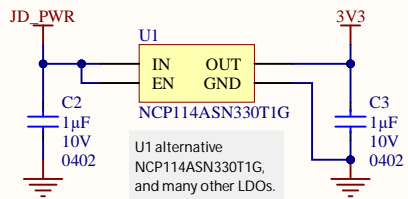


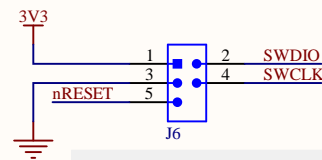
3V3 regulator



Recommendation:
consider replacing
NCP114 with an
LDO that is robust
to repeated spikes
of 8V or more on
its input in case
there is noise on
the Jacdac bus.

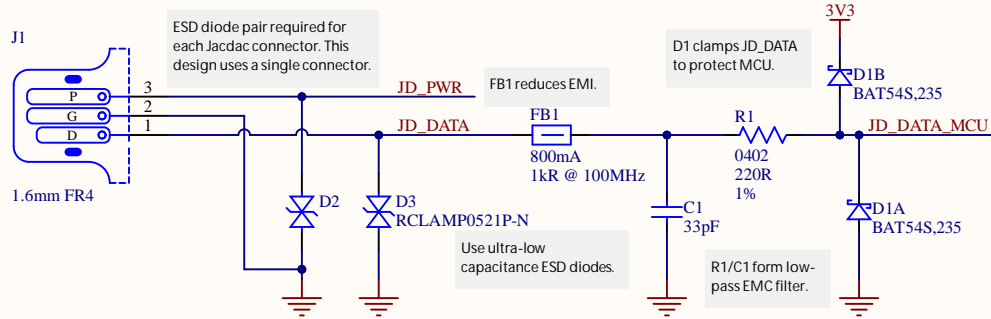
This component is
a power-consumer.

Programming/debug connector



"Hack-connect XS" SWD adapter.
<https://arcade.makecode.com/hardware/dbg>

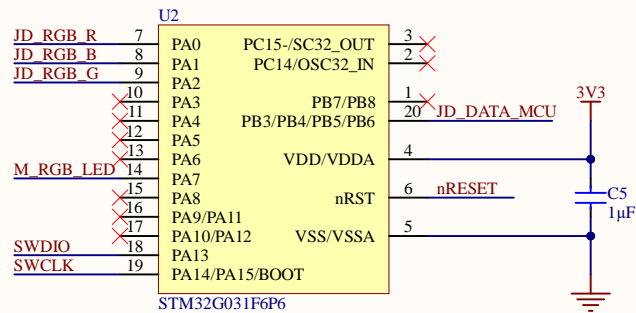
Jacdac connector



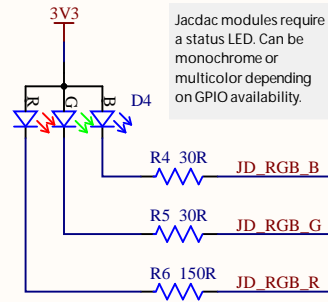
MCU

U2 critical pin mappings:
PB6 USART1_TX for JD data
PA0 for JD_RGB_R
PA2 TIM2_CH3 for JD_RGB_G
PA1 TIM2_CH2 for JD_RGB_B
PA7 RGB ring data

JD_DATA doesn't need
WAKEUP pin because
deepest sleep isn't used.



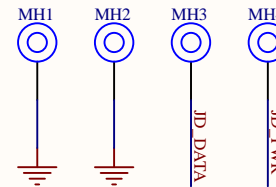
Status LED



Jacdac modules require
a status LED. Can be
monochrome or
multicolor depending
on GPIO availability.

Tuoahan TZ-P4-1615RGBTCA1-0.55T RGB
is footprint-compatible alternative for D6.
If using alternative part recalculate R4-R6.

Mounting holes



Mounting holes are electrically connected to
the Jacdac bus nets so they can be used as
an alternative to the PCB edge connector.
Please use the following reference
designators and net mapping:

MH1 & MH2: GND
MH3: JD_DATA
MH4: JD_PWR

This design uses Jacdac 'small' mounting
holes: PTH with finished diameter of 2.1mm,
annular copper ring of 3.0mm diameter &
copper/component keepout of 5.0mm. The
mounting holes must be on 2.5mm pitch.
Mounting holes should have appropriate
silkscreen marker, and MH1 should have a
pin 1 marker on the top side.

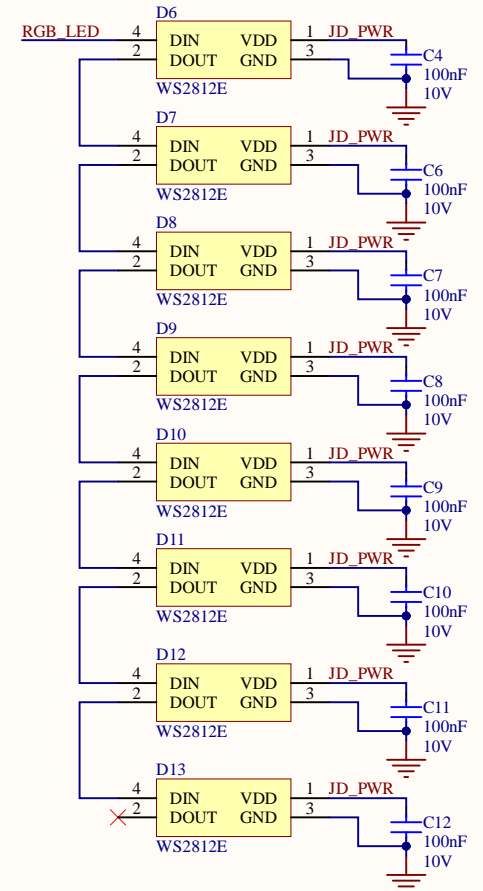
This reference design is a guideline. Please refer to
the Jacdac docs online at <https://aka.ms/jacdac> for
the definitive and most up-to-date information.

This design uses a
'cute' board shape.

Silkscreen should include text to identify the module type and revision, and
optionally a QR code.

RGB LEDs

RGB LEDs are powered directly from
JD_PWR to leverage higher voltage.



Silkscreen &
layout notes

Block name

Design notes

This information is provided "as-is". You
bear the risk of using it. Some
information relates to pre-released
specification which may change without
notice. Microsoft makes no warranties,
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information provided here.

When this PDF is viewed with Adobe Reader, clicking on
components shows part numbers and other details.

PROJECT FILENAME JacdacRgbLedRing8 37.PrjPCB

PROJECT CODENAME JacdacRgbLedRing8

SHEET FILENAME JacdacRgbLedRing8 37.SchDoc

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Microsoft

PROJECT DESCRIPTION
Jacdac RGB module with 8x LEDs in a ring

SHEET DESCRIPTION
Complete design

LAST MODIFIED 03/12/2021

PAGE 1 OF 1

DRAWN BY D. Gakure & S. Hodges

REVISION 2.2

PCB ID 37-2.2