

Bill of Materials

TI DESIGNS
 Part # TIDA-NFCREADER
 Literature Number: TIDR067

DESIGNATOR	QTY	DESCRIPTION	PART NUMBER	DK Part Number	MANUFACTURER
	Ref	same as Assembly Dwg, TRF7960A Reader EVM (13.56 MHz) Rev A			Texas Inst
	Ref	same as Schematic, TRF7960 Reader EVM (13.56 MHz) Rev A			Texas Inst
	Ref	same as Bd Outline Dwg, TRF7960 Reader EVM (13.56 MHz) Rev A			Texas Inst
	Ref	same as Test Procedure, TRF7960 Reader EVM (13.56 MHz) Rev A			Texas Inst
	1	same as PCB FAB, TRF7960 Reader EVM (13.56 MHz) Rev A			Texas Inst
	1	same as PCB Assy & Test TRF7960 Reader EVM (13.56 MHz) Rev A			ACD
J1	1	Connector, USB, (Type A), PCB R/A (Male)	33UBARS1-04PN1	www.conec.com	Conec
J2	1	Header (JTAG), 2x6 PIN, (0.100 inch STR)	10-89-1121	WM6812-ND	Molex
J3	DNP	Connector, SMA (0.062 Edge Mount)	142-0711-821	J629-ND	Johnson
J3-Alt	DNP	Connector, SMA, Jack, (PCB Straight Mount), (Thru-Hole)	142-0701-201	J500-ND	Johnson
S1	1	Switch, Reset, 1P1T, (20mA)	EVQ-PAC04M	P8006S-ND	Panasonic
Y1 (20 ppm)	1	Xtal, 13.56 MHz, (Xtal Load Cap = 18pF), (Ckt Caps = 27 pF) (20 ppm), (-40 to +85 deg C), (Package = HC49S SMD)	017486 Rev A		Crystek
Y1 (50 ppm)	ALT	Xtal, 13.56 MHz, (Load Cap = 12pF), (Package = CSM-7)	ECS-135.600-CD-0374	XC874-ND	ECS
HDR-1, HDR-3	DNP	Header, 3-Pin, Male (2mm)	TSHS-203-S-06-GT-LF	www.MajorLeagueElectronics.com 1-800-782-3486	MLE
HDR-2	DNP	Header, 5-Pin, Male (2mm)	TSHS-205-S-06-GT-LF		MLE
HDR-4, HDR-5,	DNP	Header, 8-Pin, Male (2mm)	TSHS-208-S-06-GT-LF		MLE

DESIGNATOR	QTY	DESCRIPTION	PART NUMBER	DK Part Number	MANUFACTURER
HDR-6					
HDR-7	DNP	Header, 6-Pin, Male (2mm)	TSHS-206-S-06-GT-LF		MLE
	Ref	Jumper (2mm)	86730-001LF		MiniTek
C40	1	Capacitor, 4.7uF, Tantalum, +/-20% (10V)	T491A475M010AS	399-1562-2-ND	Kemet
C3, 5, 7, 9, 25, 30	6	Capacitor, 2.2uF, Ceramic, +/-10%, X5R, (10V), (0603)	C0603C225K8PACTU	399-4911-2-ND	Kemet
C31, 41, 42	3	Capacitor, 0.1uF, X7R, (25V), (0603)	ECJ-1VB1E104K	PCC2277TR-ND	Panasonic
C4, 6, 8, 10, 26 C33	6	Capacitor, 0.01uF, (or 10nF), X7R, (25V), (0603)	ECJ-1VB1E103K	PCC1763TR-ND	Panasonic
C11,12	2	Capacitor, 1500pF, +/-10%, X7R, (50V), (0603)	ECJ-1VB1H152K	PCC1774TR-ND	Panasonic
C11,12	2	Capacitor, 1500pF, +/-10%, X7R, (50V), (0603)	C0603C152K5RACTU	399-1084-2-ND	Kemet
C13, 14	2	Capacitor, 1200pF, +/-10%, X7R, (50V), (0603)	ECJ-1VB1H122K	PCC1773TR-ND	Panasonic
C15, C18	2	Capacitor, 680pF, +/- 5%, NPO, (50V), (0603)	ECJ-1VC1H681J	PCC2149TR-ND	Panasonic
C17	1	Capacitor, 220pF, +/- 5%, NPO, (50V), (0603)	ECJ-1VC1H221J	PCC221ACVTR-ND	Panasonic
C19	1	Capacitor, 100pF, +/- 5%, NPO, (50V), (0603)	ECJ-1VC1H101J	PCC101ACVTR-ND	Panasonic
C19	1	Capacitor, 100pF, +/- 5%, NPO, (50V), (0603)	C0603C101J5GACTU	399-1061-2-ND	Kemet
C24	1	Capacitor, 56pF, +/- 5%, NPO, (50V), (0603)	ECJ-1VC1H560J	PCC560ACVTR-ND	Panasonic
C21	1	Capacitor, 47pF, +/- 5%, NPO, (50V), (0603)	ECJ-1VC1H470J	PCC470ACVTR-ND	Panasonic
C1, 2, 20	3	Capacitor, 27pF, +/- 5%, NPO, (50V), (0603)	ECJ-1VC1H220J	PCC220ACVTR-ND	Panasonic
C1, 2, 20	3	Capacitor, 27pF, +/- 5%, NPO, (50V), (0603)	C0603C270J5GACTU	399-1054-2-ND	Kemet
C22, 27	2	Capacitor, 10pF, +/- 5%, NPO, (50V), (0603)	ECJ-1VC1H100D	PCC100CVCT-ND	Panasonic
C23	DNP	Capacitor, TBD			Panasonic
L1	1	Inductor, 150nH, (Q = 45), (I _{dc} = 580 mA), (1008HS)	1008CS-151XJLB		Coilcraft
L2	1	Inductor, 330nH, (Q = 45), (I _{dc} = 450 mA), (1008HS)	1008CS-331XJLB		Coilcraft
R11	1	Resistor, 47K (0.1W), (0603)	ERJ-3GEYJ473V	P47KGTR-ND	Panasonic
R13, 14, 24, 30, R31	5	Resistor, 10K (0.1W), (0603)	ERJ-3GEYJ103V	P10KGTR-ND	Panasonic

DESIGNATOR	QTY	DESCRIPTION	PART NUMBER	DK Part Number	MANUFACTURER
R6 ,25, 26, 27	4	Resistor, 1K (0.1W), (0603)	ERJ-3GEYJ102V	P1.0KGTR-ND	Panasonic
R15,16, 17, 18, 19 R20	6	Resistor, 560 ohms (0.1W), (0603)	ERJ-3GEYJ561V	P560GTR-ND	Panasonic
R10	1	Resistor, 100 ohms (0.1W), (0603)	ERJ-3GEYJ101V	P100GTR-ND	Panasonic
R3, 4	1	Resistor, 0 ohms (0.1W), (0603)	ERJ-3GEYJ0R00V	P0.0GTR-ND	Panasonic
R2, 12, 32	DNP	Resistor, TBD ohms (0.1W), (0603)			
R212, 245 450, 451, 452, 453, 454, 455, 456, 457 723, 745	12	Resistor, 0 ohms (0.063W), (0402)	ERJ-2GE0R00X	P0.0JTR-ND	Panasonic
U1	1	CP2102, USB to UART, (-40 to 85 deg C), (28 pin QFN)	CP2102-GM	336-1160-ND	Silicon Labs
U2	1	MSP430F2370, (-40 to 85 deg C), (40 pin QFN)	MSP430F2370 IRHA	296-21750-1-ND	Texas Inst
U3	1	TRF7970A, HF RFID Reader, (-40 to 110 deg C), (32 pin QFN)	TRF7970ARHBT	TI to provide	Texas Inst
U4, U6	DNP	UHF Tag tuning			
U5	DNP	RI-UHF-IC116-00 (UHF Tag)	RI-UHF-IC116-00		Texas Inst
LED1 (PWR)	1	LED: water clear lense - Green (565nm), (2.1V @ 10mA)	LTST-C190GKT	160-1183-2-ND	LiteOn
LED2 (14443A)	1	LED: water clear lense - Red-Org (630nm), (2.0V @ 10mA)	LTST-C190EKT	160-1182-2-ND	LiteOn
LED3 (14443B)	1	LED: water clear lense - Yellow (585nm), (2.1V @ 10mA)	LTST-C190YKT	160-1184-2-ND	LiteOn
LED4 (15693)	1	LED: water clear lense - Red (660nm), (1.8V @ 10mA)	LTST-C190CKT	160-1181-2-ND	LiteOn
LED5 (Tag-It)	1	LED: water clear lense - Amber (610nm), (2.1V @ 10mA)	LTST-C190AKT	160-1180-2-ND	LiteOn
LED6 (User App)	1	LED: water clear lense - Red-Org (630nm), (2.0V @ 10mA)	LTST-C190EKT	160-1182-2-ND	LiteOn
	1	Anti-Static Storage Bag (Zip Lock) (4 x 6 inches)	2110R-4x6	Newark P/N = 33K4642	3M

IMPORTANT NOTICE FOR TI REFERENCE DESIGNS

Texas Instruments Incorporated ("TI") reference designs are solely intended to assist designers ("Buyers") who are developing systems that incorporate TI semiconductor products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products.

TI reference designs have been created using standard laboratory conditions and engineering practices. **TI has not conducted any testing other than that specifically described in the published documentation for a particular reference design.** TI may make corrections, enhancements, improvements and other changes to its reference designs.

Buyers are authorized to use TI reference designs with the TI component(s) identified in each particular reference design and to modify the reference design in the development of their end products. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER TI INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN, including but not limited to any patent right, copyright, mask work right, or other intellectual property right relating to any combination, machine, or process in which TI components or services are used. Information published by TI regarding third-party products or services does not constitute a license to use such products or services, or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

TI REFERENCE DESIGNS ARE PROVIDED "AS IS". TI MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE REFERENCE DESIGNS OR USE OF THE REFERENCE DESIGNS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. TI DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO TI REFERENCE DESIGNS OR USE THEREOF. TI SHALL NOT BE LIABLE FOR AND SHALL NOT DEFEND OR INDEMNIFY BUYERS AGAINST ANY THIRD PARTY INFRINGEMENT CLAIM THAT RELATES TO OR IS BASED ON A COMBINATION OF COMPONENTS PROVIDED IN A TI REFERENCE DESIGN. IN NO EVENT SHALL TI BE LIABLE FOR ANY ACTUAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR INDIRECT DAMAGES, HOWEVER CAUSED, ON ANY THEORY OF LIABILITY AND WHETHER OR NOT TI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, ARISING IN ANY WAY OUT OF TI REFERENCE DESIGNS OR BUYER'S USE OF TI REFERENCE DESIGNS.

TI reserves the right to make corrections, enhancements, improvements and other changes to its semiconductor products and services per JESD46, latest issue, and to discontinue any product or service per JESD48, latest issue. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All semiconductor products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its components to the specifications applicable at the time of sale, in accordance with the warranty in TI's terms and conditions of sale of semiconductor products. Testing and other quality control techniques for TI components are used to the extent TI deems necessary to support this warranty. Except where mandated by applicable law, testing of all parameters of each component is not necessarily performed.

TI assumes no liability for applications assistance or the design of Buyers' products. Buyers are responsible for their products and applications using TI components. To minimize the risks associated with Buyers' products and applications, Buyers should provide adequate design and operating safeguards.

Reproduction of significant portions of TI information in TI data books, data sheets or reference designs is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Buyer acknowledges and agrees that it is solely responsible for compliance with all legal, regulatory and safety-related requirements concerning its products, and any use of TI components in its applications, notwithstanding any applications-related information or support that may be provided by TI. Buyer represents and agrees that it has all the necessary expertise to create and implement safeguards that anticipate dangerous failures, monitor failures and their consequences, lessen the likelihood of dangerous failures and take appropriate remedial actions. Buyer will fully indemnify TI and its representatives against any damages arising out of the use of any TI components in Buyer's safety-critical applications.

In some cases, TI components may be promoted specifically to facilitate safety-related applications. With such components, TI's goal is to help enable customers to design and create their own end-product solutions that meet applicable functional safety standards and requirements. Nonetheless, such components are subject to these terms.

No TI components are authorized for use in FDA Class III (or similar life-critical medical equipment) unless authorized officers of the parties have executed an agreement specifically governing such use.

Only those TI components that TI has specifically designated as military grade or "enhanced plastic" are designed and intended for use in military/aerospace applications or environments. Buyer acknowledges and agrees that any military or aerospace use of TI components that have **not** been so designated is solely at Buyer's risk, and Buyer is solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI has specifically designated certain components as meeting ISO/TS16949 requirements, mainly for automotive use. In any case of use of non-designated products, TI will not be responsible for any failure to meet ISO/TS16949.