



## 53XX BDA

### Manual Universal Thin Wire Bonder

Our new **manual universal thin wire bonder 53XX BDA** is the perfect choice for R&D labs, prototype building and repair facilities whenever highest bond quality is required but only a limited budget is available. It offers **two bond processes** in one bond-head: gold ball-bonding and deep-access wedge bonding. Switching over could not be simpler: just move the flame-off unit back, insert the wire clamp and replace the bond capillary with a wedge and you are ready to go.

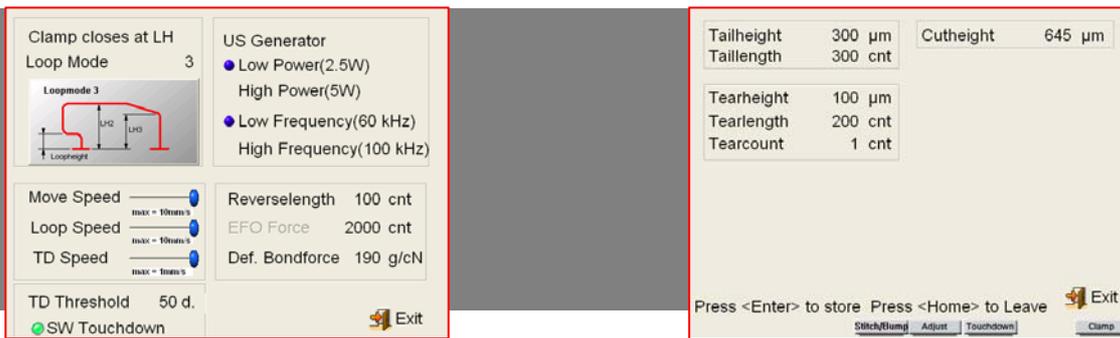
The second unique feature of the 53XX BDA is the built-in **motorized Y-axis**. It is fully programmable and produces an entire bond loop, complete with programmable tear-off function and tail definition. Especially for miniaturized microwave bonds, this guarantees perfectly reproducible bonds with no operator influence. Even for thicker wires, the **cascading clamp system** with one clamp above the wedge and a second clamp at the wedge foot ensures that the wire tear-off is reliable and constant.

Complicated loop forms including **reverse loops** or **stitch bonds** are easily executed with minimum operator influence. Ball-bumping is also provided. Uncommonly for a manual bonder, all parameters are programmed and saved on the internal hard disk, supported by a large **LCD colour display** and our popular **shuttle wheel** which is quick and intuitive to handle.

Our proprietary ultrasonic system is software-controlled between 65 kHz or 100 kHz depending to the ordered transducer to allow best adaptation to different bonding surfaces. The transducer is easily exchanged by the user.

The 53XX BDA software allows several operating modes from a **fully manual** step-by-step mode to a **production mode** where the operator only has to move to the bond positions and then pushes a single button. Only a **minimum of training** is required.

Hard- and software of the 53XX BDA are very similar to the 5310, 5330 and 5350 wire bonders from the 5300 family. This keeps training and maintenance cost extremely low. At the same time, the bond head geometries are largely identical to those of the fully automatic bonders from F&S BONDTEC, ensuring bonds of the **highest quality** and making **scale-up** to larger production volumes trouble-free.



## Bond System

### Wire types

Ball-bonding:  
Gold wire 17,5 ... 50 µm on 2" spool  
Wedge-wedge bonding:

Aluminium or gold wire 17,5 ... 75 µm  
Ribbon size 30 x 12,5 ... 250 x 25 µm

### Bond head

Ball-bonding or Wedge-bonding for thin wire  
Capillaries of 9 ... 16 mm length  
Bond wedges of ¾ or 1" length  
Bond force programmable 5 to 300 cN;  
voice-coil bond force system

### Ultrasonic System

Contactless electronic touchdown sensor  
proprietary 67 kHz system, optionally switchable  
to 100 kHz

## Control System

### Hardware

Single-board PC with Windows operating system  
TFT color display 10,4" (640x480 pixel)  
simple and rapid operation and programming through shuttle-  
wheel with push-button

### Control modes

manual, semi-auto production mode  
program line-step for testing

### Loop types

triangular, rectangular, reverse, stitch,  
all programmable

## Mechanics

### Axes

Programmable linear Z-axis with 60 mm travel;  
step resolution 1 µm  
Programmable linear Y-axis with 25 mm travel;  
step resolution 2 µm

### Manipulator

in X and Y, working range 18x18 mm  
stepdown reduction 1:7

### Substrate holder

heated with digital controller,  
standard 80 mm Ø for parts up to 2x2", up to 250°C,  
mechanical clamping  
optionally 4x4" and 95 mm Ø, also with vacuum, up to  
200°C

## General

### Dimensions

Width 630 mm, depth 580 mm; height 400 mm,  
weight ca. 40 kg

### Supplies

100...240 VAC, single-phase, 50/60 Hz, max. 230 VA  
Ø 6 mm standard vacuum tubing

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