ARX LED Evaluations

The table below shows the final LED data to be used in the 16-channel ARX. The forward current, forward voltage and luminous intensity values are from the respective datasheets. Some LEDs are different than in the ARX Prototype. The prototype LEDs and current limiting resistors are shown on the next page.

Function	Color	Mfr	P/N	Vin (V)	If (mA)	Vf (V)	Iv (mcd)	R (ohm)	P (W)	Remarks
Board ID	Yellow	Kingbright	APT3216LSYCK/J3-PRV	3.3	2	1.85	25	725	0.003	
FEE fault	Red	Kingbright	APT3216LSECK/J3-PRV	15.0	1.25	1.8	25	10.56k	0.017	Note 3
15 V bus input	Green	Kingbright	APTD3216LCGCK	15.0	2	1.9	25	6.55k	0.026	Primary V
8.8 V bus input	Green	Kingbright	APTD3216LCGCK	8.8	2	1.9	25	3.45k	0.014	Primary V
3.3 V bus output	Blue	Kingbright	APT3216LVBC/D	3.3	2	2.65	24	325	0.001	Derived V
7.0 V bus output	Blue	Kingbright	APT3216LVBC/D	7.0	2	2.65	24	2.18k	0.009	Derived V
PIC live indicator	?	Kingbright	APT2012LZGCK	3.3	2	2.65	100	649		D34/D35

Table notes:

1 Vin = input voltage to the LED circuit, Vf = *typical* forward voltage of the LED and Iv = *typical* luminous intensity

2. Current limiting resistor R = (Vin – Vf)/If. Theoretical values, not standard values, are shown

3. The rated luminous intensity of the Red LED is 40 mcd at 2 mA. To make it comparable to the other LEDs, If is reduced to rated If x 25/40 = 1.25 mA

Yellow: https://www.kingbrightusa.com/product.asp?catalog_name=LED&product_id=APT3216LSYCK/J3-PRV
Red: https://www.kingbrightusa.com/product.asp?catalog_name=LED&product_id=APT3216LSECK/J3-PRV
Green: https://www.kingbrightusa.com/product.asp?catalog_name=LED&product_id=APTD3216LCGCK
Blue: https://www.kingbrightusa.com/product.asp?catalog_name=LED&product_id=APT3216LVBC/D

The LED information below applies only to the ARX Prototype.

Blue: APT3216LVBC/D, If = 2 mA, Vf = 2.2 V min, 2.65 V typ, 3.0 V max, Iv = 24 mcd typ
D6: 3.3 V output, R = 649 ohm
D14: Port Exp, 3.3 V, R = 649 ohm
D15: Port Exp, 3.3 V, R = 649 ohm
D16: Port Exp, 3.3 V, R = 649 ohm
D17: Port Exp, 3.3 V, R = 649 ohm
D18: Port Exp, 3.3 V, R = 649 ohm
D19: Port Exp, 3.3 V, R = 649 ohm
D20: Port Exp, 3.3 V, R = 649 ohm
D21: Port Exp, 3.3 V, R = 649 ohm
D22: Port Exp, 3.3 V, R = 649 ohm
D23: Port Exp, 3.3 V, R = 649 ohm
D24: Port Exp, 3.3 V, R = 649 ohm
D25: Port Exp, 3.3 V, R = 649 ohm
D26: Port Exp, 3.3 V, R = 649 ohm
D27: Port Exp, 3.3 V, R = 649 ohm
D28: Port Exp, 3.3 V, R = 649 ohm
D36: Port Exp, 3.3 V, R = 649 ohm
D37: Port Exp, 3.3 V, R = 649 ohm
D38: Port Exp, 3.3 V, R = 649 ohm
D39: Port Exp, 3.3 V, R = 649 ohm
D40: Port Exp, 3.3 V, R = 649 ohm
D41: Port Exp Board ID, 3.3 V, R = 649 ohm

Green: APT2012LZGCK, If = 2 mA, Vf = 2.2 V min, 2.65 V typ, 3.0 V max, Iv = **100 mcd typ**
D8: 7.0 V output (too bright), R = 4.3k ohm
D34: PIC ?, 3.3 V, R = 649 ohm
D35: PIC ?, 3.3 V, R = 649 ohm

Green: APT3216LZGCK, If = 2 mA, Vf = 2.2 V min, 2.65 V typ, 3.0 V max, Iv = **100 mcd typ**
D5: 8.8V input (too bright), R = 6.2k ohm

Red: APT3216LSECK/J3-PRV, If = 2 mA, Vf = 1.5 V min, 1.8 V typ, 2.1 V max, Iv = 25 mcd
D7: 15 V input, R = 13k ohm
D11: eFuse fault, Ch. B, 15 V, R = 13k ohm
D29: eFuse fault, Ch. A, 15 V, R = 13k ohm

This document updated 10/21/2024 to include PIC Live Indicator LEDs (D34/D35)