Single Wire	800	3	8 bit	400	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	WS2812	Auto	EN
WS2812B-2020	Single Wire	800	3	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	WS2812	Auto	ZH
WS2812B-2020-V6	Single Wire	800	3	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	WS2812	Auto	EN
WS2812B-Mini-V3J	Single Wire	800	3	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	WS2812	Auto	EN
WS2812B-Mini-V6	Single Wire	800	3	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	WS2812	Auto	ZH
WS2812B-V5-W	Single Wire	800	3	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	WS2812	Auto	EN
WS2812C	Single Wire	800	3	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	EN
WS2812C-4020	Single Wire	800	3	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	EN
WS2812E-V5-W	Single Wire	800	3	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	ZH
WS2812S	Single Wire	800	3	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	EN
WS2813	Single Wire	800	3	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	EN
WS2813B-RGBW	Single Wire	800	4	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	EN
WS2813B-V5-W	Single Wire	800	3	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Auto	EN
WS2814	Single Wire	800	4	8 bit	2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	WS2814	Auto	EN

WS2814A	Single Wire	800	4	8 bit	2000	☒	☒	☒	WS2814	Auto	☒ EN
WS2814B	Single Wire	800	4	8 bit	4000	☒	☒	☒	WS2814	Auto	☒ ZH
WS2814C	Single Wire	800	4	8 bit	4000	☒	☒	☒	WS2814	Auto	☒ ZH
WS2814D	Single Wire	800	4	8 bit	2000	☒	☒	☒	WS2814	Auto	☒ ZH
WS2814F	Single Wire	800	4	8 bit	2000	☒	☒	☒	☒	Auto	☒ ZH
WS2815	Single Wire	800	3	8 bit	2000	☒	☒	☒	WS2812	Auto	☒ EN
WS2815A-5054MP	Single Wire	800	3	8 bit	4000	☒	☒	☒	WS2812	Auto	☒ ZH
WS2815B-V1	Single Wire	800	3	8 bit	4000	☒	☒	☒	WS2812	Auto	☒ EN
WS2815C	Single Wire	800	3	8 bit	4000	☒	☒	☒	WS2812	Auto	☒ EN
WS2815F	Single Wire	800	3	8 bit	4000	☒	☒	☒	WS2812	Auto	☒ ZH
WS2816A	Single Wire	800	3	16 + 5 bit gain	10000	☒	☒	☒	WS2812	Auto	☒ EN
WS2816B-2020	Single Wire	800	3	16 + 4 bit γ	10000	☒	☒	☒	WS2812	Auto	☒ EN
WS2816B-2121	Single Wire	800	3	16 + 4 bit γ	10000	☒	☒	☒	WS2812	Auto	☒ EN
WS2816B-2427	Single Wire	800	3	16 + 4 bit γ	10000	☒	☒	☒	WS2812	Auto	☒ EN
WS2816B-Mini	Single Wire	800	3	16 + 4 bit γ	10000	☒	☒	☒	WS2812	Auto	☒ EN
WS2816C-1313-4P	Single Wire	800	3	16 + 4 bit γ	10000	☒	☒	☒	WS2812	Auto	☒ EN
WS2816C-2121	Single Wire	800	3	16 + 4 bit γ	10000	☒	☒	☒	WS2812	Auto	☒ EN
WS2818	Single Wire	800	3	8 bit	2000	☒	☒	☒	WS2818	Auto	☒ EN
WS2818B	Single Wire	800	3	8 bit	4000	☒	☒	☒	WS2818	Auto	☒ ZH
WS2821	Single Wire DMX	250 – 750	3	8 bit	☒	☒☒	☒	☒	DMX	☒	☒ EN

Auxiliary and Specialized Chips

The ICs in this group handle the system's logic: they convert signals between different protocols (for example, from DMX to Single Wire), drive external power transistors, or run specialized indicator panels. Unlike smart LEDs, these ICs act as a "command center" or an intermediate link.

Chip Model	Role / Purpose	Features	Datasheet
SM1612	Display Driver	Driver for segment displays and keypads.	☒ EN
SM16126	Matrix Driver	16-channel driver for large LED screens.	☒ ZH
SM16312	VFD Driver	Driver for vacuum fluorescent displays (VFD).	☒ EN
SM17500P	Transcoder	Converts a DMX512 signal into ordinary Single Wire. Allows controlling a WS2811 strip over DMX.	☒ ZH

Glossary

Connection Type (Clock Type)

This parameter defines how many wires are required to transmit data and how stable the signal will be.

- **Single Wire:** The most widespread standard. Data travels over a single wire. Requires precise timing configuration to work correctly (*Period, H0, H1, Reset*).
- **2-Wire (Clocked):** Uses two wires: one for data (**Data**), the other for synchronization (**Clock**). Faster and more stable; eliminates pixel "jitter".

- **Differential DMX:** A professional standard (**RS-485**) that uses two data wires (lines A and B). Transmits the signal over hundreds of meters without loss. Ideal for outdoor façades.
- **Single Wire DMX:** A hybrid type. Uses DMX command logic but physically transmits it over a single wire. Simplifies installation while preserving the flexibility of DMX systems.

DMX Speed (kbit/s)

The DMX-512 transmission-speed range the chip adaptively decodes. DMX chips only (Differential / Single Wire DMX); others show ☒.

The controller must output the DMX signal at a speed within this range. If the selected speed exceeds the chip's maximum, the chip won't decode it and the strip stays dark (even though everything is wired correctly). Standard DMX \approx 250 kbit/s; fast pixel modes raise the speed to 500–750 kbit/s — only chips with a matching ceiling handle them.

Example: a 250–500 chip won't run at 750 kbit/s; a 200–2000 chip handles any speed.

Channels

The number of independent outputs on the chip for color control.

- **3 channels:** Classic RGB (Red, Green, Blue).
- **4 channels:** Usually RGBW (a white channel added for pastel tones) or RGB + Amber.
- **1–4 or 1–6 (range):** Means the chip is universal. It can be configured in software — for example, to drive a single high-power white floodlight or a full RGBW section.
- **5–12, etc.:** Chips with many outputs drive several RGB/RGBW groups at once. Often used in matrix modules.

Color Depth (Bit)

Defines how smoothly the LED changes brightness from 0 to 100%, and the internal control architecture.

Base depth (per channel):

- **5 bit** — 32 levels. LPD6803 style. Low resolution, visible "steps".
- **7 bit** — 128 levels (per the protocol, the most significant bit is used as a marker). LPD8806/8803.
- **8 bit** — 256 levels. The standard for most chips. Slight "steps" visible at very low brightness.
- **12 bit** — 4,096 levels. Noticeably smoother transitions.
- **16 bit** — 65,536 levels. Maximum smoothness. Professional use.

Composite notation (when the chip performs additional internal processing):

- **8 + 5 bit** — 8-bit color per channel + a 5-bit **global per-pixel dimmer** (32 levels). APA102/SK9822/HD1075 architecture. Color control is 8-bit, but pixel brightness is set by a separate 5-bit current divider.
- **16 + 4 bit gain / 16 + 5 bit gain** — 16-bit color control + **independent per-channel current adjustment** (4 or 5 bit). UCS9812 / WS2816A / UCS8903 / HD108. Essentially two parameters per channel: coarse current adjustment + smooth PWM.
- **12 + 4 bit gain** — 12-bit color + 4-bit per-channel gain. UCS5603.
- **8 ☒ 12 bit γ** — the user sends 8 bits, but **internal gamma correction expands it into 12-bit PWM** for smoother perception. GS8206/8208.
- **16 + 4 bit γ** — 16-bit color + internal 4-bit γ correction (effective resolution \sim 20 bit). WS2816B/C series.

PWM Frequency (Hz)

The LED's flicker rate — invisible to the eye, but captured by cameras.

- **Low** (< 1000 Hz): black bands will "roll" across the footage when filming with a phone.
- **High** (> 2000 Hz): optimal for interiors and amateur video.
- **Ultra-high** (8000 to 32000 Hz): the professional "*Flicker-Free*" standard. The image stays perfectly clean even under slow-motion filming.

Backup Line (Redundant Line)

A technology that keeps the strip alive when a single pixel in the chain fails. Applicability depends on the **protocol topology**:

- **Chain (daisy-chain) topology** (Single Wire, 2-Wire Clocked) — the signal passes from chip to chip: each chip receives data on its **DIN** (Data Input), takes its own 24/32-bit slot, and forwards the remainder through its **DO / DOUT** output (Data Output — manufacturers name it differently) to the next chip. If one chip fails, all downstream chips lose the signal. This is where a backup data input makes sense:
 - **DIN + BIN** — Backup Input, e.g. WS2813, WS2815, WS2818 (WorldSemi)
 - **DIN + FDIN** — Forward (auxiliary) Data Input, e.g. UCS5603, UCS7604, UCS7614, TM1914, LB1908
 - **DATA1+CLK1 + DATA2+CLK2** — a hypothetical second Data+Clock pair for 2-Wire (not implemented in any existing chip in practice)
- **Bus topology** (Differential DMX, Single Wire DMX) — all chips are connected **in parallel** to one shared data line (or to the differential A+B = D+ / D- pair). Each chip listens to the stream independently and takes its own DMX slot. A failure of one chip does not affect the others. A backup line is **not needed by design**.

Column values:

- **Yes**: The chip has an additional data input (DIN+BIN/FDIN or a similar scheme). If one pixel in the chain fails, the signal bypasses it and the rest of the strip keeps working.
- **No**: The chip has no redundancy scheme — if one chip fails, the whole strip after it goes dark. A backup could be implemented architecturally (chain topology), but it is not present in this chip.
- **Not applicable**: The chip uses a bus protocol architecture (DMX/RS-485 or single-line bus). A backup is conceptually unnecessary — each chip is independent, so a single failure does not affect the others.
- **Not specified**: The value needs verification.

LS Player Port / LS Converter Port (+Extender)

Indicates whether the corresponding **port on the Light Stream device** can drive this chip. This refers specifically to the DMX port on the device (LS Player / LS Converter / LS Extender), not to the device as a whole.

- **Supported**: A chip of this type can be connected to this device port directly.
- **Not supported**: A chip of this type cannot be connected to this port (different protocol / connection type).

LS Converter Control Preset / Addressing Preset

The settings to select in the LS Converter for correct operation with the chip. A value of `Auto` means the parameter is detected automatically. `DMX` means the DMX protocol is used. means the parameter is not applicable (for example, the LS Converter is not used for 2-Wire chips).

Legend

- — yes / supported / feature implemented in the chip
- — feature not implemented in the chip (but architecturally possible)
- — concept not applicable to the protocol (bus architecture — all chips are independent)
- — value not specified, needs verification