



MAGNET
Motorola Applications Global Network

WAP Developer Style Guide
Device Supplement
for A008

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I. OVERVIEW

This Supplement is part of a suite of documentation and services available to application developers through Motorola's Global Applications Network (MAGNET), a community of developers with access to the resources needed to create wireless solutions for Motorola products. Should you wish to contact MAGNET or its Regional Centres, please visit us at <http://www.motorola.com/developers>.

This document is intended for developers wishing to produce wireless applications that make the best possible use of the features of the appropriate Motorola device and **microbrowser**, while being aware of the limitations of other devices that may access their application.

Where abbreviations or technical terms are referenced in the Glossary, this is shown by their first occurrence being in a **serif bold** font.

Omitted elements, such as non-relevant lines in examples, are indicated by ellipses, thus:

This supplement is to be read in conjunction with MAGN TS001, the WAP Developer Style Guide, which contains detailed advice for developers wishing to produce applications that operate well in Motorola devices.

II. A008 DETAIL



DEVICE FEATURES

- GSM 900 / 1800
- GPRS
- Soft Modem (CSD & GPRS)
- Fax
- SMS
- IrDA, Serial connections
- J2ME MIDP 1.0
- Touch Screen
- Handwriting Recognition
- On-screen keyboard
- Voice Note Recording
- TrueSync synchronisation of calendar and contacts with PC contact management software
- E-mail client for 5 user profiles
- Ring tone editor
- Ring tone transfer via SMS or IrDA
- Calendar
- To Do List
- Alarm Clock
- World Clock
- Dual Time Zone
- Calculator
- Currency Exchange Rate Calculator
- Games

TECHNICAL SPECIFICATIONS

NB: these specifications reflect the result of testing with currently available gateways, and therefore may not always be identical with a device's theoretical capabilities.

GENERAL	
Maker	Motorola
Model	A008
Markets	Europe, Middle East, Africa
Networks	GSM 900/1800, GPRS
Languages Supported (individual devices will be configured with a selection appropriate to the local market)	Language pack 1: English/French/Spanish/German/Italian/Swedish Language pack 2: English/Danish/Finnish/Dutch/Norwegian Language pack 3: English/Turkish/German/Czech/Polish/Hungarian
Bearer s	CSD, SMS, GPRS 1 up 3 down
OTA configuration by SMS	Supports Openwave OTA provisioning
OTA bookmarks by SMS	No
Disconnect time if no traffic	Configurable 0-60 min.

BROWSER	
Maker	Openwave
Version	UP Browser 4.1
No. of softbuttons displayed	4 (Right = "Accept", centre-right = browser menu, centre-left = "Back", left = "Options"). Input field delete provided by key in onscreen keypad during data input.
Max. softbutton label size (chars.)	6
Unsupported Tags	 <big> <small> <i> <u> <optgroup>
Text/Links/Input/Images on same line?	OK. NB: elements following an input field will not be displayed until input field has been accepted.
Horizontal text scrolling	"Times Square"
Horizontal graphics scrolling	Not supported
Vertical graphics scrolling	Not supported
Horizontal Alignment support	Paragraph alignment – left (default), centre, right.
Table support	Yes
Wrapping Modes	<wrap> <nowrap>
Cache Size	64KB persistent cache
Cache-control commands supported	no-cache; must-revalidate; max-age=
Default cache expiry period	30 days

IMAGE INFO	
Image Alignment	Paragraph alignment
Image Formats	WBMP
Image as link	No
Max. Image Size (bytes)	4.95KB approx.
Max. Graphics Display Area	236 pixels high x 218 pixels wide
Max. graphic width loadable	220 pixels
Max. graphic height loadable	208 pixels
Colour/B&W Specification	4 level greyscale (only B&W possible in WAP)

SCREEN INFO	
Width in pixels	240
Height in pixels	320
Content Area in pixels (w/h)	240/236
Characters per row ("I"/"W")	18/18
Rows of Data (Western)	8
Columns of Data (Western)	18
Rows of Data (Chinese)	8
Columns of Data (Chinese)	8
Touch Screen?	Yes

DEVICE INFO	
Max. Deck Size	Approx. 5000 bytes. Browser display limit is approximately first 3,800 characters of text in file.
RAM Size	8MB
Load Sequence (Data vs. Image)	Data then Image
Max. URL Length	Not less than 248 characters
HTTP Authentication?	Basic
Max. no. of connection settings	5
Max. length of username	None known
Max. length of password	None known

TABLE INFO	
Table Support?	Yes
Table Border Support?	No
Default Cell Padding positions	Left and top
Cell Alignment types supported	Left (default) only

FONT INFO	
Font Name	N/A
Font Size Names	N/A
Font Height	N/A
Monospace/Proportional	Monospace, 15x16
WML Special Char. Restrictions	Soft hyphen is always displayed

STANDARDS & FUNCTIONALITY	
WAP version	1.1
WML version	1.1
WMLScript version	1.1
Icon Buttons	No
WTAI Make Call support	With WAP suspend and resume
HTTP_USER_AGENT response	MOT-F6/10.36.32 UP.Browser/4.1.23d
Device Identifier in USER_AGENT	MOT-F6
HTTP_ACCEPT response	Application/vnd.wap.wmlc; Type=1108,application/vnd.wap.wmlc, application/vnd.wap.wmlscriptc, image/vnd.wap.wbmp;Type=0, text/vnd.wap.wml,text/vnd.wap.wmlscript
HTTP_ACCEPT_LANGUAGE response	en
HTTP_ACCEPT_CHARSET response	utf-8
ANIMATION SUPPORT	No
MENU TIMER SUPPORT	No
PUSH support	No
POST support	Yes
POST data has trailing null?	No
Max. no. of bookmarks	10
Cookies	Only with UP.Link Gateway

APPLICATION INTERFACE	
Operating System	PPSM
OS Multitasking/Multithreaded?	Non-realtime multitasking. Full multithreading.
API Languages	J2ME MIDP 1.0
SDKs for Languages	Metroworks Code Warrior for J2ME, Motorola Mobile ADK for WAP.
Total available RAM	8Mb
RAM for 3rd-party apps	1.6Mb
CPU type	Dual: Dragon Ball VZ and White Cap
CPU speed (MHz)	33
Processor MIPS value	~5
CPU time taken to receive streaming data	N/A

SECURITY	
Security type (WTLS / proprietary)	WTLS
Encryption level (bits)	128-bit
Security Class 1, 2 or 3	Class 1

OTHER INFO	
Input Field underline/bracket	No
Input Types supported	Text, password
Resolution when selecting	Line
Sound Output methods	Earpiece, headset
Other Features	Soft Modem (CSD & GPRS)

SYMBOL TABLE TESTS											
No.	Symbol	Result	No.	Symbol	Result	No.	Symbol	Result	No.	Symbol	Result
32		blank	94	^	ok	156	œ	blank	218	Ù	ok
33	!	ok	95	˘	ok	157		blank	219	Û	ok
34	"	ok	96	˙	ok	158	ž	blank	220	Ü	ok
35	#	ok	97	a	ok	159	Ÿ	blank	221	Ý	ok
36*	\$	ok	98	b	ok	160		blank	222	Ɔ	ok
37	%	ok	99	c	ok	161	ı	ok	223	ß	ok
38	&	ok	100	d	ok	162	ç	ok	224	à	ok
39	'	ok	101	e	ok	163	£	ok	225	á	ok
40	(	ok	102	f	ok	164	¤	ok	226	â	ok
41	)	ok	103	g	ok	165	¥	ok	227	ã	ok
42	*	ok	104	h	ok	166	ı	ok	228	ä	ok
43	+	ok	105	i	ok	167	§	ok	229	å	ok
44	,	ok	106	j	ok	168	¨	ok	230	æ	ok
45	-	ok	107	k	ok	169	©	ok	231	ç	ok
46	.	ok	108	l	ok	170	ª	ok	232	è	ok
47	/	ok	109	m	ok	171	«	ok	233	é	ok
48	0	ok	110	n	ok	172	¬	ok	234	ê	ok
49	1	ok	111	o	ok	173		dash	235	ë	ok
50	2	ok	112	p	ok	174	®	ok	236	ì	ok
51	3	ok	113	q	ok	175	¯	overscore	237	í	ok
52	4	ok	114	r	ok	176	°	ok	238	î	ok
53	5	ok	115	s	ok	177	±	ok	239	ï	ok
54	6	ok	116	t	ok	178	²	ok	240	ð	ok
55	7	ok	117	u	ok	179	³	ok	241	ñ	ok
56	8	ok	118	v	ok	180	´	ok	242	ò	ok
57	9	ok	119	w	ok	181	µ	ok	243	ó	ok
58	:	ok	120	x	ok	182	¶	ok	244	ô	ok
59	;	ok	121	y	ok	183	·	ok	245	õ	ok
60	<	ok	122	z	ok	184	,	ok	246	ö	ok
61	=	ok	123	{	ok	185	ˆ	ok	247	÷	ok
62	>	ok	124	|	ok	186	°	ok	248	ø	ok
63	?	ok	125	}	ok	187	»	ok	249	ù	ok
64	@	ok	126	~	ok	188	¼	ok	250	ú	ok
65	A	ok	127		blank	189	½	ok	251	û	ok
66	B	ok	128	€	blank	190	¾	ok	252	ü	ok
67	C	ok	129		blank	191	¿	ok	253	ý	ok
68	D	ok	130	,	blank	192	À	ok	254	þ	ok
69	E	ok	131	f	blank	193	Á	ok	255	ÿ	ok
70	F	ok	132	"	blank	194	Â	ok	256		"?"
71	G	ok	133	...	blank	195	Ã	ok	511		"?"
72	H	ok	134	†	blank	196	Ä	ok	512		"?"
73	I	ok	135	‡	blank	197	Å	ok	513		"?"
74	J	ok	136	ˆ	blank	198	Æ	ok			
75	K	ok	137	‰	blank	199	Ç	ok			
76	L	ok	138	Š	blank	200	È	ok			
77	M	ok	139	‹	blank	201	É	ok			
78	N	ok	140	Œ	blank	202	Ê	ok			
79	O	ok	141		blank	203	Ë	ok			
80	P	ok	142	Ž	blank	204	Ì	ok			
81	Q	ok	143		blank	205	Í	ok			
82	R	ok	144		blank	206	Î	ok			
83	S	ok	145	˘	blank	207	Ï	ok			
84	T	ok	146	˙	blank	208	Ð	ok			
85	U	ok	147	˚	blank	209	Ñ	ok			
86	V	ok	148	¨	blank	210	Ò	ok			
87	W	ok	149	•	blank	211	Ó	ok			
88	X	ok	150	—	blank	212	Ô	ok			
89	Y	ok	151	—	blank	213	Õ	ok			
90	Z	ok	152	~	blank	214	Ö	ok			
91	[	ok	153	™	blank	215	×	ok			
92	\	ok	154	§	blank	216	Ø	ok			
93	]	ok	155	›	blank	217	Ù	ok			

NB: 256, 511-513 should not generate characters. They are included only as a boundary check.

* must be input twice $$ for valid \$ character.

CHARACTER SET

This device can input the following characters from its onscreen keyboard when connected to a typical European English-language network:

1 2 3 4 5 6 7 8 9 0 @
 q w e r t y u i o P
 a s d f g h j k l
 z x c v b n m ; space

% ¥ \$ ¢ £ ¤ € ª ° « »
 { } [] _ | ` ~ # & *
 ^ - + = < > / \ ¡ ¢ @
 () ‘ “ ; : ? ! , .

à á â ã ä å æ ç é ě
 d' è é ê ë ę ě ğ ì í î
 į ł ł đ ñ ñ ñ ò ó ô õ
 ö ø ő ř ś ş š ŧ ù ú û
 ü ů ů ý þ ž ž ž

Characters are shown grouped in the three onscreen layouts available, and a shift key is used to give access to uppercase versions of characters where appropriate.


























ICON SET


























The UP.Browser V4.1 comes with a predefined set of icons that can be locally referenced by a WML V1.1 application using the *localsrc* attribute of the element (The *alt* attribute is still required). Icons can be referenced either by name or by number.








The following table provides a chart for these and also lists the icon identifiers (*localsrc*) that can be referenced from a WML application. Note that the *Icon Names* in the chart are for convenience only and are not valid identifiers.


























Icon #	Icon	Icon name	Localsrc
1	!	Exclamation Point	Exclamation1
2	!	Exclamation Point	Exclamation2
3	?	Question Mark 1	question1
4	?	Question Mark 2	question2
5	◀	Left Triangle 1	leftri1
6	▶	Right Triangle 1	rightri1
7	◀	Left Triangle 2	leftri2
8	▶	Right Triangle 2	rightri2
9	◻	Square 1 (4 x 4)	littlesquare1
10	◻	Square 2 (4 x 4)	littlesquare2
11	ℹ	Information	isymbol
12	🍷	Wine Glass	wineglass
13	🔊	Speaker	speaker
14	💰	Dollar Sign	dollarsign
15	🌙	Crescent Moon	moon1
16	⚡	Lightning Bolt	bolt
17	◻	Square 3 (5 x 5)	medsquare1
18	◻	Square 4 (5 x 5)	medsquare2


























19	◊	Diamond 1 (5 x 5)	littlediamond1
20	◊	Diamond 2 (5 x 5)	littlediamond2
21	◻	Square 5 (6 x 6)	bigsquare1
22	◻	Square 6 (6 x 6)	bigsquare2
23	●	Circle 1 (7 x 7)	littlecircle1
24	●	Circle 2 (7 x 7)	littlecircle2
25	🕒	Wrist Watch	wristwatch
26	+	Add	plus
27	-	Subtract	minus
28	*	Asterisk	star1
29	↑	Arrow up 1	uparrow1
30	↓	Arrow down 1	downarrow1
31	⊘	Circle with slash	circleslash
32	▼	Down Triangle 1	downtri1
33	▲	Up Triangle 1	uptri1
34	▼	Down Triangle 2	downtri2
35	▲	Up Triangle 2	uptri2
36	◊	Diamond 3 (7 x 7)	bigdiamond1
37	◊	Diamond 4 (7 x 7)	bigdiamond2











38		Square 7 (7 x 7)	biggestsquare1
39		Square 8 (7 x 7)	biggestsquare2
40		Circle 3 (8 x 8)	bigcircle1
41		Circle 4 (8 x 8)	bigcircle2
42		Arrow up 2	uparrow2
43		Arrow down 2	downarrow2
44		Sun	sun
45		Baseball	baseball
45		Clock	clock
47		Cartoon Moon	moon2
48		Bell	bell
49		Push Pin	pushpin
50		Woman's Face	smallface
51		Heart	heart
52		Martini	martini
53		Bud	bud
54		Trademark	trademark
55		Multiply	multiply
56		Document	document1
57		Hourglass 1	hourglass1
58		Hourglass 2	hourglass2
59		Floppy Disk	floppy1
60		Snowflake	snowflake
61		Ex 1	cross1
62		Ex 2	cross2

63		Right Arrow 1	rightarrow1
64		Left Arrow 1	leftarrow1
65		Mug	mug
66		Divide	divide
67		Calendar	calendar
68		Smiley Face	smileyface
69		Star	star2
70		Right Arrow 2	rightarrow2
71		Left Arrow 2	leftarrow2
72		Gem	gem
73		Checkmark 1	checkmark1
74		Poodle	dog
75		Star 2	star3
76		Sparkle	sparkle
77		Light Bulb	lightbulb
78		Bird	bird
79		Closed File	folder1
80		Man's Face	head1
81		Copyright	copyright
82		Registered	registered
83		Briefcase	briefcase
84		Open Folder	folder2
85		Push Button Phone	phone1
86		Dialog Box	voiceballoon
87		Credit Card	creditcard

88		Up Triangle 3	uptri3
89		Down Triangle 3	downtri3
90		USA	usa
91		Note Pad	note3
92		Clipboard	clipboard
93		Cup	cup
94		Camera	Camera1
95		Rain	rain
96		Football	football
97		Book 1	book1
98		Do-not-enter	stopsign
99		Traffic Sign	trafficlight
100		Book 2	book2
101		Book 3	book3
102		Book 4	book4
103		Document 2	document2
104		Scissors	scissors
105		Day Calendar	day
106		Ticket	ticket
107		Cloudy	cloud
108		Envelope 1	envelope1
109		Check	check
110		Movie Camera	videocam
111		Camcorder	camcorder
112		House	house

113		Flower	flower
114		Exacto Knife	knife
115		Video Tape	vidtape
116		Eye Glasses	glasses
117		Right Arrow 3	roundarrow1
118		Left Arrow 3	roundarrow2
119		Magnify	magnifyglass
120		Key	key
121		Book 5	note1
122		Book 6	note2
123		Bolt & Nut	boltnut
124		Shoe	shoe
125		Car	car
126		Floppy Disk 2	floppy2
127		Chart1	chart
128		Graph 1	graph1
129		Mailbox	mailbox
130		Flashlight	flashlight
131		Rolodex	rolocard
132		Checkmark 2	check2
133		Leaf	leaf
134		Hound	hound
135		Battery	battery
136		Scroll	scroll
137		Thumb Tack	thumbtack

138		Lock & Key	lockkey
139		Dollar	dollar
140		Point Left	lefthand
141		Point Right	righthand
142		Book 7	tablet
143		Paper Clip	paperclip
144		Gift	present
145		Tag	tag
146		Meal 1	meal1
147		Books	books
148		Truck	truck
149		Pencil	pencil
150		Logo	uplogo
151		Envelope 2	envelope2
152		Wrench	wrench
153		Out Box	outbox
154		In Box	inbox
155		Cellular Phone	phone2
156		Factory	factory
157		Ruler 1	ruler1
158		Ruler 2	ruler2
159		Graph 2	graph2
160		Meal 2	meal2
161		Phone Handset	phone3
162		Plug	plug

163		Family	family
164		Link	link
165		Package	package
166		Fax	fax
167		Partly Cloudy	partcloudy
168		Airplane	plane
169		Boat	boat
170		Dice	dice
171		Newspaper	newspaper
172		Train	train
173		Blank Full	blankfull
174		Blank Half	blankhalf
175		Blank Quarter	blankquarter

III. GLOSSARY

Browser	A client program with a user interface, making data available to a user and incorporating functionality for acting upon embedded tags within a document.
Microbrowser	Client software for displaying Internet data, designed for the resource limitations of mobile devices.
SMS	Short Messaging Service – a facility for two-way transmission of messages up to 160 characters in length between a mobile phone and its parent network.
Softkey	A client device button or other physical control, whose function can be controlled by instructions downloaded to or executed upon the device.
WAP	Wireless Application Protocol. A standard for the specification of content and user interface presented to bandwidth-limited mobile devices.
WBMP	Wireless BitMap – the standard for graphics used in WAP applications.
WML	Wireless Markup Language – a language based on XML for describing the presentation and content of documents displayed on mobile devices.
XML	eXtensible Markup Language. A core specification defining a superset from which all markup languages can be derived; a description of the structure and organisation of data rather than its content.

IV. REFERENCES

Motorola, Inc.:

MAGN TS001 WAP Developer Style Guide, November 2000.

Openwave:

UP.Browser V4.1 Icon Set, 19 June 2000.

Motorola MAGNET Web site:

<http://www.motorola.com/developers>

END OF DOCUMENT
