
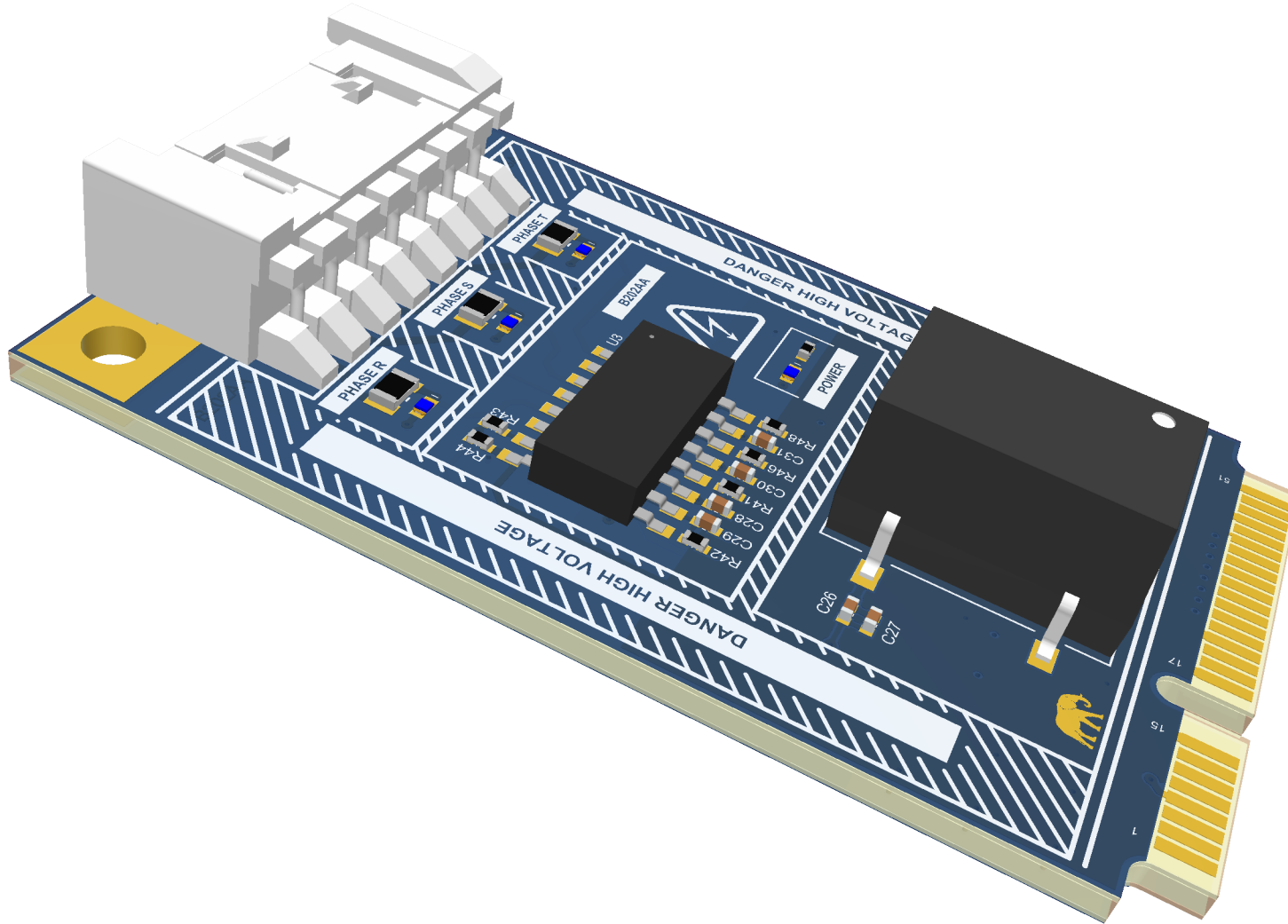


B202AA-PCle module is an energy measurement module (EMM) for poly phase power monitoring systems. It is designed for real-time monitoring for a variety of typical three-phase configurations in industrial applications. It is available in a mini PCIe size PCB module.

The B202AA-PCle provides up to six analog inputs for interfacing to voltage and current sensors. Scaled voltages from the sensors are fed to the single converter front-end utilizing a high-resolution delta-sigma converter. Supported current sensors include current transformers (CT), Rogowski coils, and resistive shunts.

An embedded 24-bit measurement processor and firmware perform all necessary computations and data formatting for accurate reporting to the host. With integrated flash memory for storing nonvolatile calibration coefficients and device configuration settings, the B202 is capable of being a completely autonomous solution.

|                                    |  |  |                          |                                                                                   |                                                                                       |
|------------------------------------|--|--|--------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| B202AA-PCle                        |  |  | Engineer : Gunce Akkoyun | -<br>Buyuk Kayacak Mah. 4. OSB<br>103. Cad. No : 12<br>Selcuklu / Konyalı Türkiye |  |
| Size : A4                          |  |  | Customer : -             |                                                                                   |                                                                                       |
| Project :PolyPhase Energy Analyzer |  |  | Product ID : B202AA-PCle |                                                                                   |                                                                                       |
| Date : 19.10.2022                  |  |  | Module ID : B202AA-PCle  |                                                                                   |                                                                                       |
| Time : 11:35                       |  |  | Version : R1             |                                                                                   |                                                                                       |
| Page : 1 / 6                       |  |  | Revision : 00.00.01      |                                                                                   |                                                                                       |
| File : B202AA-PCle.PCBDwf          |  |  |                          |                                                                                   |                                                                                       |



## Layer Stack Legend

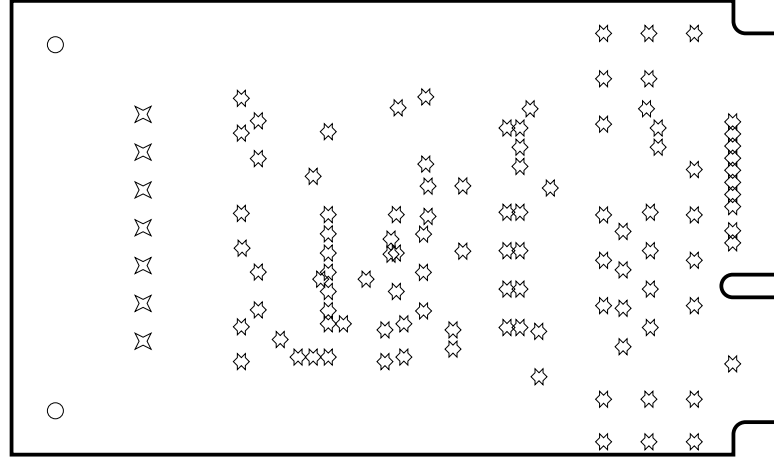
| Material         | Layer                 | Thickness | Dielectric Material | Type           | Gerber |
|------------------|-----------------------|-----------|---------------------|----------------|--------|
|                  | Top Overlay           |           |                     | Legend         | GTO    |
|                  | Surface Material      | 0.03mm    | SM-001              | Solder Mask    | GTS    |
|                  | Nickel, Gold          | 0.02mm    |                     | Surface Finish |        |
| CF-004           | Top Layer             | 0.04mm    |                     | Signal         | GTL    |
| Prepreg          |                       | 0.21mm    | PP-022              | Dielectric     |        |
| CF-004           | Int1                  | 0.04mm    |                     | Signal         | G1     |
| Core             |                       | 0.99mm    | Core-042            | Dielectric     |        |
| CF-004           | Int2                  | 0.04mm    |                     | Signal         | G2     |
| Prepreg          |                       | 0.21mm    | PP-022              | Dielectric     |        |
| CF-004           | Bottom Layer          | 0.04mm    |                     | Signal         | GBL    |
| Nickel, Gold     | Bottom Copper Plating | 0.02mm    |                     | Surface Finish |        |
| Surface Material | Bottom Solder         | 0.03mm    | SM-001              | Solder Mask    | GBS    |
|                  | Bottom Overlay        |           |                     | Legend         | GBO    |

Total thickness: 1.64mm

www.github.com/akkoyun/B202AA-PCle

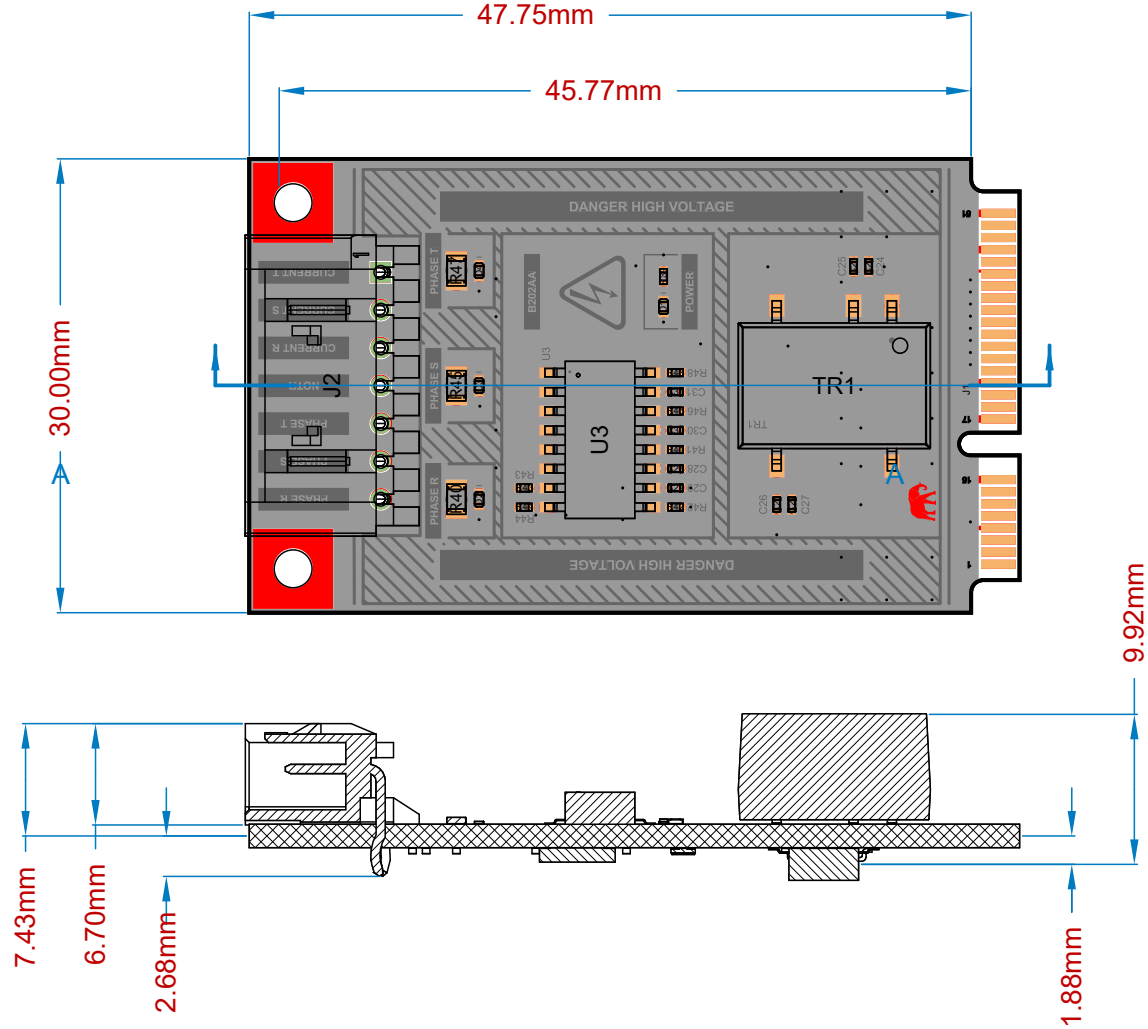
Bill Of Materials

| Designator                                                                                | Quantity | Manufacturer Name             | Manufacturer Part Number |
|-------------------------------------------------------------------------------------------|----------|-------------------------------|--------------------------|
| C1, C2, C3, C4, C27, C28, C30, C31                                                        | 8        | KEMET                         | C0402C475M9PACTU         |
| C5, C6, C7, C14, C15, C18, C19, C20, C24, C25, C26, C29, C32, C33                         | 14       | AVX                           | 04026D104KAT4A           |
| C8, C9, C10                                                                               | 3        | AVX                           | 04026C473KAT2A           |
| C11, C12, C13, C21, C22, C23                                                              | 6        | AVX                           | 04026C102MAT2A           |
| C16, C17                                                                                  | 2        | KYOCERA AVX                   | 04025A8R0CAT2A           |
| D1                                                                                        | 1        | ROHM Semiconductor            | SML-P12VTT86R            |
| D2, D3, D4                                                                                | 3        | ROHM Semiconductor            | SML-P12MTT86R            |
| J2                                                                                        | 1        | Molex                         | 53426-0710               |
| R1, R3, R5, R7, R39, R43                                                                  | 6        | Vishay                        | CRCW0402330RFKED         |
| R2, R4, R6, R8, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R31, R32, R42 | 19       | Vishay                        | CRCW040210K0FKED         |
| R9, R11, R13                                                                              | 3        | Vishay                        | CRCW040264R9FKED         |
| R10, R12, R14, R36, R37, R38                                                              | 6        | Vishay                        | CRCW0402750RFKED         |
| R15, R16, R17                                                                             | 3        | Vishay                        | CRCW040234R8FKED         |
| R30                                                                                       | 1        | Vishay                        | CRCW04020000Z0ED         |
| R33, R34, R35                                                                             | 3        | Vishay                        | CRCW08052M00JNEA         |
| R40, R45, R47                                                                             | 3        | Vishay Dale                   | CRCW0805220KJNEAHP       |
| R41, R44, R46, R48                                                                        | 4        | Vishay                        | CRCW040247K0FKED         |
| TR1                                                                                       | 1        | CUI Inc.                      | PDS1-S3-S3-M             |
| U1, U3                                                                                    | 2        | Vishay Semiconductors         | TCMT4100                 |
| U2                                                                                        | 1        | Silergy                       | MAX78630+PPM/D00         |
| U4                                                                                        | 1        | Texas Instruments             | ISO7221ADR               |
| X1                                                                                        | 1        | Kyocera Electronic Components | CX2016DB20000D0GPSC1     |



Drill Table

| Symbol    | Count | Hole Size | Plated | Hole Tolerance |
|-----------|-------|-----------|--------|----------------|
| ☆         | 104   | 0.20mm    | Plated |                |
| ✱         | 7     | 1.00mm    | Plated |                |
| ○         | 2     | 2.60mm    | Plated | +/-0.05mm      |
| 113 Total |       |           |        |                |



|                           |  |                                     |                          |  |                                                                                                        |
|---------------------------|--|-------------------------------------|--------------------------|--|--------------------------------------------------------------------------------------------------------|
| B202AA-PCle               |  |                                     | Engineer : Gunce Akkoyun |  | <div>Buyuk Kayacik Mah. 4. OSB<br/>103. Cad. No : 12<br/>Selcuklu / Konya Türkiye</div> <div>stf</div> |
| Size : A4                 |  | Project :PollyPhase Energy Analyzer | Customer : -             |  |                                                                                                        |
| Date : 19.10.2022         |  |                                     | Product ID : B202AA-PCle |  |                                                                                                        |
| Time : 11:35              |  | Page : 6 / 6                        | Module ID : B202AA-PCle  |  |                                                                                                        |
| File : B202AA-PCle.PCBDwf |  |                                     | Version : R1             |  |                                                                                                        |
|                           |  |                                     | Revision : 00.00.01      |  |                                                                                                        |