

# CHAPTER 1. OVERVIEW

## 1-1 INTRODUCTION

TYPHOON 486-386/ISA motherboard is the most uniform and complete solution to the high performance and high integration needs of 80486 and 80386/ISA systems. The unit supports the entire range of 486 & 386/ISA platforms: 486DX2-66/50 Mhz, 486DLC-40/33MHZ and 388DX-40/33/25MHz CPU's with only one motherboard. The TYPHOON motherboard consists of only one chip and 82C206 solution components, giving the highest integration implementation of any 486-386/ISA PC board in the industry. Consequently, the highest reliability can be found on the 486-386/ISA motherboard. In addition to that, it features write-back cache, posted-write buffer, burst mode cache fill and a rich set of cache configuration possibilities. The motherboard will accommodate 128MB memory directly on the system board. This motherboard is ideal for high performance and high integrated 80486 and 80386/ISA PC systems running DOS, XENIX 386, UNIX, OS/2, NOVELL and 386 Netware environments, as well as CAD/CAE applications.

## 1-2 SPECIFICATIONS:

- .CPU SUPPORTS: 80486DX2-66/50Mhz, 80486DX-50/33/25Mhz, 486SX- 25/20Mhz, 487SX, 486DLC-40/33/25MHz, 386DX-40/33/25 microprocessor options.
- .80387 Co-Processor socket
- .UNIchip Single Chip solution.
- .256KB, 128KB, 64KB, 32KB write-back cache or direct map cache with fast burst mode and posted write buffer.
- .Fast reset and gate A20 switch features.
- .1MB, 2MB, 4MB, 5MB, 8MB, 16MB, 17MB, 20MB, 32MB, 64MB, 65MB, 68MB, 80MB, 128MB memory size options.
- .Six 16-bit and two 8-bit AT slots.
- .Speaker, keylock, reset, power and keyboard connectors.
- .Power and tube light connectors.
- .Hardware and software turbo switching.
- .Real time clock with an battery on-board
- .3/4 Baby AT size board.
- .AMI Bios.
- .Page interleave mode.
- .Shadow RAM in increments of 256K/384K remap.
- .Fully programmable timing parameters
- .Video Cache.
- .Cache RAM read / write 0 wait state.

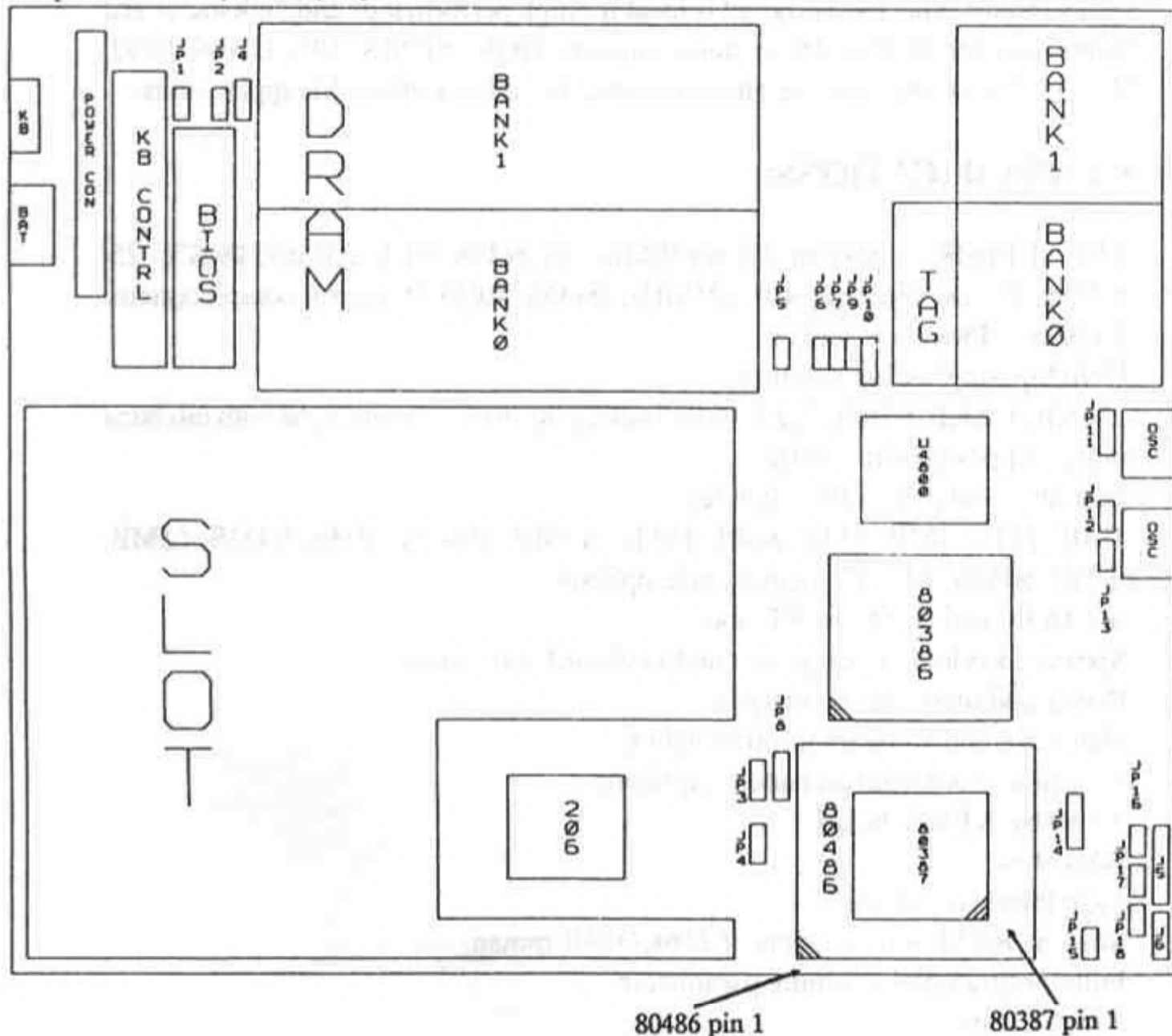
# 1-3 PERFORMANCE

486/System Speed	20Mhz	25Mhz	33Mhz	50Mhz	66Mhz
Landmark V1.14	90.00	114.1	151.9	200+	200+
Landmark V2.0	69.00	84.21	111.51	167.27	221

386/System Speed	25MHz	33MHz	40MHz
Landmark V1.14	39.6	53.3	64.3
Landmark V2.0	37.84	50.92	61.28

Jumpers' Location ( All the jumpers have been preset to 80486 mode with 64KB cache. )



NOTE: pin 1 of 80486 and pin1 of 80387 are not at the same corners.

## 2-2 JUMPER SETTINGS

NOTE: Each socket has its own direction. The corner mark of each socket must match the corner mark of each part and the pin 1 of each socket must match pin 1 of each part. Follow the instruction step by step to configure the motherboard carefully before turning on the power.

### JP1: DISPLAY MODE SELECT

CONDITION	JP1
COLOR	Short (Default Setting)
MONOCHROME	Open

### JP3, JP4, JP5, JP8, JP10, JP12, JP15: CPU SELECT

CPU	JP4	JP8	JP12	JP5	JP10	JP3	JP15
486SX	OPEN	2-3	1-2	CLOSE	1-2	N/A	1-2
486DX	1-2	1-2,3-4	1-2	CLOSE	1-2	N/A	1-2
487SX	2-3	1-2,3-4	1-2	CLOSE	1-2	N/A	1-2
386DX-33/40	N/A	N/A	2-3	OPEN	2-3	1-2	2-3
386DX-25	N/A	N/A	2-3	OPEN	2-3	2-3	2-3
486/DLC 33/40	N/A	N/A	2-3	OPEN	2-3	1-2	2-3

### JP6, JP7, JP9, JP11, CACHE SIZE SELECT.

	JP6	JP7	JP9	JP11
32K	OPEN	OPEN	OPEN	2-3
64K	OPEN	CLOSE	OPEN	1-2
128K	OPEN	CLOSE	CLOSE	1-2,3-4

## 2-3 INSTALLATION OF PROCESSOR AND OSCILLATOR

Notice: The CPU speed must match the oscillator speed. The corner mark of the CPU socket match the corner mark of the CPU installed.

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CPU(Mhz)	486SX-20/25	486DX-25/DX2-50	486DX-33/DX2-66	486DX-50
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OSC(Mhz)	20/25	25	33	50
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CPU(Mhz)	486DLC-33/40	487SX-25/20	386DX-40/33/25
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OSC(Mhz)	66/80	25/20	80/66/50
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## 2-4 INSTALLATION OF RAM

- Notice:
1. 80ns DRAM is required for 20Mhz, 25Mhz, 33Mhz, and 50Mhz CPU.
  2. No jumper setting is required for any RAM configuration.
  3. Pin 1 of the SIMM module must match the pin 1 of SIMM socket.
  4. Each bank requires four SIMM modules.
  5. Possible RAM configurations are as follows:

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RAM SIZE	RAM TYPE OF BANK 0	RAM TYPE OF BANK 1
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1MB	256X9 SIMM	*****
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2MB	256X9 SIMM	256X9 SIMM
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4MB	1MBX9 SIMM	*****
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5MB	1MBX9 SIMM	256X9 SIMM
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RAM SIZE	RAM TYPE OF BANK 0	RAM TYPE OF BANK 1
8MB	1MBX9 SIMM	1MBX9 SIMM
16MB	4MBX9 SIMM	*****
17MB	4MBX9 SIMM	256X9 SIMM
20MB	4MBX9 SIMM	1MBX9 SIMM
32MB	4MBX9 SIMM	4MBX9 SIMM
64MB	16MBX9 SIMM	*****
65MB	16MBX9 SIMM	256KX9 SIMM
68MB	16MBX9 SIMM	4MX9 SIMM
80MB	16MBX9 SIMM	4MX9 SIMM
128MB	16MBX9 SIMM	16MBX9 SIMM

## 2-5 INSTALLATION OF SRAM (CACHE MEMORY)

Refer to section 2-2 for jumper settings.

Possible SRAM and TAG RAM configurations are as follows:

SIZE	AMOUNT OF 8K X 8 SRAM	AMOUNT OF 32K X 8 SRAM
64K	9 ( BK0, BK1, TAG )	0
128K	1 TAG	4 (BK0)
256K	0	9 (BKO, BK1, TAG)

The SRAM and TRAM speed varies with different CPU speeds.

<b>CPU Speed</b>	<b>SRAM Speed</b>	<b>TAG RAM</b>
25 MHZ	35 ns	35 ns
33 MHZ	25 ns	25 ns
40MHZ	25 ns	20/25 ns
50 MHZ	25 ns	20/25 ns

## **2-6 KEYBOARD GATE A20 SETTINGS:**

	<b>JP14</b>
386 KBGA20	1-2
386 EMULATE KBGA20	OPEN
486 DX/DLC EMULATE KBGA20	2-3
486 DX/DLC KBGA20	3-4

## **2-7 CMOS RAM BATTERY SETTING:**

	<b>JP2</b>
Normal Operation	1-2
Discharge CMOS	2-3