



I General Description

The UM82C480 is a highly integrated, IBM PC/AT compatible chip set for high performance 80386/80486 based personal computer systems. Built with exquisite cache controller in advanced 1.0 μ m CMOS technology, UM82C481 (Integrated Memory Controller, IMC), UM82C482 (Integrated System Controller, ISC), with UM82C206 (Integrated Peripheral Controller, IPC), and limited counts of commercial parts constitute a low cost, highly reliable, full advanced feature personal computer system.

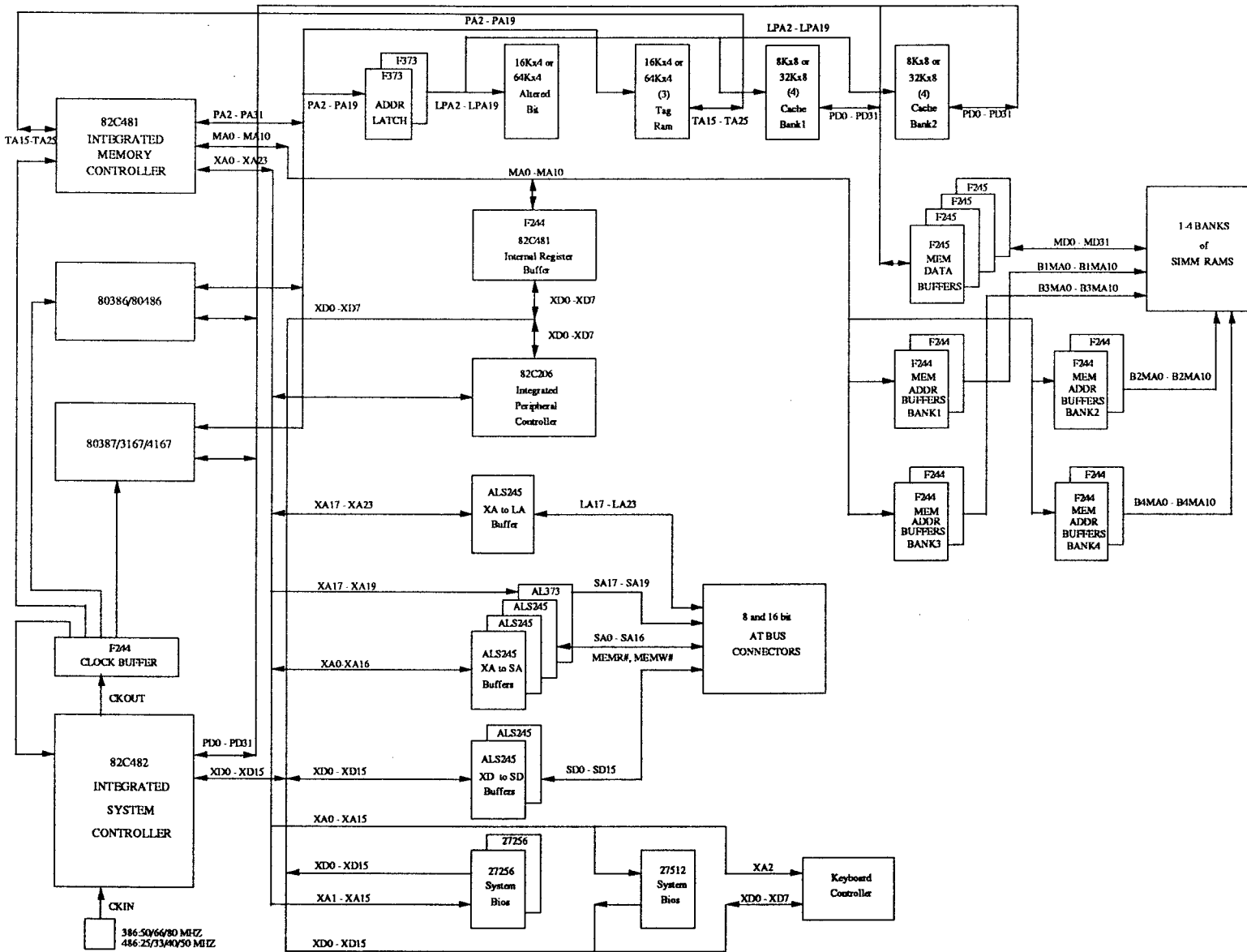
II Features

- * 100% IBM PC/AT compatible
- * Support 80386 CPU running at 25/33/40 MHz
- * Support 80486 CPU running at 25/33/40/50 MHz in 1X clock
- * Support Intel 80387 / Weitek 3167 / Weitek 4167 Floating Point Coprocessors
- * Built-in cache controller:
 - Direct-mapped organization with write-back operation
 - 0 wait state for cache hit
 - Flexible cache size: 32/64/128/256/512/1024 KB
 - Hidden DRAM refresh to boost system performance
 - Built-in registers to support three independent non-cacheable regions
 - Support cache line fill as well as 80486 burst mode
 - Support Automatic Memory Size Detection
- * Sophisticated DRAM controller:
 - Support Fast/Standard page mode
 - Support 4 banks CPU speed DRAM with memory size up to 64MB
 - Support mixable 256Kx9, 1Mx9, 4Mx9 DRAM modules
 - Programmable DRAM wait states
 - Support 256KB or 384KB (A to F segments of first 1MB) relocation to the top of DRAM memory
- * Support sophisticated Shadow RAM for video and system BIOS (C, D, E, F segments)
- * Support fast GATE A20 and fast CPU RESET to optimize OS/2 operations
- * Synchronous AT bus clock with programmable clock (divided by 2, 3, 4, 5, 6)
- * Programmable CPU clock (divided by 1, 2, 3, 4)
- * Support 256KB/512KB/1MB EPROMs with single or double EPROM BIOS configura-



UMC

UM82C480
386/486 PC Chip Set



SYSTEM BLOCK DIAGRAM FOR UM82C480 386/486 PC/AT CHIPSET



III Required IC List for 64KB cache systems

<u>PART NO.</u>	<u>DESCRIPTIONS</u>	<u>80386-33</u>	<u>80486-33</u>
UM82C481	IMC	1	1
UM82C482	ISC	1	1
UM82C206	IPC	1	1
UM6164K-25L	8K X 8-25 SRAM	8	8
UM61416K-20L	16K X 4-20 SRAM	4	4
27512	BIOS EPROM	1	1
8742	KEYBOARD CONTROLLER	1	1
74F244	TTL	6	6
74F245	TTL	7	7
74F373	TTL	2	2
74ALS245	TTL	4	4
74ALS373	TTL	1	1
74F74	TTL	3	2
74F04	TTL	1	1
74ALS00	TTL	0	1
7406	TTL	1	1
74F32	TTL	1	1
14069A	TTL	1	1
16R6	PAL	0	1
80386-33	CPU	1	0
80486-33	CPU	0	1



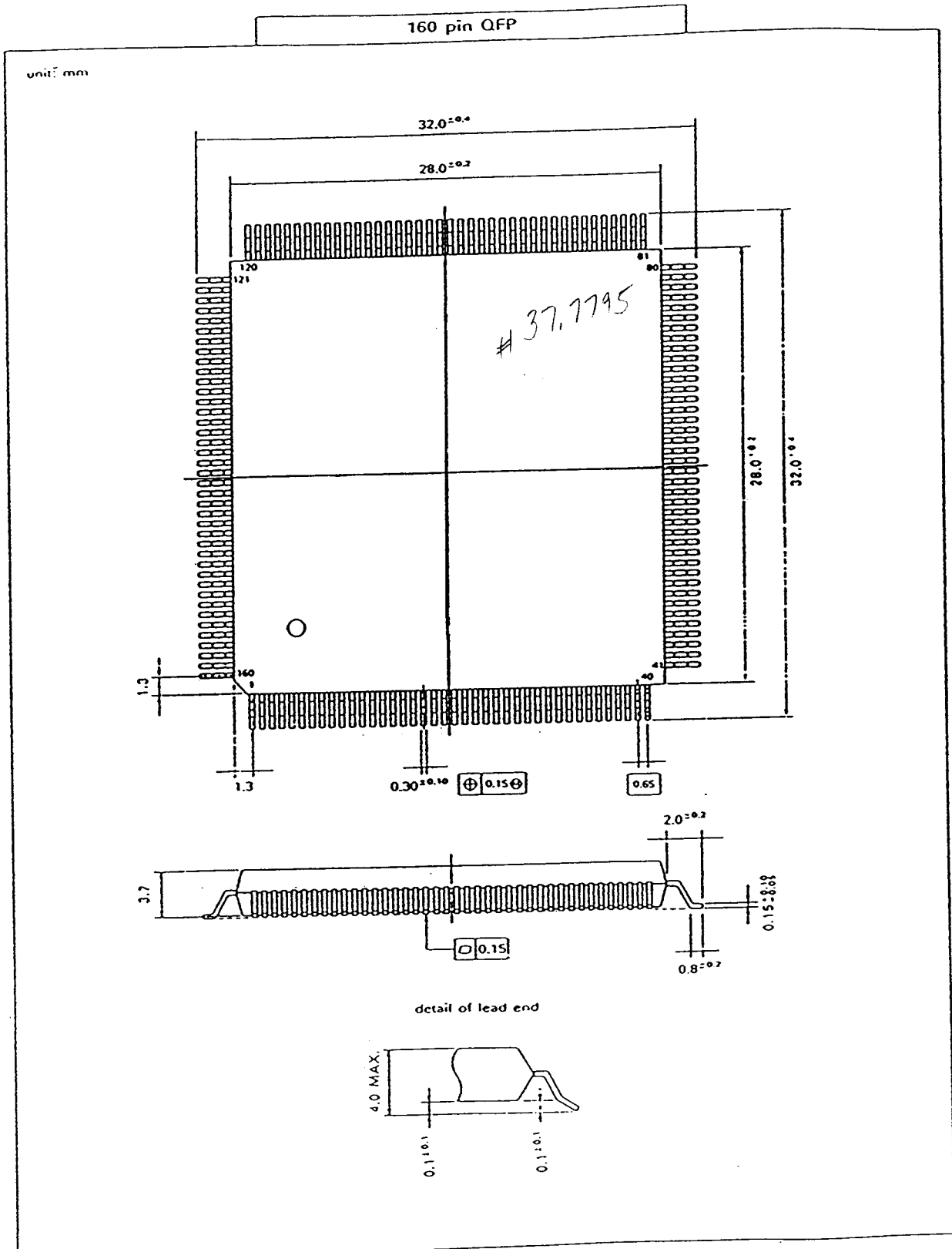
IV CHIP SET PERFORMANCE

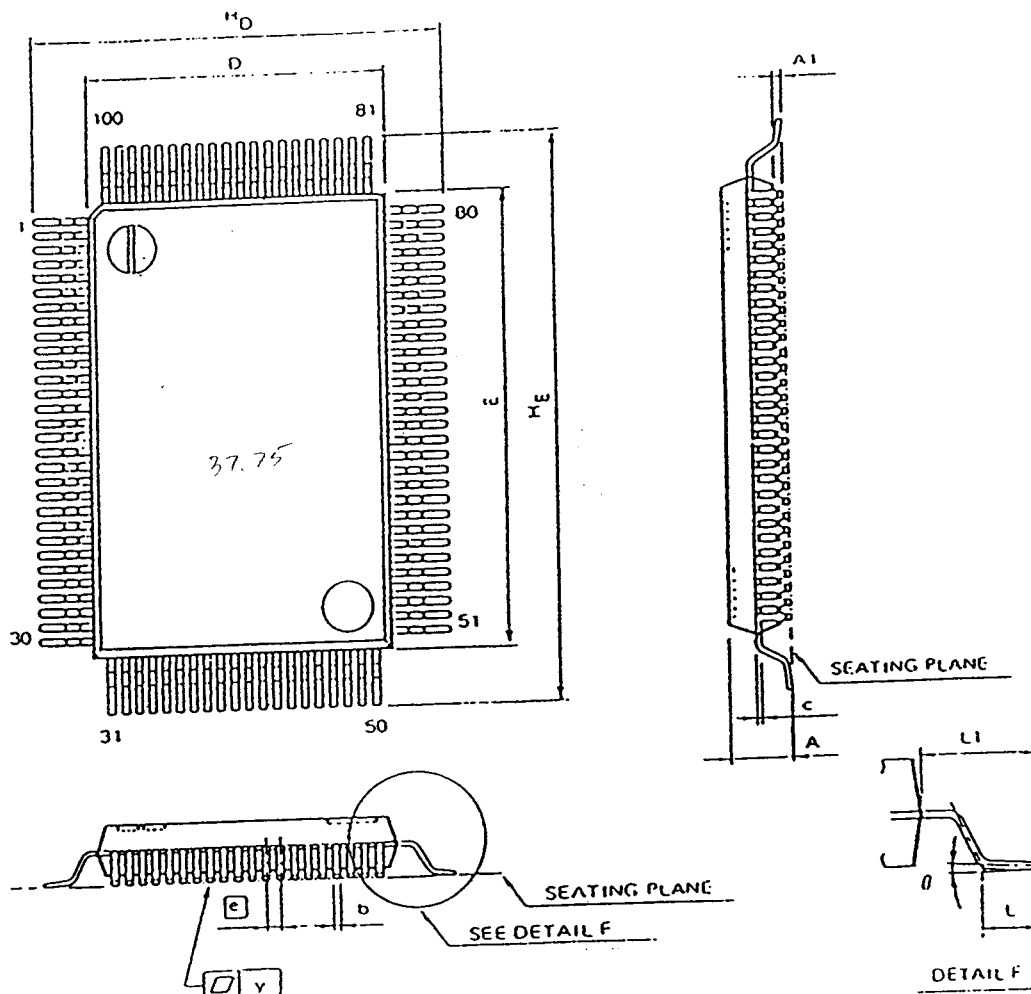
<u>Mode</u>	<u>Landmark (V 1.14)</u>	<u>Power Meter (V 1.5)</u>
386-25	41.0 MHz	6.246 MIPS
386-33	54.3 MHz	8.240 MIPS
386-40**	65.7 MHz	9.842 MIPS
486-25	114.1 MHz	11.232 MIPS
486-33	150.7 MHz	14.849 MIPS
486-40**	182.3 MHz	17.961 MIPS
486-50**	230.0 MHz*	22.399 MIPS

* Estimated value, performance over Landmark measure scale.

** Using 33MHz CPU

PACKAGE INFORMATION (UM82C481 / UM82C482)



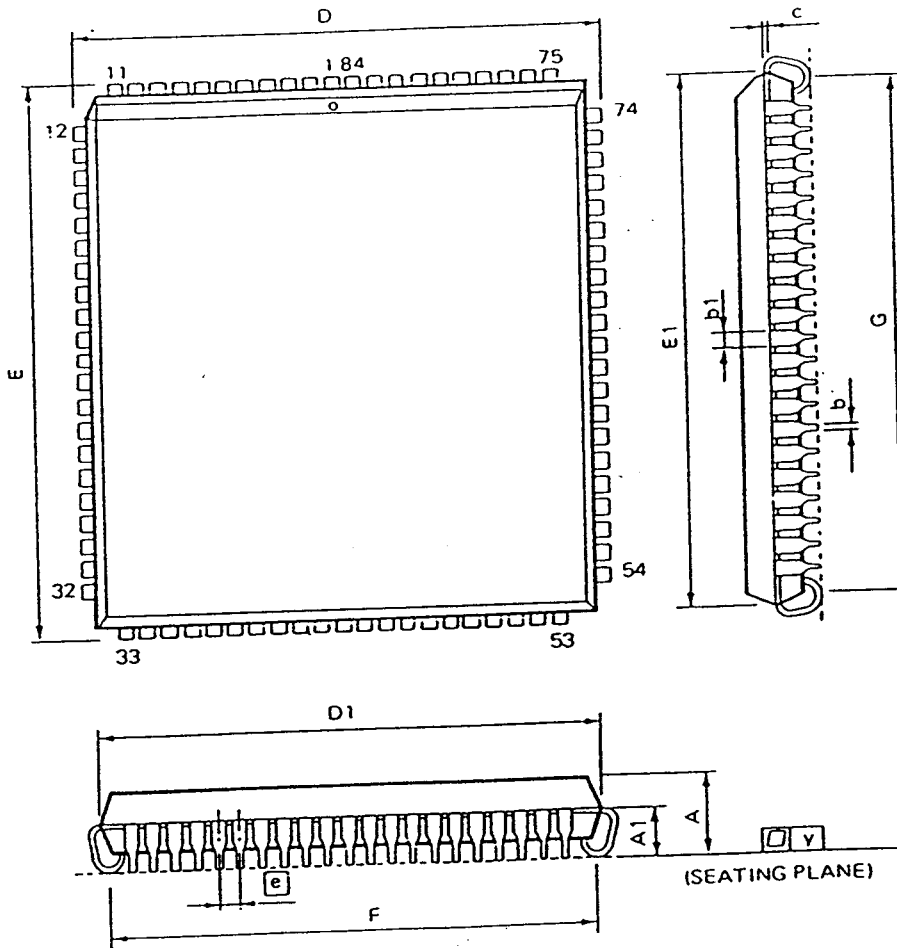
PACKAGE INFORMATION (UM82C206)
QFP 100L Outline Dimension


Symbol	Dimensions in inch	Dimensions in mm
A	0.120 ± 0.010	3.048 ± 0.254
A1	0.008 ± 0.004	0.203 ± 0.102
b	$0.012 \begin{matrix} + 0.004 \\ - 0.002 \end{matrix}$	$0.305 \begin{matrix} + 0.102 \\ - 0.051 \end{matrix}$
c	$0.006 \begin{matrix} + 0.004 \\ - 0.002 \end{matrix}$	$0.152 \begin{matrix} + 0.102 \\ - 0.051 \end{matrix}$
D	$0.551 (0.576 \text{ Max.})$	$14.000 (14.630 \text{ Max.})$
E	$0.787 (0.812 \text{ Max.})$	$20.000 (20.625 \text{ Max.})$
$[e]$	0.026 ± 0.006	0.650 ± 0.152
H_D	0.740 ± 0.012	18.796 ± 0.305
H_E	0.976 ± 0.012	24.790 ± 0.305
L	0.047 ± 0.012	1.194 ± 0.305
L_1	0.095 ± 0.012	2.413 ± 0.305
y	0.006 Max.	0.152 Max.
θ	$0^\circ \sim 8^\circ$	$0^\circ \sim 5^\circ$



PACKAGE INFORMATION (UM82C206)

PLCC 84L Outline Dimension



Symbol	Dimensions in inch	Dimensions in mm
A	0.170 ± 0.008	4.318 ± 0.203
A1	0.100 ± 0.008	2.540 ± 0.203
b	0.018 ^{+ 0.004} - 0.002	0.457 ^{+ 0.102} - 0.051
b1	0.028 ^{+ 0.004} - 0.002	0.711 ^{+ 0.102} - 0.051
c	0.008 ^{+ 0.004} - 0.002	0.203 ^{+ 0.102} - 0.051
D	1.190 ± 0.005	30.226 ± 0.127
D1	1.153 (1.185 Max.)	29.286 (30.099 Max.)
e	0.050 ± 0.006	1.270 ± 0.152
E	1.190 ± 0.005	30.226 ± 0.127
E1	1.163 (1.185 Max.)	29.286 (30.099 Max.)
F	1.117 ± 0.020	28.372 ± 0.508
G	1.117 ± 0.020	28.372 ± 0.508
y	0.006 Max.	0.152 Max.