

PICAXE MEMORY MAPPING

RAM (**SFR**), Scratchpad, Data EEPROM, and Table Memory are all separate. Data EEPROM is additional to program space (but shared on some smaller/earlier PICAXE chips).
FOR **SFR**'s for the M2 and X2 parts, see separate SFR tables

Colour Code:

Available to all users
Available to X1, X2 and M2 X2 parts
Available to X2 parts only

Special Function Registers
Variables and Firmware Use
Available to M2 parts only

Applies to **ALL BUT** the X1 and X2 devices
Applies to the X1 devices only
Applies to 18A, 18X, X1, X2 and M2 parts

Not Available or Alternative on noted PICAXE
Inaccessible (eg SFR's above 255 / \$FF)

VARIABLES (Commands: LET =)

W0	B0
Bit 15	Bit 0
Bit 14	Bit 13
Bit 12	Bit 11
Bit 10	Bit 9
Bit 8	Bit 7
Bit 6	Bit 5
Bit 4	Bit 3
Bit 2	Bit 1
Bit 0	

W1	B2
Bit 31	Bit 20
Bit 30	Bit 19
Bit 29	Bit 18
Bit 28	Bit 17
Bit 27	Bit 16
Bit 26	
Bit 25	
Bit 24	
Bit 23	
Bit 22	
Bit 21	
Bit 20	
Bit 19	
Bit 18	
Bit 17	
Bit 16	

W2	B4
B5	

W3	B6
B7	

W4	B8
B9	

W5	B10
B11	

W6	B12
B13	

W7	B14
B15	

W8	B16
B17	

W9	B18
B19	

W10	B20
B21	

W11	B22
B23	

W12	B24
B25	

W13	B26
B27	

B29 (W14)	B28
B31 (W15)	B30
B33 (W16)	B32
B35 (W17)	B34
B37 (W18)	B36
B39 (W19)	B38
B41 (W20)	B40
B43 (W21)	B42
B45 (W22)	B44
B47 (W23)	B46
B49 (W24)	B48
B51 (W25)	B50
B53 (W26)	B52
B55 (W27)	B54

BASIC ASSESSIBLE RAM / SPECIAL FUNCTION REGISTERS (SFR's) - Commands: POKE & PEEK TO ACCESS SFR's & RAM
See Separate tables for the SFR addressing/functions for the M2 and X2 parts (Commands: POKESRF & PEEKSFR)

00	Indirect Add	64	128	Indirect Add	192
01	TMR0	65	129	OPTION_REG	193
02	PLC	66	130	PCL	194
03	STATUS	67	131	STATUS	195
04	FSR	68	132	FSR	196
05	PORTA	69	133	TRISA	197
06	PORTB	70	134	TRISB	198
07	PORTC	71	135	TRISC	199
08	PORTD	72	136	TRISD	200
09	PORTE	73	137	TRISE	201
10	PCLATH	74	138	PCLATH	202
11	INTCON	75	139	INTCON	203
12	PIR1	76	140	PIE1	204
13	PIR2	77	141	PIE2	205
14	TMR1L	78	142	PCON	206
15	TMR1H	79	143	OSCCON	207
16	T1CON	80	144	OSCTUNE	208
17	TMR2	81	145	SSPCON2	209
18	T2CON	82	146	PR2	210
19	SSPBUF	83	147	SSPADD	211
20	SSPCON	84	148	SSPSTAT	212
21	CCPR1L	85	149	WPUB	213
22	CCPR1H	86	150	IOCB	214
23	CCP1CON	87	151	VRCON	215
24	RCSTA	88	152	TXSTA	216
25	TXREG	89	153	SPBRG	217
26	RCREG	90	154	SPBRGH	218
27	CCPR2L	91	155	PWM1CON	219
28	CCPR2H	92	156	ECCPAS	220
29	CCP2CON	93	157	PSTRCON	221
30	ADRESH	94	158	ADRESL	222
31	ADCON0	95	159	ADCON1	223
32		96	160		224
33		97	161		225
34	Var b0	98	162		226
35	Var b1	99	163		227
36	Var b4	100	164		228
37	Var b5	101	165		229
38	Var b8	102	166		230
39	Var b9	103	167		231
40	Var b12	104	168		232
41	Var b13	105	169		233
42	Var b16	106	170		234
43	Var b17	107	171		235
44	Var b20	108	172		236
45	Var b21	109	173		237
46	Var b24	110	174		238
47	Var b25	111	175		239
48		112	176		240
49		113	177		241
50	Var b0	114	178		242
51	Var b1	115	179		243
52	Var b2	116	180		244
53	Var b3	117	181		245
54	Var b4	118	182		246
55	Var b5	119	183		247
56	Var b6	120	184		248
57	Var b7	121	185		249
58	Var b8	122	186		250
59	Var b9	123	187		251
60	Var b10	124	188		252
61	Var b11	125	189		253
62	Var b12	126	190		254
63	Var b13	127	191		255

Banks 0 & 1 RAM or Special Function Registers (for 08, 08M, 14M, 18X, 20M, 28X1 & 40X1)
1) Hardware Control Registers (\$00-\$1F, \$80-\$9F)
2) Firmware RAM (\$20-\$4F, \$A0-\$BF)
3) User RAM (\$50-\$7F, \$C0-\$FF)
4) Inaccessible **SFR** (\$100 and above)
5) For the X1 devices, half of the variables are in the SFR bank 0 which can be accessed by PICAXE BASIC.
The remainder are in higher SRF banks (3?) located above the 255/\$FF range for BASIC command access.
6) On X2 parts there is a separate 256 RAM area for variables - b0-b47 at the addresses 0-47, so the same as peek/poke 0-47, with the remaining 216 bytes only accessed by peek/poke (48-255)
7) For exclusions/alternates **18X/20M** EEDATA on 08 EEDAT on 08M/14M means the register is not implimented on 18X/20M, is register named EEDATA of 08, and is register named EEDAT on 08M and 14M

SCRATCHPAD

(Commands: PUT & GET, ptr and @ptr)
(total of 128 bytes for 20X2 and all non-X2 parts, total of 1024 bytes for other X2 parts)

All X1 / X2 parts	X2 Only (but not 20X2)
0	128
1	129
2	130
3	131
4	132
5	133
6	134
7	135
8	136
9	137
10	138
11	139
12	140
13	141
14	142
15	143
16	144
17	145
18	146
19	147
20	148
21	149
22	150
23	151
24	152
25	153
26	154
27	155
28	156
29	157
30	158
31	159
32	160
33	161
34	162
35	163
36	164
37	165
38	166
39	167
40	168
41	169
42	170
43	171
44	172
45	173
46	174
47	175
48	176
49	177
50	178
51	179
52	180
53	181
54	182
55	183
56	184
57	185
58	186
59	187
60	188
61	189
62	190
63	191
64	192
65	193
66	194
67	195
68	196
69	197
70	198
71	199
72	200
73	201
74	202
75	203
76	204
77	205
78	206
79	207
80	208
81	209
82	210
83	211
84	212
85	213
86	214
87	215
88	216
89	217
90	218
91	219
92	220
93	221
94	222
95	223
96	224
97	225
98	226
99	227
100	228
101	229
102	230
103	231
104	232
105	233
106	234
107	235
108	236
109	237
110	238
111	239
112	240
113	241
114	242
115	243
116	244
117	245
118	246
119	247
120	248
121	249
122	250
123	251
124	252
125	253
126	254
127	255

EEPROM (Cmds: WRITE & READ)

(Part of Prog Space in the 08 / 18 all 'M' parts, 08M2 & 18M2 parts)

0	128
1	129
2	130
3	131
4	132
5	133
6	134
7	135
8	136
9	137
10	138
11	139
12	140
13	141
14	142
15	143
16	144
17	145
18	146
19	147
20	148
21	149
22	150
23	151
24	152
25	153
26	154
27	155
28	156
29	157
30	158
31	159
32	160
33	161
34	162
35	163
36	164
37	165
38	166
39	167
40	168
41	169
42	170
43	171
44	172
45	173
46	174
47	175
48	176
49	177
50	178
51	179
52	180
53	181
54	182
55	183
56	184
57	185
58	186
59	187
60	188
61	189
62	190
63	191
64	192
65	193
66	194
67	195
68	196
69	197
70	198
71	199
72	200
73	201
74	202
75	203
76	204
77	205
78	206
79	207
80	208
81	209
82	210
83	211
84	212
85	213
86	214
87	215
88	216
89	217
90	218
91	219
92	220
93	221
94	222
95	223
96	224
97	225
98	226
99	227
100	228
101	229
102	230
103	231
104	232
105	233
106	234
107	235
108	236
109	237
110	238
111	239
112	240
113	241
114	242
115	243
116	244
117	245
118	246
119	247
120	248
121	249
122	250
123	251
124	252
125	253
126	254
127	255

TABLE MEMORY

(Part of Prog Space in the 08 / 18 all 'M' parts, 08M2 & 18M2 parts)

	X1, X2 & M2 Only		M2 Parts Only
0	128	256	384
1	129	257	385
2	130	258	386
3	131	259	387
4	132	260	388
5	133	261	389
6	134	262	390
7	135	263	391
8	136	264	392
9	137	265	393
10	138	266	394
11	139	267	395
12	140	268	396
13	141	269	397
14	142	270	398
15	143	271	399
16	144	272	400
17	145	273	401
18	146	274	402
19	147	275	403
20	148	276	404
21	149	277	405
22	150	278	406
23	151	279	407
24	152	280	408
25	153	281	409
26	154	282	410
27	155	283	411
28	156	284	412
29	157	285	413
30	158	286	414
31	159	287	415
32	160	288	416
33	161	289	417
34	162	290	418
35	163	291	419
36	164	292	420
37	165	293	421
38	166	294	422
39	167	295	423
40	168	296	424
41	169	297	425
42	170	298	426
43	171	299	427
44	172	300	428
45	173	301	429
46	174	302	430
47	175	303	431
48	176	304	432
49	177	305	433
50	178	306	434
51	179	307	435
52	180	308	436
53	181	309	437
54	182	310	438
55	183	311	439
56	184	312	440
57	185	313	441
58	186	314	442
59	187	315	443
60	188	316	444
61	189	317	445
62	190	318	446
63	191	319	447
64	192	320	448
65	193	321	449
66	194	322	450
67	195	323	451
68	196	324	452
69	197	325	453
70	198	326	454
71	199	327	455
72	200	328	456
73	201	329	457
74	202	330	458
75	203	331	459
76	204	332	460
77	205	333	461
78	206	334	462
79	207	335	463
80	208	336	464
81	209	337	465
82	210	338	466
83	211	339	467
84	212	340	468
85	213	341	469
86	214	342	470
87	215	343	471
88	216	344	472
89	217	345	473
90	218	346	474
91	219	347	475
92	220	348	476
93	221	349	477
94	222	350	478
95	223	351	479
96	224	352	480
97	225	353	481
98	226	354	482
99	227	355	483
100	228	356	484
101	229	357	485
102	230	358	486
103	231	359	487
104	232	360	488
105	233	361	489
106	234	362	490
107	235	363	491
108	236	364	492
109	237	365	493
110	238	366	494
111	239	367	495
112	240	368	496
113	241	369	497
114	242	370	498
115	243	371	499
116	244	372	500
117	245	373	501
118	246	374	502
119	247	375	503
120	248	376	504
121	249	377	505
122	250	378	506
123	251	379	507
124	252	380	508
125	253	381	509
126	254	382	510
127	255	383	511