DIAGNOSTIC	DESCRIPTION	WBS	CHAN	SPEED	PORT	WIND SHUT	ELEC FDTH	MECH FDTH	TIV	RACK
1. Initial Operation										
magnetics	100 sensors + integrators, etc	31	100	100 kHz	12		200			3
visible cameras	3 cameras (1 fast) with filters	361	3	frm grb	3	3		3		1
1 mm interferometer	with inner wall reflector	350	2	200 kHz	1	1		1		1
2. Field Mapping										
e-beam probe	retractable, radially scanning	38	4	10 kHz	1		6	2	1	0.5
fluorescent rod probe	retractable, pivoting	38	4	10 kHz	1		2	2	1	0.5
high dynamic range CCD	standard frame rate	38	2	frm grb	1	2		2		0.5
3. Ohmic										
Thomson scattering	ultimate 60 spatial ch., 100 Hz	351	100	500 MHz	2	2		2		4
multich. FIR interf./ polarim.	# chords, □, geometry TBD	356	24	100 kHz	1	2		2		4
compact SXR arrays	3 arrays of 16 channels	341	48	200 kHz	1		48	3		1
core foil bolometer array	16 channel array	334	16	10 kHz	1		32	1		0.5
visible spectrometer	multichan., survey instrument	331	1	frm grb	1	1		1		1
abs. UV spectroscopy	vac. UV survey instrument	332	1	frm grb	1				1	1
filtered 1D CCD camera	single view	333	1	frm grb	1	1		1		0.5
visible filterscopes	several sightlines	335	6	100 khz	3	3		3		0.5
4. Initial Aux. Heating										
additional magnetics	add 50 varied sensors & integ.	31	50	100 kHz	6		100			2
diagnostic neutral beam	50 kV, 6 amps neutrals, 6 cm	352	10	10 kHz	1				1	3
MSE polarimeter	uses DNB, midplane view	353	20	10 kHz	1	1		1		2
toroidal CHERS	uses DNB, midplane view	354	2	frm grb	1	2		2		1
poloidal CHERS	uses DNB, vertical view	355	2	frm grb	2	2		2		1
enhanced x-ray tomography	additional 8 compact SXR arrays	341	128	200 kHz	3		128			2
fast tang. x-ray camera	uses unused beam port	343	1	frm grb	1			2	1	1
fast ion loss probe	geometry TBD	322	1	frm grb	1	1	10			1
neutral particle analyser	geometry TBD	321	50	50 kHz	1		?	?	1	2
epithermal neutron detector		323	1	10 kHz						0.5
high frequency Mirnov coils	6 larger TFTR style coils	342	6	5 MHz	3		12			0.5
compact IR camera	no periscope, standard speed	364	1	frm grb	2	2		2		0.5
neutral pressure gauges	midplane and banana tips	363	4	10 kHz	2		4			0.5
plate Langmuir probes	array of fixed probes	366	10	.1 ms	1		32			2
moveable Langmuir probe	moveable between shots	362	6	200 khz	1		8	2	1	1
5. Conf. and Beta Push										
divertor foil bol. arrays	2 crossed, 16 channel arrays	335	16	10 kHz	2		64	2		1
divertor filtered CCD camera	view TBD	338	1	frm grb	1	1		1		0.5
fast IR camera	needs periscope	365	1	frm grb	1	1		1		0.5
fast scanning edge probe	outer midplane, v = ?	367	6	100 kHz	1				1	2
He CHERS system	uses DNB	357	1	frm grb	1	1		1		1
divertor thermocouples	instrumented divertor tiles	368	30	1 Hz	3		64			1
divertor UV spectroscopy	dedicated divertor view	336	1	frm grb	1				1	1
fluctuation diagnostic	TBD	371	4	TBD	2	1		1		2
6. Long Pulse										
divertor Thomson scattering	100 Hz, 18 spatial ch.	369	30	500 MHz	2	2		2		3
divertor diagnostics	TBD		24	TBD	2		12			3
	total		**718**		**72**	**29**	**722**	**42**	**9**	**54**

Comments:

04APR2003: D. Johnson increased to 200 channels, but could envision eventual need for 400 channels.
info from Dave Johnson 5-1-02