

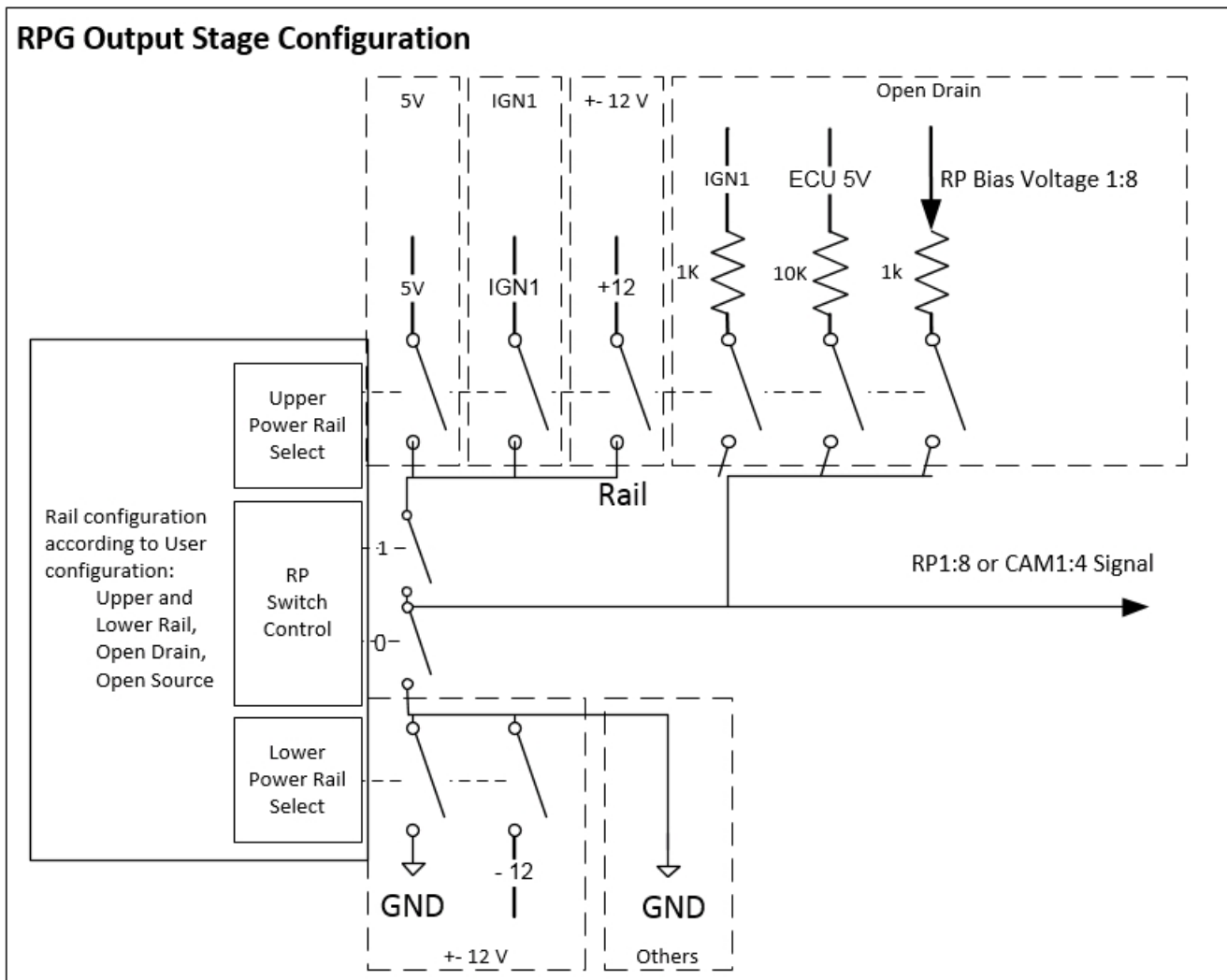
# CAM and RP signals electrical characteristics

The RPG module provides several possible configurations for the RP and CAM signals output stage. These choice are made available to the User via the [Files and Rails tab](#) of the Labview Configuration panel.

The possible output stage configurations are summarized in the table below :

Signal	0-5V	0-IGN1	±12V	Open Drain IGN1	Open Drain ECU 5V	Open Drain RPBV	Open Source 5V	Open Source IGN1	Open Source 12V
CAM 1:4	x	x	x	x	x	x	x	x	x
RP 1:3	x	x	x	x	x	x	x	x	x
RP 4:8	x			x	x	x	x		

The FPGA module controls the Upper and Lower rail settings of the card, according to the value selected for each channel, as represented in this schematic :



The RP and CAM output signals have the following characteristics:

Characteristic	Units	0-5V , 0-IGN1 and ±12V outputs	Open Drain output
Load Impedance	ohms	>200	>200
Load Capacitance	nF	>500	>500
Rise time	nS	<20	NA

Fall time	nS	<20	<20
Overshoot	%	<5	NA
Undershoot	%	<5	NA
Accuracy	%	1	NA
Max drive current	mA	>200	>200

## Reference Pulse Bias Voltage (RPBV1:8)

A user-supplied bias voltage can be used to reference the RP and CAM channels. The association between the RPBV pins and the RP and CAM channels is as follows:

Connector pin	Associated channel
RPBV1	RP1
RPBV2	RP2
RPBV3	RP3
RPBV4	RP4 to RP8
RPBV5	CAM1
RPBV6	CAM2
RPBV7	CAM3
RPBV8	CAM4