BeeProg2AP

Introduction

BeeProg2AP is the core for automated programmers and automatic test equipments (ATE). It is an extremely fast universal programmer with 48 powerful pindrivers designed for low volume production programming. Using build-in ISP connector the programmer is able to program ISP capable chips in-circuit.

BeeProg2AP is an industrial version of **BeeProg2** programmer for usage in automated programmers. The differences are:

- The dimensions of the BeeProg2AP programmer are reduced - compared to the BeeProg2 - It is important mainly for implementation into ATE machines.
- More mechanically stable case to be immune against vibration during operation. The case of BeeProg2AP is prepared to be fastened from top or from bottom of programmer body into automated programmer working place. For ISP programming only the case of BeeProg2AP can be fastened from left side too.
- Different construction of programming modules, stable enough for insert/replace chips by mechanical arm and also that allow keeping identical position of ZIF socket also after replacing of the module.

BeeProg2AP can be implemented into automated programmer or ATE machine as ISP programmer identically as **BeeProg2** programmer - using of standard PC. **BeeProg2AP** can be connected to the control PC of automated programmer too. Up to 8 BeeProg2AP can be attached to one computer using USB hub or USB ports of the PC

BeeProg2AP can be implemented into available 3rd party automated programmers and handlers by using simple remote control of the **PG4UWMC** control software. There exist examples of implementation for standard programming languages and of course we are ready to help customer with this task.

Note: *For other (standard) parameters of BeeProg2AP programmer, see description of BeeProg2 please.*

BeeProg2AP programming modules have schematics identical like modules for BeeProg2 programmer, but these modules are mechanically designed for perfect stability at the top of the programmer and also in intent to keep identical position if the programming module is exchanged. There are available programming module for device in PLCC, SOIC, PSOP, SSOP, TSOP, TSSOP, TQFP, QFN (MLF), BGA and other packages.

Note: *The programming modules have reference pin (corner) points to Left-Up corner of programming module. We accept also orders for other orientation of ZIF socket at programming module if needed, discuss please situation with our sales department.*

BeeProg2AP programmer is driven by comfortable and easy to use control program, which work with all versions of MS Windows from Windows XP to Windows 10 64-bit

It is important to remember that in most cases new devices require **only a software update** due to the BeeProg2AP is truly universal programmer. With our unique quick reaction to customer's needs - software update can be ready within a day from request by OnDemand software

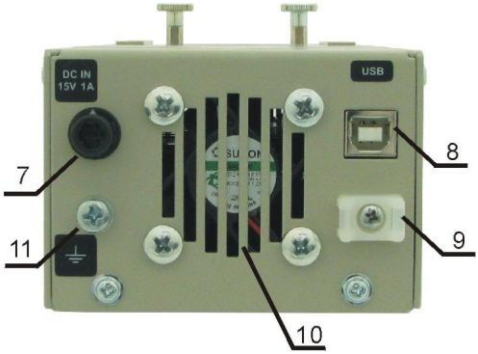
Advanced design including protection circuits, original brand components and careful manufacturing and burning allows us to provide a **three-year warranty** on parts and labor for the BeeProg2AP (limited to 500 insertion of programming module to Programming Module Interface connectors).

BeeProg2AP elements

1. Programmer Module Interface (PMI) connectors
2. work result LEDs
3. power/sleep LED of site
4. ISP connector (20 pins connector 2-1634689-0 from TE connectivity)
5. M4 nuts for fastening BeeHive204AP to upper plate
6. programming module fixating screws

Right top view to BeeProg2AP

7. power supply connector
8. type B USB connector for PC ↔ BeeHive204AP communication cable
9. tie mount for fixating USB cable
10. temperature controlled fan
11. "GND" screw can be used for grounding of the programmer



Rear view to BeeProg2AP

Connecting BeeProg2AP to the PC

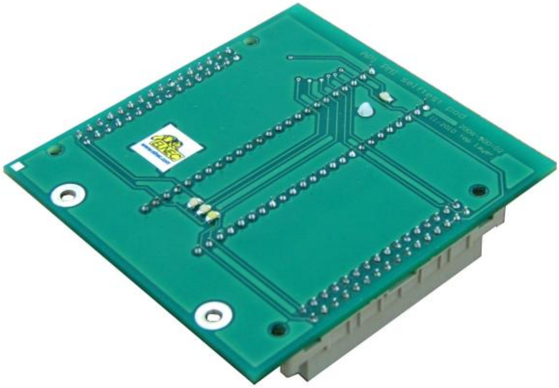
Recommendation for connecting programmer to PC:
1. make ground connection between programmer and PC or other ground
2. connect programmer with PC via USB cable
3. connect power supply to programmer
4. run PG4UW control program and connect programmer

Selftest and calibration check

If you feel that your programmer does not react according to your expectation, please run the programmer (ISP connector) selftest using AP1 PMI selftest pod (AP1 ISP connector selftest pod), enclosed with the standard delivery package.

Selftest of programmer

- Insert AP1 PMI selftest pod into Programmer Module Interface (PMI) connectors of the programmer.
- Run selftest of programmer in PG4UW (Programmer / Selftest plus).



AP1 PMI selftest pod

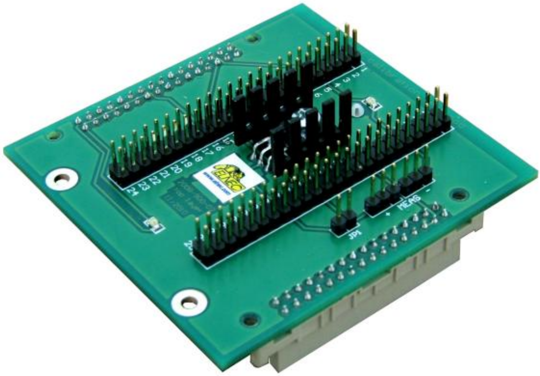
Selftest of ISP connector

- Insert **AP1 ISP connector selftest pod** into Programmer Module Interface (PMI) connectors of the programmer.
- Interconnect 20 pins connector of **AP1 ISP connector selftest pod** with an ISP connector of the programmer with an ISP cable, included in delivery programmer package. Be sure that pins are interconnected properly (i.e. 1-1, 2-2... 20-20).
- Run selftest of ISP connector in PG4UW (Programmer / Selftest ISP connector…).

AP1 ISP connector selftest pod

Calibration test

- Insert AP1 calibration test pod into Programmer Module Interface (PMI) connectors of the programmer.
- Run calibration test of programmer in PG4UW (Programmer / Calibration test).



AP1 calibration test pod

Multiprogramming by BeeProg2AP

During installation of PG4UW at Select Additional Tasks window you check, if is allowed install BeeProg2AP multiprogramming control support.
For start of BeeProg2AP multiprogramming is necessary run special control program **pg4uwmc.exe**. At this program user assign BeeProg2AP to control programs, may load projects for all BeeProg2AP and run PG4UW for every connected and assigned BeeProg2AP.

Technical specification

GENERAL

- external power supply unit: operating voltage 100 - 240V AC rated, 90 - 264 VAC max., 47-63 Hz, DC output 15V, 1A, output cable length 1000 mm (39.4 inch)
- power consumption maximum 20W active, about 2W sleep
- dimensions 84x205x61 mm (3.3x8.1x2.4 inch)
  Dimensions were measured without programming module inserted and does not include projections. Total height of BeeProg2AP programmer with programming module inserted depends on ZIF socket height and can vary between 80-90mm.
- weight 0.7kg (1.5 lb)
- operating temperature 5°C - 40°C (41°F - 104°F)
- operating humidity 20% - 80%, non condensing

HARDWARE

For detailed hardware specification see BeeProg2 hardware specification.