Texas Instruments

# Bill of Materials

**TI DESIGNS**

TIDA-00133: Uncompressed digital video SerDes over Coax for Automotive Mega Pixe

DS90UB913A-CXEVM

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 0-NO-STUFF | R82 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| 0-NO-STUFF | R81 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| 0-NO-STUFF | R79 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| 0-NO-STUFF | R84 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| 0-NO-STUFF | R68 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| 0-NO-STUFF | R83 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| | R35 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.0 ohm, 0.1W, 0402, Digikey P0.0JCT-ND | | | |
| | R25 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.0 ohm, 0.1W, 0402, Digikey P0.0JCT-ND | | | |
| | R10 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.0 ohm, 0.1W, 0402, Digikey P0.0JCT-ND | | | |
| | R54 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | | |
| 0-NO-STUFF | R78 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| 0-NO-STUFF | R77 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 0-NO-STUFF | R76 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| 0-NO-STUFF | R67 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| 100K | R38 | 1 | 805 | SMT R, +-1% | Panasonic ERJ-6ENF1003V, 100K ohm, 0.125W, 0805, Digikey P100KCCT-ND | | | |
| 0-NO-STUFF | R73 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| 0-NO-STUFF | R69 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| 0-NO-STUFF | R70 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| 0-NO-STUFF | R75 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| 0-NO-STUFF | R72 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |
| 0-NO-STUFF | R31 | 0 | 603 | SMD R, +-1%, 0603 | Panasonic ERJ-3GEY0R00V, 0ohm, 0603, DigiKey# P0.0GCT-ND | | No-Stuff | |
| 0-NO-STUFF | R30 | 0 | 603 | SMD R, +-1%, 0603 | Panasonic ERJ-3GEY0R00V, 0ohm, 0603, DigiKey# P0.0GCT-ND | | No-Stuff | |
| 0-NO-STUFF | R53 | 0 | 603 | SMD R, +-1%, 0603 | Panasonic ERJ-3GEY0R00V, 0ohm, 0603, DigiKey# P0.0GCT-ND | | No-Stuff | |
| | R29 | 1 | 603 | SMD R, +-1%, 0603 | Panasonic ERJ-3GEY0R00V, 0ohm, 0603, DigiKey# P0.0GCT-ND | | | |
| | R36 | 1 | 603 | SMD R, +-1%, 0603 | Panasonic ERJ-3GEY0R00V, 0ohm, 0603, DigiKey# P0.0GCT-ND | | | |
| | R37 | 1 | 603 | SMD R, +-1%, 0603 | Panasonic ERJ-3GEY0R00V, 0ohm, 0603, DigiKey# P0.0GCT-ND | | | |
| | R55 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | | |
| 0-NO-STUFF | R47 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.1W, DigiKey P0.0JCT-ND | | No-Stuff | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 0-NO-STUFF | R21 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.0 ohm, 0.1W, 0402, Digikey P0.0JCT-ND | | No-Stuff | |
| 0-NO-STUFF | R51 | 0 | 603 | SMD R, +-1%, 0603 | Panasonic ERJ-3GEY0R00V, 0ohm, 0603, DigiKey# P0.0GCT-ND | | No-Stuff | |
| 0-NO-STUFF | R49 | 0 | 603 | SMD R, +-1%, 0603 | Panasonic ERJ-3GEY0R00V, 0ohm, 0603, DigiKey# P0.0GCT-ND | | No-Stuff | |
| 0.1UF | C48 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C50 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C32 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C34 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C39 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C37 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C13 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C47 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C30 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C10 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 0.1UF | C4 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C23 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C1 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C7 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C6 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C3 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C36 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C49 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C51 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C27 | 1 | 603 | Chip cap, X7R, 0603 | Murata GRM188R72A104KA35D, 0.1UF, +-10%, 100V, X7R, DigiKey# 490-3285-1-ND | | | |
| 0.1UF | C26 | 1 | 603 | Chip cap, X7R, 0603 | Murata GRM188R72A104KA35D, 0.1UF, +-10%, 100V, X7R, DigiKey# 490-3285-1-ND | | | |
| 0.1UF_NO-STUFF | C17 | 0 | 603 | Chip cap, X7R, 0603 | Murata GRM188R72A104KA35D, 0.1UF, +-10%, 100V, X7R, DigiKey# 490-3285-1-ND | | No-Stuff | |
| 0.1UF_NO-STUFF | C18 | 0 | 603 | Chip cap, X7R, 0603 | Murata GRM188R72A104KA35D, 0.1UF, +-10%, 100V, X7R, DigiKey# 490-3285-1-ND | | No-Stuff | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 1K@100MHz | L1 | 1 | 603 | Ferrite Bead | Murata, Ferrite Bead, 1K @100MHz, BLM18AG102SN1D, 0603, DigiKey# 490-1015-1-ND | | | critical for noise isolation, recommended p/n (or equivalent) |
| 1K@100MHz | L4 | 1 | 603 | Ferrite Bead | Murata, Ferrite Bead, 1K @100MHz, BLM18AG102SN1D, 0603, DigiKey# 490-1015-1-ND | | | critical for noise isolation, recommended p/n (or equivalent) |
| 1K@100MHz | L8 | 1 | 603 | Ferrite Bead | Murata, Ferrite Bead, 1K @100MHz, BLM18AG102SN1D, 0603, DigiKey# 490-1015-1-ND | | | critical for noise isolation, recommended p/n (or equivalent) |
| 1UF | C5 | 1 | 603 | Chip cap, X7R, 0603 | Murata, GRM188R71E105KA12x, 1UF, 10%, 25V, -55 to 125C, DigiKey# 490-5307-1-ND | | | |
| 1UF | C11 | 1 | 603 | Chip cap, X7R, 0603 | Murata, GRM188R71E105KA12x, 1UF, 10%, 25V, -55 to 125C, DigiKey# 490-5307-1-ND | | | |
| 1UF | C2 | 1 | 603 | Chip cap, X7R, 0603 | Murata, GRM188R71E105KA12x, 1UF, 10%, 25V, -55 to 125C, DigiKey# 490-5307-1-ND | | | |
| 1UF | C12 | 1 | 603 | Chip cap, X7R, 0603 | Murata, GRM188R71E105KA12x, 1UF, 10%, 25V, -55 to 125C, DigiKey# 490-5307-1-ND | | | |
| 1UF | C31 | 1 | 603 | Chip cap, X7R, 0603 | Murata, GRM188R71E105KA12x, 1UF, 10%, 25V, -55 to 125C, DigiKey# 490-5307-1-ND | | | |
| 1UF | C9 | 1 | 603 | Chip cap, X7R, 0603 | Murata, GRM188R71E105KA12x, 1UF, 10%, 25V, -55 to 125C, DigiKey# 490-5307-1-ND | | | |
| 1UF | C14 | 1 | 603 | Chip cap, X7R, 0603 | Murata, GRM188R71E105KA12x, 1UF, 10%, 25V, -55 to 125C, DigiKey# 490-5307-1-ND | | | |
| 2.2UH | L9 | 1 | LPS3015-222ML | SMT inductor | CoilCraft, LPS3015-222ML, 2.2UH+-10% | | | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 5.6UH | L10 | 1 | | SMT inductor | CoilCraft, 1008PS-562KL, 5.6UH+-10% | | | use recommended part, critical impedance vs. frequency and saturation current. Reference app note on Power over coax. |
| 10UH-NO-STUFF | L7 | 0 | | SMT inductor | CoilCraft, 1008PS-103KL, 10UH+-10% | | No-Stuff | |
| 10UH-NOSTUFF | L6 | 0 | | SMT inductor | CoilCraft, 1008PS-103KL, 10UH+-10% | | No-Stuff | |
| 4.7K | R39 | 1 | 805 | SMT R, +-1%,805 | Panasonic ERJ-6GEYJ472V, 4.7K, 5%, 0.125W, DigiKey# P4.7KACT-ND | | | |
| 4.7K | R27 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2RKF4701X, 1%, 100ppm, 0.1W, DigiKey P4.70KLCT-ND | | | |
| 4.7K | R26 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2RKF4701X, 1%, 100ppm, 0.1W, DigiKey P4.70KLCT-ND | | | |
| 4.7UF | C35 | 1 | 805 | Chip cap, X7R, 0805 | Murata GRM21BR71C475KA73L, 4.7UF, 16V, X7R, 0805, 10%, DigiKey# 490-4522-1-ND | | | |
| 10UF | C29 | 1 | 805 | Chip cap, X7R, 0805 | Murata GRM21BR61C106KE15L, 10UF, 10%, 16V, X5R, 0805, DigiKey# 490-3886-1-ND | | | |
| 4.7UF | C33 | 1 | 805 | Chip cap, X7R, 0805 | Murata GRM21BR71C475KA73L, 4.7UF, 16V, X7R, 0805, 10%, DigiKey# 490-4522-1-ND | | | |
| 4.7UF | C24 | 1 | 805 | Chip cap, X7R, 0805 | Murata GRM21BR71C475KA73L, 4.7UF, 16V, X7R, 0805, 10%, DigiKey# 490-4522-1-ND | | | |
| 4.7UF | C22 | 1 | 805 | Chip cap, X7R, 0805 | Murata GRM21BR71C475KA73L, 4.7UF, 16V, X7R, 0805, 10%, DigiKey# 490-4522-1-ND | | | |
| 4.53K | R58 | 1 | 603 | SMT R, +-1% | Panasonic ERJ-3EKF4531V, 1%, 100ppm, 0.1W, DigiKey P4.53KHCT-ND | | | |
| 4 HEADER | JP4 | 1 | | 4 Pin Header | Molex, 1x4 header pin, 0.1 pitch, DigiKey# WM2702-ND | | | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 5PF-NO-STUFF | C21 | 0 | 402 | Chip cap, X7R, 0402 | Murata GRM1555C1H5R0CZ01D, 5pF+-0.25pF, 50V, NPO, DigiKey# 490-1274-1-ND | | No-Stuff | |
| 5PF-NO-STUFF | C8 | 0 | 402 | Chip cap, X7R, 0402 | Murata GRM1555C1H5R0CZ01D, 5pF+-0.25pF, 50V, NPO, DigiKey# 490-1274-1-ND | | No-Stuff | |
| 10K | R7 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R8 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R32 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R17 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R33 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R16 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R14 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R46 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R15 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R13 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R9 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 10K | R11 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R12 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R3 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R19 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R20 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R2 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R34 | 1 | 805 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-6GEYJ103V, 0805, Digikey P10KACT-ND | | | critical 1% |
| 10K | R64 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R1 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R4 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R18 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R6 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |
| 10K | R5 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 10K | R24 | 1 | 402 | SMT R, +-1% | 10K+-5%, +-200ppm/C, Panasonic, ERJ-2GEJ103X, 0402, Digikey P10KJCT-ND | | | critical 1% |
| 10K | R59 | 1 | 603 | SMT R, +-1% | Panasonic ERJ-3EKF1002V, 1%, 0.1W, 100ppm, Digikey P10.0KHCT-ND | | | |
| 10K | R50 | 1 | 603 | SMT R, +-1% | Panasonic ERJ-3EKF1002V, 1%, 0.1W, 100ppm, Digikey P10.0KHCT-ND | | | |
| 10K | R48 | 1 | 603 | SMT R, +-1% | Panasonic ERJ-3EKF1002V, 1%, 0.1W, 100ppm, Digikey P10.0KHCT-ND | | | |
| 10K | R52 | 1 | 603 | SMT R, +-1% | Panasonic ERJ-3EKF1002V, 1%, 0.1W, 100ppm, Digikey P10.0KHCT-ND | | | |
| 10K | R57 | 1 | 603 | SMT R, +-1% | Panasonic ERJ-3EKF1002V, 1%, 0.1W, 100ppm, Digikey P10.0KHCT-ND | | | |
| 10PF | C46 | 1 | 402 | Chip cap, X7R, 0402 | Murata GRM1555C1H100JZ01D, 10pF, 5%, COG, 50V, DigiKey# 490-1278-1-ND | | | |
| 10PF | C45 | 1 | 402 | Chip cap, X7R, 0402 | Murata GRM1555C1H100JZ01D, 10pF, 5%, COG, 50V, DigiKey# 490-1278-1-ND | | | |
| 10UF | C25 | 1 | 805 | Chip cap, X7R, 0805 | Murata GRM21BR61C106KE15L, 10UF, 10%, 16V, X5R, 0805, DigiKey# 490-3886-1-ND | | | |
| 10UF | C20 | 1 | 805 | Chip cap, X7R, 0805 | Murata GRM21BR71A106KE51L, 10UF, 10%, 10V, X7R, 0805, DigiKey# 490-3905-1-ND | | | |
| 10UF | C43 | 1 | 805 | Chip cap, X7R, 0805 | Murata GRM21BR71A106KE51L, 10UF, 10%, 10V, X7R, 0805, DigiKey# 490-3905-1-ND | | | |
| 10UF | C38 | 1 | 805 | Chip cap, X7R, 0805 | Murata GRM21BR71A106KE51L, 10UF, 10%, 10V, X7R, 0805, DigiKey# 490-3905-1-ND | | | |
| 10UF | C40 | 1 | 805 | Chip cap, X7R, 0805 | Murata GRM21BR71A106KE51L, 10UF, 10%, 10V, X7R, 0805, DigiKey# 490-3905-1-ND | | | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 16.5K | R56 | 1 | 603 | SMT R, +-1% | Panasonic ERJ-3EKF1652V, 1%, 100ppm, 0.1W, DigiKey P16.5KHCT-ND | | | |
| 22UF | C28 | 1 | 1210 | Chip cap, X7R | Murata GCM32ER71C226KE19L, 22UF, 10%, 16V, X7R, 1210, DigiKey# 490-5242-1-ND | | | |
| 22UF | C15 | 1 | 1210 | Chip cap, X7R | Murata GCM32ER71C226KE19L, 22UF, 10%, 16V, X7R, 1210, DigiKey# 490-5242-1-ND | | | |
| 48.000MHZ | X1 | 1 | | XTAL | ECS-3963-480-BN-TR, 48MHz, DigiKey# XC1039CT-ND | | | |
| 49.9 | R42 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2RKF49R9X, 1%, 100ppm, 0.1W, DigiKey P49.9LCT-ND | | | |
| 49.9 | R44 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2RKF49R9X, 1%, 100ppm, 0.1W, DigiKey P49.9LCT-ND | | | |
| 100 | R62 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2RKF1000X, 100 ohm, 1%, 0.1W, Digikey# P100LCT-ND | | | |
| 100 | R63 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2RKF1000X, 100 ohm, 1%, 0.1W, Digikey# P100LCT-ND | | | |
| 100UH | L2 | 1 | | SMT inductor | CoilCraft, MSS7314T-104ML, 100UH+-20% | | | use recommended part, critical impedance vs. frequency and saturation current. Reference app note on power over coax. |
| 330 | R22 | 1 | 402 | SMT R, +-1%, 0402 | Panasonic ERJ-2RKF3300X, 330 ohm, 1%, 0.1W, 0402, DigiKey# P330LCT-ND | | | |
| 330 | R23 | 1 | 402 | SMT R, +-1%, 0402 | Panasonic ERJ-2RKF3300X, 330 ohm, 1%, 0.1W, 0402, DigiKey# P330LCT-ND | | | |
| 330 | R65 | 1 | 402 | SMT R, +-1%, 0402 | Panasonic ERJ-2RKF3300X, 330 ohm, 1%, 0.1W, 0402, DigiKey# P330LCT-ND | | | |
| 330 | R45 | 1 | 402 | SMT R, +-1%, 0402 | Panasonic ERJ-2RKF3300X, 330 ohm, 1%, 0.1W, 0402, DigiKey# P330LCT-ND | | | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 330 | R66 | 1 | 402 | SMT R, +-1%, 0402 | Panasonic ERJ-2RKF3300X, 330 ohm, 1%, 0.1W, 0402, DigiKey# P330LCT-ND | | | |
| COILCRAFT_KA4909-No-Stuff | L3 | 0 | | COILCRAFT DIFF CHOKE KA4909-AL | Coilcraft differential choke KA4909-AL | | No-Stuff | |
| CY25814-No-Stuff | U6 | 0 | SOIC-8 | CY25814 SPREAD SPECTRUM GEN | On Semi, P3P25814AG-08SR, SSC Gen, x4, DigiKey# P3P25814AG-08SROSCT-ND | | No-Stuff | |
| DLW21SN261XQ2-NO-STUFF | L5 | 0 | Murata_DLW21 | Murata common mode choke | Murata common mode choke, DLW21SN261XQ2 | | No-Stuff | |
| DS90UR913AQ | U1 | 1 | LLP32 | DS90UR913AQ SERIALIZER | * | consign | | |
| ESD-No-Stuff | U2 | 0 | SOT-533 | TI TPD2E001Q1 2-CH ESD | Digikey# 296-21883-1-ND | | No-Stuff | |
| FAKRA_SMT_ROSENBERGER | J2 | 1 | | FAKRA connector, SMT, Rosenberger | Rosenberger FAKRA SMT connector, 59S20X-40ML5-Y | | | |
| HDR_2-No-Stuff | JP5 | 0 | SIP2 | 1x2 header, male | DigiKey# A26542-ND" | | No-Stuff | |
| HEADER 3-No-Stuff | JP6 | 0 | | 1x3 header, male | Amp/Tyco, 0.1" pitch, DigiKey# A26545-ND | | No-Stuff | |
| HEADER 3-No-Stuff | JP2 | 0 | | 1x3 header, male | Amp/Tyco, 0.1" pitch, DigiKey# A26545-ND | | No-Stuff | |
| HEADER 3-No-Stuff | JP3 | 0 | | 1x3 header, male | Amp/Tyco, 0.1" pitch, DigiKey# A26545-ND | | No-Stuff | |
| HEADER 3-No-Stuff | JP9 | 0 | | 1x3 header, male | Amp/Tyco, 0.1" pitch, DigiKey# A26545-ND | | No-Stuff | |
| HEADER 3-No-Stuff | JP7 | 0 | | 1x3 header, male | Amp/Tyco, 0.1" pitch, DigiKey# A26545-ND | | No-Stuff | |
| HEADER 3 | JP8 | 1 | | 1x3 header, male | Amp/Tyco, 0.1" pitch, DigiKey# A26545-ND | | | |
| HEADER 16X2-No-Stuff | JP10 | 0 | | 2x16 header, female | Use 2x30 female header, 0.1" pitch, CUT to FIT, DigiKey# A32952-ND | | No-Stuff | |
| HEADER 19X2 | JP1 | 1 | | 2x19 header, male | TE Connectivity, 0.1 pitch, 2x30 pin header, CUT to FIT, 3-87215-0, DigiKey# A26588-ND | | | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| LED-RED | D3 | 1 | 603 | | Lite On Inc, 0603, Red LED, LTST-C191KRKT, DigiKey# 160-1447-1-ND | | | |
| LED-RED | D4 | 1 | 603 | | Lite On Inc, 0603, Red LED, LTST-C191KRKT, DigiKey# 160-1447-1-ND | | | |
| LED-green | D1 | 1 | 603 | | Lite On Inc, 0603, Red-Orange LED, LTST-C191GKT, DigiKey# 160-1443-1-ND | | | |
| LED-orange | D2 | 1 | 603 | | Lite On Inc, 0603, Red-Orange LED, LTST-C191KFKT, DigiKey# 160-1445-1-ND | | | |
| LED-red orange | D5 | 1 | 603 | | Lite On Inc, 0603, Red Orange LED, LTST-C191KAKT, DigiKey# 160-1444-1-ND | | | |
| LM3671MF-1.8/NOPB | U5 | 1 | SOT-23-5 | SOT-23-5 Step-Down DC-DC Converter | LM3671MF-1.8/NOPB, DC-DC Down converter, DigiKey# LM3671MF-1.8/NOPBTR-ND | | | |
| LP38693MP-ADJ | U4 | 1 | SOT-223 | LP38693MPADJ: 0.5A LDO REGULATOR | LP38693MP-ADJ, LDO, SOT223-5, DigiKey#LP38693MP-ADJCT-ND | | | |
| LP38693MP-ADJ | U3 | 1 | SOT-223 | LP38693MPADJ: 0.5A LDO REGULATOR | LP38693MP-ADJ, LDO, SOT223-5, DigiKey#LP38693MP-ADJCT-ND | | | |
| NC7SP04P5X | U8 | 1 | SC70-5 | NC7SP04P5X INVERTER | Fairchild Semi, Inverter, NZ7SP04P5X, DigiKey# NC7SP04P5XCT-ND | | | |
| NC7SP04P5X | U7 | 1 | SC70-5 | NC7SP04P5X INVERTER | Fairchild Semi, Inverter, NZ7SP04P5X, DigiKey# NC7SP04P5XCT-ND | | | |
| NC7SZ175P6X | U10 | 1 | SC70-6 | NC7SZ175P6X LATCH | Fairhild Semi, latch, NC7SZ175P6X, DigiKey# NC7SZ175P6XCT-ND | | | |
| NC7SZ175P6X | U9 | 1 | SC70-6 | NC7SZ175P6X LATCH | Fairhild Semi, latch, NC7SZ175P6X, DigiKey# NC7SZ175P6XCT-ND | | | |
| 0.1UF | C16 | 1 | 603 | Chip cap, X7R, 0603 | Murata GRM188R72A104KA35D, 0.1UF, +-10%, 100V, X7R, DigiKey# 490-3285-1-ND | | | 0.1uF, X7R, recommend 50V - ac coupling |
| 0.047UF | C19 | 1 | 603 | Chip cap, X7R, 0603 | Murata GRM188R71H473KA61D, 0.047UF, +-10%, 50V, X7R, DigiKey# 490-3287-1-ND | | | 0.047uF, X7R, recommend 50V - ac coupling for termination of unused output |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| ROSENBERGER_HSD_CON | P1 | 1 | ROSENBERGER_HSD_CON | Rosenberger HSD connector, D4S20D-40ML5-Y | Rosenberger HSD connector, D4S20D-40ML5-Y | | | |
| SMA-bulkhead-NO-STUFF | J1 | 0 | sma-edge-round | SMA, PCB MOUNT | Johnson end launch, bulkhead, round contact, 142-0701-871, digikey# J610-ND | | No-Stuff | |
| SMA-bulkhead-NO-STUFF | J3 | 0 | sma-edge-round | SMA, PCB MOUNT | Johnson end launch, bulkhead, round contact, 142-0701-871, digikey# J610-ND | | No-Stuff | |
| SW-PB | S3 | 1 | | | Panasonic EVQ-PNF04M push switch, DigiKey# P13597SCT-ND | | | |
| SW DIP-2 | S1 | 1 | | DIP Switch | Grayhill, 78B02ST, SWITCH DIP EXTENDED SEALED 2POS, DigiKey# GH7180-ND | | | |
| SW DIP-2 | S2 | 1 | | DIP Switch | Grayhill, 78B02ST, SWITCH DIP EXTENDED SEALED 2POS, DigiKey# GH7180-ND | | | |
| | | 1 | | | | | | |
| Light Pipe | | 0 | | | 5-position light pipe, Lumex Opto LPF-C051303S, DigiKey# 67-1856-ND | | No-Stuff | |
| | | 1 | | | | | | |
| Header 4x1 | JP12 | 1 | | 4 Pin Header | Molex, 1x4 header pin, 0.1 pitch, DigiKey# WM2702-ND | consign | | |
| 1K | R28 | 1 | 603 | SMD R, +-1%, 0603 | Panasonic ERJ-3EKF1001V, 1Kohm, 1%, 0603, DigiKey# P1.00KHCT-ND | | | |
| 1K | R71 | 1 | 603 | SMD R, +-1%, 0603 | Panasonic ERJ-3EKF1001V, 1Kohm, 1%, 0603, DigiKey# P1.00KHCT-ND | | | |
| 49.9 | R80 | 1 | 603 | SMD R, +-1%, 0603 | Panasonic ERJ-3EKF49R9V, 49.9ohm, 1%, 0603, DigiKey# P49.9HCT-ND | | | 49.9 Ohm required for termination of unused output |
| | | 1 | | | | | | |
| 22 | R101 | 1 | 402 | SMD R, +-5%, 0402 | Panasonic ERJ-2GEJ220X, 22 Ohm, 5%, 0402, DigiKey# P22JCT-ND | | | |
| 22_OPEN | R102 | 0 | 402 | SMD R, +-5%, 0402 | Panasonic ERJ-2GEJ220X, 22 Ohm, 5%, 0402, DigiKey# P22JCT-ND | | No-Stuff | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| | R104 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.0 ohm, 0.1W, 0402, Digikey P0.0JCT-ND | | | |
| | R105 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.0 ohm, 0.1W, 0402, Digikey P0.0JCT-ND | | | |
| 0-NO-STUFF | R106 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.0 ohm, 0.1W, 0402, Digikey P0.0JCT-ND | | No-Stuff | |
| 2.2UH | L15 | 1 | 1007 | SMT inductor | Taiyo-Yuden, 2.2uH, 1A, 20%, BRL2518T2R2M, DigiKey# 587-1954-1-ND | | | |
| 0.1UF | C101 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.01UF | C102 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C103KA01D, Digikey 490-1313-1-ND | | | |
| 10UF | C103 | 1 | 805 | Chip cap, X7R, 0805 | Murata GRM21BR71A106KE51L, 10UF, 10%, 10V, X7R, 0805, DigiKey# 490-3905-1-ND | | | |
| CY2302 | U20 | 1 | CY2302_8SOIC | CY2302 Frequency Multiplier | Cypress, CY2302SXI-1, DigiKey# 428-2188-5-ND | | | |
| RAPC722X | JP11 | 1 | RAPC722X | Power jack | Switchcraft,RAPC722X,CONNN POWERJACK MINI.08" RA PCMT,Digikey# SC1313-ND | | | |
| 0_OPEN | R107 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.0 ohm, 0.1W, 0402, Digikey# P0.0JCT-ND | | No-Stuff | |
| 0_OPEN | R108 | 0 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.0 ohm, 0.1W, 0402, Digikey# P0.0JCT-ND | | No-Stuff | |
| MBRS1540T3 | D6 | 1 | MBRS1540T3 | Diode | On Semi,MBRS1540T3G,DIODE SCHOTTKY 1.5A 40V SMB,Digikey# MBRS1540T3GOSTR-ND | | | |
| MBRS1540T3 | D7 | 1 | MBRS1540T3 | Diode | On Semi,MBRS1540T3G,DIODE SCHOTTKY 1.5A 40V SMB,Digikey# MBRS1540T3GOSTR-ND | | | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 4.7UF_50V | C52 | 1 | 1206 | Chip cap, X7R, 1206 | TDK,C3216X7R1H475M160AC,CAP CER 4.7UF 50V 20% X7R 1206,Digikey# 445-8033-2-ND | | | |
| 22UF | C56 | 1 | 1206 | Chip cap, X5R, 1206 | TDK,C3216X5R1E226M160AB,CAP CER 22UF 25V 20% X5R 1206,Digikey# 445-6000-2-ND | | | |
| 22UF | C57 | 1 | 1206 | Chip cap, X5R, 1206 | TDK,C3216X5R1E226M160AB,CAP CER 22UF 25V 20% X5R 1206,Digikey# 445-6000-2-ND | | | |
| 22UF | C60 | 1 | 1206 | Chip cap, X5R, 1206 | TDK,C3216X5R1E226M160AB,CAP CER 22UF 25V 20% X5R 1206,Digikey# 445-6000-2-ND | | | |
| 0.1UF_50V | C66 | 1 | 603 | Chip cap, X7R, 0603 | TDK,C1608X7R1H104K080AA,CAP CER 0.1UF 50V 10% X7R 0603,Digikey# 445-1314-2-ND | | | |
| 0.1UF | C62 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C64 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C65 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| 0.1UF | C54 | 1 | 402 | Chip cap, X7R, 0402 | 16V, 10%, X7R, Murata GRM155R71C104KA88D, Digikey 490-3261-1-ND | | | |
| TBD | C61 | 0 | 402 | | | | No-Stuff | |
| 20UF | C55 | 1 | 1206 | Chip cap, X5R, 1206 | TDK,C3216X5R1E226M160AB,CAP CER 22UF 25V 20% X5R 1206,Digikey# 445-6000-2-ND | | | |
| 78.13nF-NO-STUFF | C53 | 0 | 402 | Chip cap, X7R, 0402 | KEMET,C0402C823K4RACTU,CAP CER 0.082UF 16V 10% X7R 0402,Digikey# C0402C823K4RACTU | | No-Stuff | |
| 10UF | C63 | 1 | 805 | Chip cap, X7R, 0805 | TDK,C2012X7R1A106K125AC,CAP CER 10UF 10V 10% X7R 0805,Digikey# 445-6857-2-ND | | | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 3.9nF | C58 | 1 | 402 | Chip cap, X7R, 0402 | KEMET,C0402C392K4RACTU,CAP CER 3900PF 16V 10% X7R 0402,DIGIKEY# C0402C392K4RACTU-ND | | | |
| 12pF | C59 | 1 | 402 | Chip cap, NP0, 0402 | KEMET,C0402C120J3GACAUTO,CAP CER 12PF 25V 5% NP0 0402,DIGIKEY# 399-6829-2-ND | | | |
| XFL4020-472ME | L12 | 1 | XFL4020-472ME | INDUCTOR | COILCRAFT,XFL4020-472ME_,Power Inductors | | | |
| XFL4020-472ME | L13 | 1 | XFL4020-472ME | INDUCTOR | COILCRAFT,XFL4020-472ME_,Power Inductors | | | |
| 10K | R91 | 1 | 603 | SMT R,0603 | Panasonic ERJ-3EKF1002V, 1%, 0.1W, 100ppm, Digikey P10.0KHCT-ND | | | |
| 10K | R92 | 1 | 603 | SMT R,0603 | Panasonic ERJ-3EKF1002V, 1%, 0.1W, 100ppm, Digikey P10.0KHCT-ND | | | |
| 0_DNL | R93 | 0 | 603 | SMD R, +-1%, 0603 | Panasonic ERJ-3GEY0R00V, 0ohm, 0603, DigiKey# P0.0GCT-ND | | No-Stuff | |
| 0_DNL | R94 | 0 | 603 | SMD R, +-1%, 0603 | Panasonic ERJ-3GEY0R00V, 0ohm, 0603, DigiKey# P0.0GCT-ND | | No-Stuff | |
| TBD | R96 | 0 | 603 | | | | No-Stuff | |
| 52.45K | R85 | 1 | 603 | | Vishay,PAT0603E5302BST1,RES 53.0K OHM 0.15W 0.1% 0603,Digikey# PAT0603E5302BST1-ND | | | |
| 20K | R86 | 1 | 603 | SMD R, +-1%, 0603 | Panasonic,ERJ-3EKF2002V,RES 20.0K OHM 1/10W 1% 0603 SMD,Digikey# P20.0KHTR-ND | | | |
| 20K | R88 | 1 | 603 | SMD R, +-1%, 0603 | Panasonic,ERJ-3EKF2002V,RES 20.0K OHM 1/10W 1% 0603 SMD,Digikey# P20.0KHTR-ND | | | |
| 34K | R87 | 1 | 603 | SMD R, +-1%, 0603 | Panasonic,ERJ-3EKF3402V,RES 34.0K OHM 1/10W 1% 0603 SMD,Digikey# P34.0KHTR-ND | | | |
| 30K | R89 | 1 | 603 | SMD R, +-1%, 0603 | Panasonic,ERJ-3EKF3002V,RES 30.0K OHM 1/10W 1% 0603 SMD,Digikey# P30.0KHTR-ND | | | |

| Part Type | Designator | Qty | Footprint | Description | Part Field 1 | Consign | No-Stuff | Critical |
|---|---|---|---|---|---|---|---|---|
| 5.69K | R90 | 1 | 603 | SMD R, +-0.1%, 0603 | Panasonic,PAT0603E5691BST1,RES 5.69K OHM 0.15W 0.1% 0603,Digikey# PAT0603E5691BST1-ND | | | |
| Test point-NO-STUFF | TP1 | 0 | TEST_POINT_TH | | | | No-Stuff | |
| Test point-NO-STUFF | TP2 | 0 | TEST_POINT_TH | | | | No-Stuff | |
| TPS65320 | U21 | 1 | TPS65320_Q_PWP | TPS65320QPWPQ1 | TI,TPS65320QPWPQ1, Step Down Buck Regulator | Consign | | |
| | R40 | 1 | 402 | SMT R, +-1% | Panasonic ERJ-2GE0R00X, 0.0 ohm, 0.1W, 0402, Digikey P0.0JCT-ND | | | |
| SW-PB | S4 | 1 | | | Panasonic EVQ-PNF04M push switch, DigiKey# P13597SCT-ND | | | |
| | R41 | 1 | 2512 | SMT R, 2512 | Vishay Dale,CRCW25120000Z0EGHP,RES 0.0 OHM 1.5W 2512 SMD,Digikey# 541-0.0RBCT-ND | | | |
| HEADER 3 | JP13 | 1 | | 1x3 header, male | Amp/Tyco, 0.1" pitch,  DigiKey# A26545-ND | | | |

## 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.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265