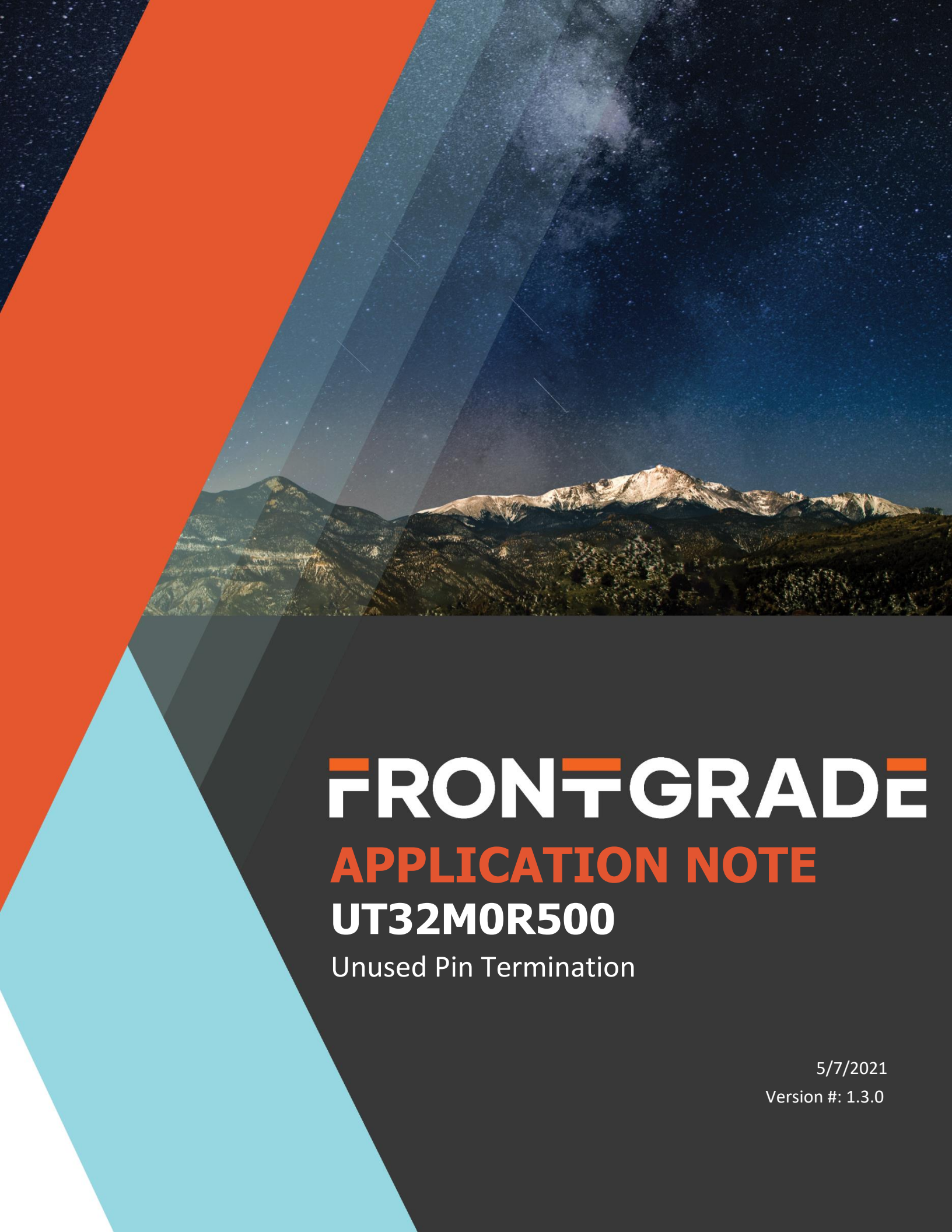




FRONTGRADE

APPLICATION NOTE

UT32M0R500

Unused Pin Termination

5/7/2021

Version #: 1.3.0

Table 1: Cross Reference of Applicable Products

Product Name	Manufacturer Part Number	SMD #	Device Type
Arm Cortex M0+	UT32M0R500	5962-17212	01

Overview

The following is a pin list for termination connection for unused pins. The pin state is assumed to be immediately after a power-on or reset of the UT32M0R500.

PIN NO.	Name	Reset State	Recommended Termination When Unused
E12	A IN0	-	Pulldown Resistor to 0V or VSSA
F 12	A IN1	-	Pulldown Resistor to 0V or VSSA
G 12	A IN2	-	Pulldown Resistor to 0V or VSSA
H 12	A IN3	-	Pulldown Resistor to 0V or VSSA
F 11	A IN4	-	Pulldown Resistor to 0V or VSSA
G 11	A IN5	-	Pulldown Resistor to 0V or VSSA
H 11	A IN6	-	Pulldown Resistor to 0V or VSSA
J11	A IN7	-	Pulldown Resistor to 0V or VSSA
J12	A IN8	-	Pulldown Resistor to 0V or VSSA
K12	A IN9	-	Pulldown Resistor to 0V or VSSA
L12	A IN10	-	Pulldown Resistor to 0V or VSSA
M12	A IN11	-	Pulldown Resistor to 0V or VSSA
K11	A IN12	-	Pulldown Resistor to 0V or VSSA
L11	A IN13	-	Pulldown Resistor to 0V or VSSA
M11	A IN14	-	Pulldown Resistor to 0V or VSSA
M10	A IN15	-	Pulldown Resistor to 0V or VSSA
D10	LDO 15_BYP	-	Connect to VSSA
C 10	LDO 28_BYP	-	Connect to VSSA
D12	DAC0	-	Float
C 12	DAC1	-	Float
B12	C MP0A	-	Pulldown Resistor to 0V or VSSA
A 12	C MP0B	-	Pulldown Resistor to 0V or VSSA
D11	C MP1A	-	Pulldown Resistor to 0V or VSSA

PIN NO.	Name	Reset State	Recommended Termination When Unused
C 11	C MP1B	-	Pulldown Resistor to 0V or VSSA
M4	CAN0_RXD	I	Pulldown Resistor to 0V or VSS
M5	CAN0_TXD	O	Float
M6	UART0_TXD	O	Float
M7	UART0_RXD	I	Pulldown Resistor to 0V or VSS
A2	CAN1_RXD/GPIO32	I	Pulldown Resistor to 0V or VSS
B1	CAN1_TXD/GPIO33	O	Float
C1	UART1_TXD/GPIO34	O	Float
D1	UART1_RXD/GPIO35	I	Pulldown Resistor to 0V or VSS
E1	SCL0/GPIO36	I	Pulldown Resistor to 0V or VSS
F1	SDA 0/GPIO37	I	Pulldown Resistor to 0V or VSS
J1	SCL1/GPIO38	I	Pulldown Resistor to 0V or VSS
K1	SDA 1/GPIO39	I	Pulldown Resistor to 0V or VSS
L1	SCLK/GPIO40	I	Pulldown Resistor to 0V or VSS
M1	MOSI/GPIO41	O	Float
M2	MISO/GPIO42	I	Pulldown Resistor to 0V or VSS
M3	SSN0/GPIO43	O	Float
B2	PWM0/GPIO44	O	Float
B3	PWM1/GPIO45	O	Float
C2	PWM2/GPIO46	O	Float
C3	PWM3/GPIO47	O	Float
D2	GPI00	I	Pulldown Resistor to 0V or VSS
D3	GPI01	I	Pulldown Resistor to 0V or VSS
E2	GPI02	I	Pulldown Resistor to 0V or VSS
E3	GPI03	I	Pulldown Resistor to 0V or VSS
F2	GPI04	I	Pulldown Resistor to 0V or VSS
F3	GPI05	I	Pulldown Resistor to 0V or VSS
G2	GPI06	I	Pulldown Resistor to 0V or VSS
G3	GPI07	I	Pulldown Resistor to 0V or VSS
H2	GPI08	I	Pulldown Resistor to 0V or VSS
H3	GPI09	I	Pulldown Resistor to 0V or VSS
J2	GPI010	I	Pulldown Resistor to 0V or VSS

PIN NO.	Name	Reset State	Recommended Termination When Unused
J3	GPIO11	I	Pulldown Resistor to 0V or VSS
K2	GPIO12	I	Pulldown Resistor to 0V or VSS
K3	GPIO13	I	Pulldown Resistor to 0V or VSS
L2	GPIO14	I	Pulldown Resistor to 0V or VSS
L3	GPIO15	I	Pulldown Resistor to 0V or VSS
B10	GPIO16/INTR17	I	Pulldown Resistor to 0V or VSS
B9	GPIO17/INTR18	I	Pulldown Resistor to 0V or VSS
B8	GPIO18/INTR19	I	Pulldown Resistor to 0V or VSS
B7	GPIO19/INTR20	I	Pulldown Resistor to 0V or VSS
B6	GPIO20/INTR21	I	Pulldown Resistor to 0V or VSS
B5	GPIO21/INTR22	I	Pulldown Resistor to 0V or VSS
B4	GPIO22/INTR23	I	Pulldown Resistor to 0V or VSS
A3	GPIO23/INTR24	I	Pulldown Resistor to 0V or VSS
A11	GPIO24/CMP0OUT	I	Pulldown Resistor to 0V or VSS
A10	GPIO25/CMP1OUT	I	Pulldown Resistor to 0V or VSS
A9	GPIO26/RTCK	I	Pulldown Resistor to 0V or VSS
A8	GPIO27/SSN1	I	Pulldown Resistor to 0V or VSS
A7	GPIO28/SSN2	I	Pulldown Resistor to 0V or VSS
A6	GPIO29/SSNM	I	Pulldown Resistor to 0V or VSS
A5	GPIO30	I	Pulldown Resistor to 0V or VSS
A4	GPIO31	I	Pulldown Resistor to 0V or VSS
H1	XTA L1	I	Pulldown Resistor to 0V or VSS
G1	XTA L2	O	Float
K4	TRST	-	10KΩ Pulldown to 0V or VSS
L7	TMS	-	Pullup Resistor to V DD
L6	TCK	-	Pullup Resistor to V DD
K5	TDI	-	Pullup Resistor to V DD
L4	TDO	-	Float
K6	Reserved, NUIL	-	Pulldown Resistor to 0V or VSS
B11	Reserved, NUIL	-	Pulldown Resistor to 0V or VSS
L5	Reserved, NUIL	-	Pulldown Resistor to 0V or VSS

Revision History

Date	Revision #	Author	Change Description	Page #
03/06/2018	1.0.0	AW	Initial Release	
02/26/2020	1.1.0	OW	Updated TRST, TMS, TCK, and TDI to reflect the information found in the UT32M0R500 datasheet	
07/08/2020	1.2.0	OW	Updated template; Added clarification that Pullup/Pulldown meant through a resistor, not a direct connection.	
5/7/2021	1.3.0	OW	Added NUIIL pins to list to ensure they are configured correctly; Corrected the Comparator termination should be to VSSA, not VSS; Corrected pins A11, A10, A9 reset as Input GPIOs, not output Alternate-Functions	

Frontgrade Technologies Proprietary Information Frontgrade Technologies (Frontgrade or Company) reserves the right to make changes to any products and services described herein at any time without notice. Consult a Frontgrade sales representative to verify that the information contained herein is current before using the product described herein. Frontgrade does not assume any responsibility or liability arising out of the application or use of any product or service described herein, except as expressly agreed to in writing by the Company; nor does the purchase, lease, or use of a product or service convey a license to any patents rights, copyrights, trademark rights, or any other intellectual property rights of the Company or any third party.