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Understanding DT8 RGBW mode for OTi DALI CV – G3

July 2023

What does DT8-RGBW mean?

DT8-RGBW is a new DALI control system that allows to manage RGB / RGBW LED modules just using only 1 DALI address instead of 3 / 4 as in DT6 mode.
It gives the possibility to:

- reduce the number of DALI addresses used in a DALI network but keeping the same number of drivers;
- increase the DALI devices that can be implemented in the DALI network without increasing the controllers.

Which are the drivers that support DT8-RGBW operating mode?

OTi DALI 50/220-240/24 4CH DT6/8 G3

- 4062172274289

OTi DALI 80/220-240/24 4CH DT6/8 G3

- 4062172274302

OTi DALI 210/220-240/24 4CH DT6/8 P

- 4062172364263

OTi DALI 100/220-240/24 4CH DT6/8 P

- 4062172364324

COMING SOON

How DT8-RGBW operating mode can be programmed in the driver?

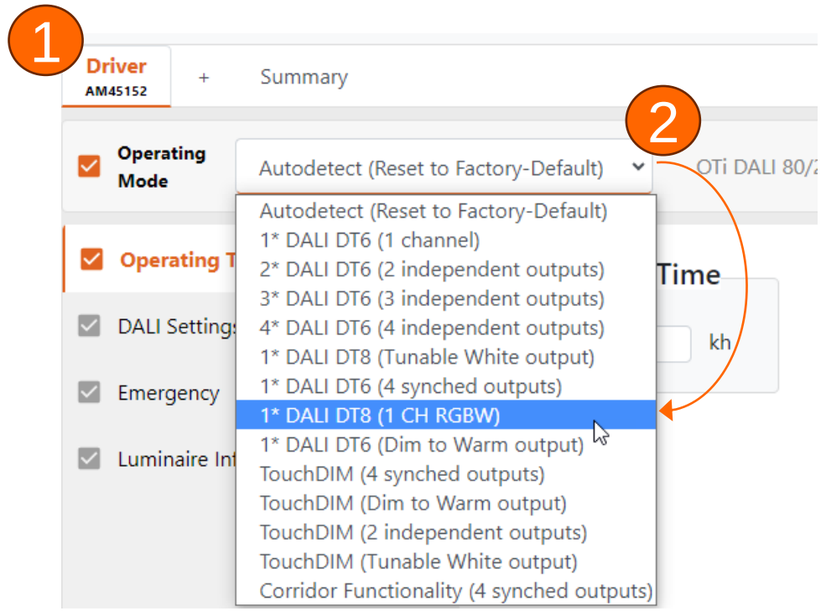
- Driver can not work in DT8-RGBW mode with the default setups;
- The DIP Switch in OFF position only sets the DT8-**TW *** mode as default setting, without need to program the driver

Therefore DT8-RGBW operating mode has to be programmed:

- via T4T (https://www.tuner4tronic.com/t4t/#/)
- with the usage of DALI MAGIC tool (DALI MAGIC link)

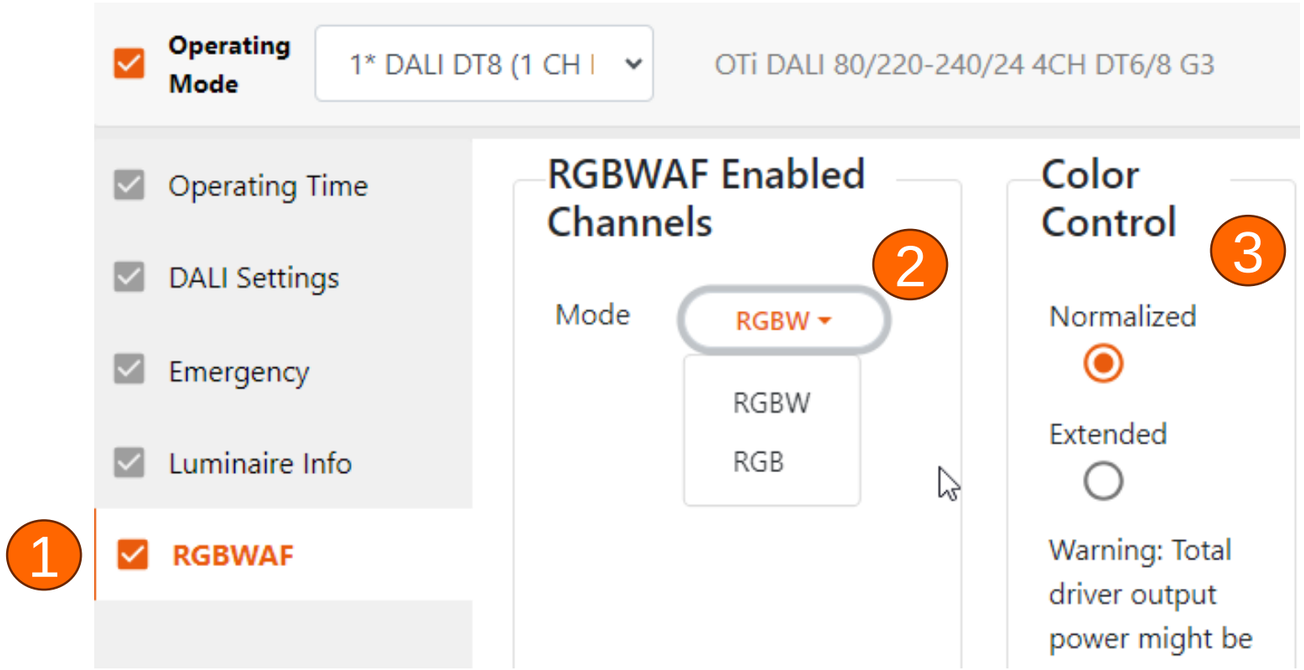
1. First of all open the T4T tool and select the driver model that has to be used in your application

2. Then check the “DALI DT8 (1 CH RGBW)” in the “Operating Mode” drop-down menu.



*DT8-RGBW mode doesn't perform like the DT8-TW with regards to the steady output flux when shifting CCT. Therefore, output flux differences can be appreciated when changing colour shade.

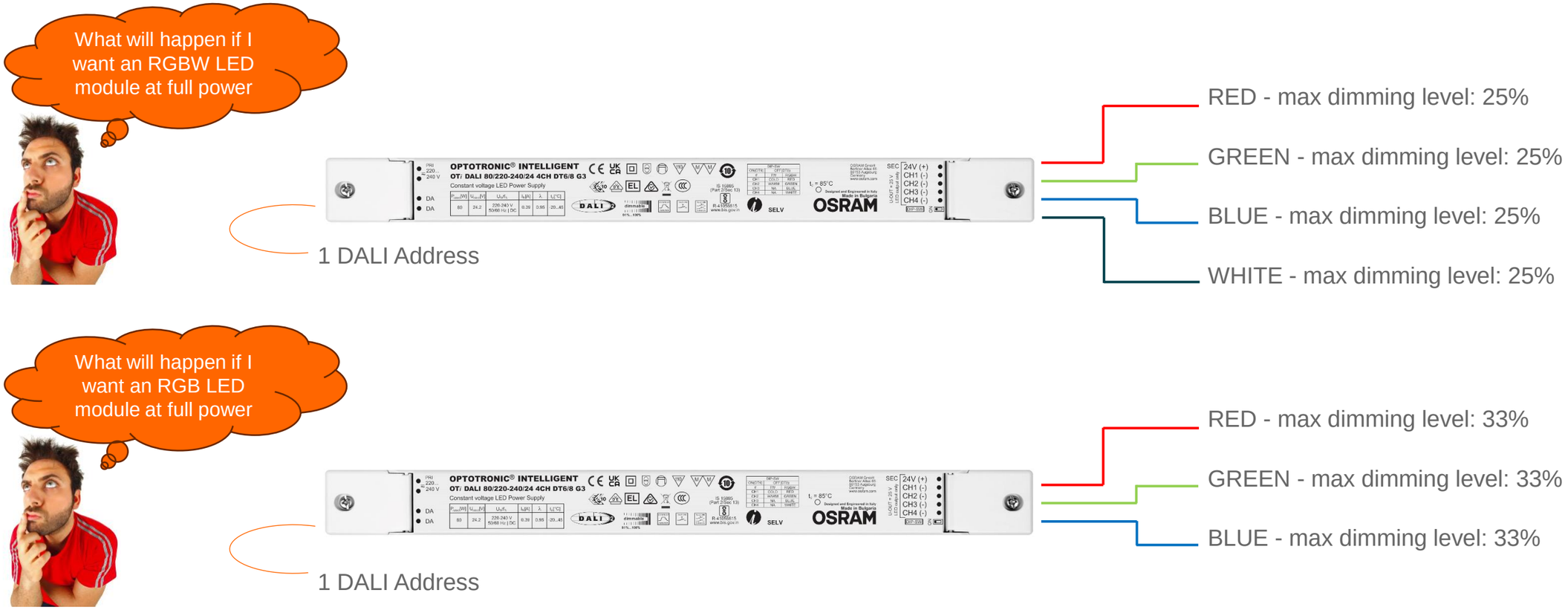
Next step is to select the way how to control the LED load:



1. Select the RGBWAF option
2. Select the LED load type that has to be used between RGB or RGBW
3. Select the “Color Control” method to use in application:
   - Normalized
   - Extended

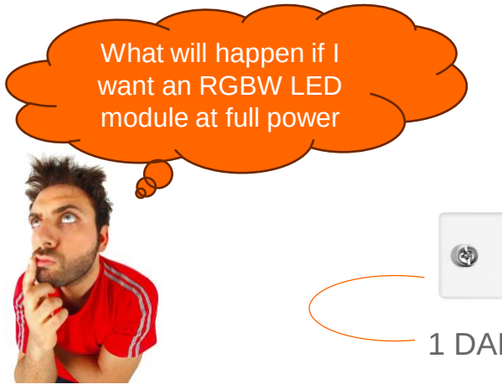
NORMALIZED

The dimming level selected for a specific scenario is evenly weighted according to the number of the used output channels



EXTENDED

It works delivering the full power as in DT6 mode but with 1 DALI address



1 DALI Address

RED - max dimming level:100%

GREEN - max dimming level:100%

BLUE - max dimming level:100%

WHITE - max dimming level:100%

1 DALI Address

RED - max dimming level:100%

GREEN - max dimming level:100%

BLUE - max dimming level:100%

How can I select a driver based on the Color Control selected?

Independently from the Color Control selected (NORMALIZED or EXTENDED), the driver selection has to be done in the same way and just considering the total amount of power consumption required by the RGB/RGBW led module

Example:

2m of LF1300RGBW-G1-927-05 (EAN:4062172283748)

LF1300RGBW	W/m	W tot (2m)	W tot
R	4,7	9,4	39,2
G	4,6	9,2	
B	1,7	3,4	
W	8,6	17,2	

NORMALIZED (full power)

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P_{avg} =2,35 W (25%); P_{max} = 9,4 W

P_{avg} =2,3 W (25%); P_{max} = 9,2 W

P_{avg} =0,85 W (25%); P_{max} = 3,4 W

P_{avg} =4,3 W (25%); P_{max} = 17,2 W

EXTENDED (full power)

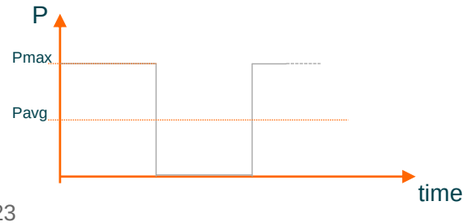
OTi DALI 50/220-240/24 4CH DT6/8 G3

$P_{avg,max}$ = 9,4 W

$P_{avg,max}$ = 9,2 W

$P_{avg,max}$ = 3,4 W

$P_{avg,max}$ = 17,2 W



P_{avg}: average of the power delivered by the driver to the LED module during a PWM cycle

P_{max}: power delivered by the driver when in the 100% of the PWM duty cycle

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Thank You

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