

APPENDIX N

Connecting SKR PRO V1.1 with MAX31865 Amplifier Board via Software SPI

Marlin 2.0.x Firmware Setup via [Technique #1](#)

- In VScode edit the file ‘temperature.cpp’ file (it is located in “.../Marlin/src/module/” and change 400 to 430 in the following line [around line 1378 (there is only one occurrence)]:

```
return (
    #if ENABLED(MAX6675_IS_MAX31865)
        max31865.temperature(100, 400) // 100 ohms = PT100 resistance. 400 ohms = calibration resistor
    #else
```

To

```
return (
    #if ENABLED(MAX6675_IS_MAX31865)
        max31865.temperature(100, 430) // 100 ohms = PT100 resistance. 400 ohms = calibration resistor
    #else
```

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The screenshot shows the Visual Studio Code interface with the Marlin 2.0.6 repository open. The left sidebar shows the project structure under 'OPEN EDITORS' and 'MARLIN-2.0.6'. The main editor window displays the 'temperature.cpp' file. A yellow box highlights the file tab in the sidebar. A green box highlights the code block starting with '#if ENABLED(MAX31865)' which implements the MAX31865 driver. A black box highlights the file path 'C:\Firmware\Ender3\SKRV1.1-PRO\Marlin-2.0.6\Marlin\src\module\temperature.cpp' in the status bar.

```

1354     // Return degrees C (up to 999, as the LCD only displays 3 digits)
1355     return _MIN(value + THERMISTOR_ABS_ZERO_C, 999);
1356 }
1357 #endif
1358
1359 #if HAS_HOTEND
1360     // Derived from RepRap FiveD extruder::getTemperature()
1361     // For hot end temperature measurement.
1362     float Temperature::analog_to_celsius(const int raw, const uint8_t e) {
1363         if (e > HOTENDS - DISABLED(TEMP_SENSOR_1_AS_REDUNDANT)) {
1364             SERIAL_ERROR_START();
1365             SERIAL_ECHO((int)e);
1366             SERIAL_ECHOLNPGM(STR_INVALID_EXTRUDER_NUM);
1367             kill();
1368             return 0;
1369         }
1370
1371         switch (e) {
1372             case 0:
1373                 #if ENABLED(HEATER_0_USER_THERMISTOR)
1374                     return user_thermistor_to_deg_c(CTI_HOTEND_0, raw);
1375                 #elif ENABLED(HEATER_0_IS_MAX31865)
1376                     return max31865.temperature(100, 430); // 100 ohms = PT100 resistance. 400 ohms = calibration resistor
1377                                         // GADGETANGEL was (100,400)
1378                 #else
1379                     raw * 0.25
1380                 #endif
1381             };
1382             #elif ENABLED(HEATER_0_USES_AD595)
1383                 return TEMP_AD595(raw);
1384             #elif ENABLED(HEATER_0_USES_AD8495)
1385                 return TEMP_AD8495(raw);
1386             #else
1387                 break;
1388         }
1389     case 1:
1390         #if ENABLED(HEATER_1_USER_THERMISTOR)
1391             return user_thermistor_to_deg_c(CTI_HOTEND_1, raw);
1392         #elif ENABLED(HEATER_1_USES_MAX6675)
1393             return raw * 0.25;
1394         #elif ENABLED(HEATER_1_USES_AD595)
1395             return TEMP_AD595(raw);
1396         #elif ENABLED(HEATER_1_USES_AD8495)
1397             return TEMP_AD8495(raw);
1398         #else
1399             break;
1400     }
1401 }

```

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