

MINI24/96 (CS8416+AK4393/6) BOM

| Position | Role | Value | Manufacturer | Type | Value | Notes | RS Components | Distrelec | Mouser |
|---|-------------------------|---------------|-------------------|---------------------------|--------------------|---|--|---------------------------|---|
| OpAmp Positive PS | | | | | | | | | |
| C24 | Smoothing | 2200 uF 25V | Nichicon | FW | 2200uF 63V | | | | 647-UFW1J222MHD |
| C12 | C24 Bypass | 100 nF 50V | | Position left void | | | | | |
| U9 | 15V Regulator | L7815CT | On Semiconductor | MC7812CTG | - | Much lower noise | 516-4834 | 647324 | 863-MC7812CTG |
| NEW | TO220 Heatsink | | Fischer | TO-220 | FK237SA2200 | MANDATORY | 189-9097 | 652469 | 532-576802B00 (**) |
| C38 | 15V Regulator C Out | 330uF 25V | Elna | RFS (Silmic II) | 100 uF 50V | | | | 647-UKZ1H101MHH Nichicon KZ 100uF 50V (**) |
| C14 | OpAmp Decoupling | 100 nF 50V | Elna | ROA (Cerafine) | 47 uF 25V | | | | 647-UKZ1E101MPM Nichicon KZ 100uF 25V (**) |
| OpAmp Negative PS | | | | | | | | | |
| C25 | Smoothing | 2200 uF 25V | Nichicon | FW | 2200uF 63V | | | | 647-UFW1J222MHD |
| C15 | C25 Bypass | 100 nF 50V | | Position left void | | | | | |
| U10 | -15V Regulator | L7915CT | On Semiconductor | MC7912CTG | - | Much lower noise | 516-6212 | 644639 | 863-MC7912CTG |
| C39 | -15V Regulator C Out | 330uF 25V | Elna | RFS (Silmic II) | 100 uF 50V | | | | |
| C17 | OpAmp Decoupling | 100 nF 50V | Elna | ROA (Cerafine) | 47 uF 25V | | | | |
| Signal Path (Common) | | | | | | | | | |
| C1 | SPDIF Coupling | 10 nF 50V | Wima | FKP2 | 10 nF 63V | Specific for pulse apps | 115-758 (10 Pack) | 828229 | 505-FKP20.01/63/2.5 |
| C46-C47 | LPF | 3300 pF | Wima | FKP2 | 3300 pF 63V | Best industrial cap for LPF | 115-720 (10 Pack) | 828226 | 505-FKP23300/63/2.5 |
| U3 | Opamp | NE5532 | Texas Instruments | OPA827 | x2 on BrownDog | Alt.: OPA627, OPA2211, OP275, OPA2132 | 709-2097 | | 595-OPA827AID |
| CNEW | OPA827 V+/V- Decoupling | NEW | Wima | FKP2 | 10 nF 63V | | 115-758 (10 Pack) | 828229 | 505-FKP20.01/63/2.5 |
| Signal Path (AK4393/AK4395) | | | | | | | | | |
| R24-R34 | LPF | 1KOhm 1/4W | PRP | PR9372 | 1KOhm 1/4W | | 707-7666 (Carbon) | | |
| C40, C41, C42, C43 | LPF | 1000 pF | Wima | FKP2 | 1000 pF 100V | | 484-2038 (10 Pack) | 828223 | 505-FKP21000/100/2.5 |
| Signal Path (AK4396) | | | | | | | | | |
| R24, R26, R30, R32, R23, R28, R29, R34 | LPF | 2.4 Kohm 1/4W | PRP | PR9372 | 2.2 Kohm 1/4W 0.1% | Alt: Carbon Film matched <1%, SMA0207 | 707-7694 (10 Pack) RS Carbon Film | 714682 SMA0207 0.1% | |
| R25, R27, R31, R33 | LPF | 150 Ohm 1/4W | Takman | REX | 150 Ohm 1/4W | Best: Riken 160 Ohm 1/2W Alt: PRP, Carbon Film matched <1% | | | |
| C40, C41, C42, C43 | LPF | 680 pF | Wima | FKP2 | 680 pF 100V | Alt.: Vishay KP1830 (tighter bass) | 484-2022 (10 Pack) | 828222 | 505-FKP2680/100/2.5 |
| Digital 3.3V (CS8416 & AK439x) | | | | | | | | | |
| C23 | Smoothing | 2200 uF 25V | Nichicon | FW | 2200uF 63V | | | | 647-UFW1J222MHD |
| C6 | C23 Bypass | 100 nF 50V | Evov-Rifa | SMR | 100 nF 50V | | | 820344 | |
| U4 | 9V Regulator | L7809CT | On Semiconductor | MC7809CTG | - | Much lower noise | 516-4812 | 644606 | 863-MC7809ACTG |
| C27 | 9V Regulator C Out | 10 uF 16V | BC Components | 038 | 100 uF 50V | | 684-2018 (5 Pack) | | 647-UFW1H101MPD Nichicon FW 100uF 50V (**) |
| C8 | C27 bypass | 100 nF 50V | Evov-Rifa | SMR | 100 nF 50V | | | 820344 | |
| C29 | 3.3V Regulator C Out | 10 uF 16V | BC Components | 038 | 47 uF 63V | | 684-2074 (5 Pack) | | 647-UFW1J470MED Nichicon FW 47uF 63V (**) |
| C9 | C27 bypass | 100 nF 50V | Evov-Rifa | SMR | 100 nF 63V | | | 820344 | |
| Analog 3.3V (CS8416) | | | | | | | | | |
| C34 | 3.3V Regulator C Out | 10 uF 16V | BC Components | 038 | 47 uF 63V | | 684-2074 (5 Pack) | | 647-UFW1J470MED Nichicon FW 47uF 63V (**) |
| C21 | C34 Bypass | 100 nF 50V | Evov-Rifa | SMR | 100 nF 50V | | | 820344 | |
| Analog 5V (AK439x) | | | | | | | | | |
| C31 | 5V Regulator C Out | 10 uF 16V | Elna | ROA (Cerafine) | 47 uF 25V | Best: Blackgate STD 22uF 16V | 684-2074 (5 Pack) | | |
| C11 | C31 Bypass | 100 nF 50V | | Position left void | | | | | |
| CS8416 Decoupling | | | | | | | | | |
| C2 | RXN Decoupling | 10 nF 50V | | Keep the original one | | | | | |
| C3 | VA Decoupling | 100 nF 50V | BC Components | 038 | 100 uF 50V | Alt: SEPC 180uF 16V, LS 150uF 10V, LF 100uF 16V | 684-2018 (5 Pack) | 813008 Sanyo SEPC 100 16V | 647-UFW1H101MPD Nichicon FW 100uF 50V (**) |
| C36 | CRIP | 1 nF 50V | Wima | FKP2 | 1000 pF 100V | | | | |
| C5 | CFILT | 22 nF 50V | | Keep the original one | | | | | |
| C28 | VD Decoupling | 10 uF 16V | Nichicon | LF | 100 uF 16V | Alt: SEPC 180uF 16V, LS 150uF 10V | 714-9076 (5 Pack) Nichicon LS 100uF 16V | 813008 Sanyo SEPC 100 16V | 647-PLF1C101MDL4 Nichicon LF 100uF 16V |
| C4 | VD Decoupling HF | 10 nF 50V | | Position left void | | | | | |
| AK4393/6 Decoupling | | | | | | | | | |
| C30 | DVDD Decoupling | 10 uF 16V | Nichicon | LF | 100 uF 16V | Alt: SEPC 180uF 16V, LS 150uF 10V | 714-9076 (5 Pack) Nichicon LS 100uF 16V | 813008 Sanyo SEPC 100 16V | 647-PLF1C101MDL4 Nichicon LF 100uF 16V |
| C18 | DVDD Decoupling HF | 100 nF 50V | | Position left void | | | | | |
| C32 | AVDD Decoupling | 10 uF 16V | Elna | ROA (Cerafine) | 10 uF 50V | | | | |
| C19 | AVDD Decoupling HF | 100 nF 50V | | Position left void | | | | | |
| C33 | VREF Decoupling | 10 uF 16V | Elna | ROA (Cerafine) | 10 uF 50V | | | | |
| C20 | VREF Decoupling HF | 100 nF 50V | | Position left void | | | | | |
| C35 | VCOM Decoupling | 10 uF 16V | Elna | ROA (Cerafine) | 10 uF 50V | | | | |
| C22 | VCOM Decoupling HF | 100 nF 50V | | Keep the original ceramic | | | | | |

** not tested

Evov-Rifa SMR could be replaced with Panasonic ECHU (SMD but 4,8mm long), both have PPS dielectric which is best for PS bypassing, sometimes lacks bass and a ceramic is preferred

For all opamps check on eBay: they could be found much cheaper!

Bordeaux text indicates parts to be bought from 'boutique' stores like PartsConnexion, HiFi Collective

Order codes are selected by availability, often an alternate part is indicated instead of the best one