

Y2k issues relating to Efl Controllers

Efl use the term 'Year 2000 Compliant' to mean that Efl has confirmed that under the conditions of Efl's internal testing, an Efl Product performs as follows:

1. The Efl Product's Job Log correctly rolls over from the year 1999 to 2000 and from 2000 to 2001.
2. The Efl Product correctly handles the leap day (February 29th) in the year 2000.

The BSI have given a definition of Year 2000 conformity requirements stating that, "Year 2000 conformity shall mean that neither performance nor functionality is affected by dates prior to, during and after the year 2000. In particular:

- Rule 1. No value for current date will cause any interruption in operation.**
Rule 2. Date-based functionality must behave consistently for dates prior to, during and after the year 2000.
Rule 3. In all interfaces and date storage, the century in any date must be specified either explicitly or by unambiguous algorithms or inferencing rules.
Rule 4. Year 2000 must be recognised as a leap year.

In an attempt to satisfy Canon's own Year 2000 compliance initiatives, Efl Products were tested to establish some correlation between the Efl definition and the BSI rules.

Term of Reference – Critical Time Frame (CTF).

This refers to a specific time interval for which correct functionality was tested.

In total, nine tests were performed, broken down into three specific tests over the three CTF's.

The 'Critical Time Frame' under test

<u>Start</u>	<u>Finish</u>
31/12/1999, 23:59:59	01/01/2000, 00:00:01
28/02/2000, 23:59:59	29/02/2000, 00:00:01
31/12/2000, 23:59:59	01/01/2001, 00:00:01

The three tests performed were:

- Device allowed to stand 'Idle' over the CTF
- Switch off before the CTF. Switch on after the CTF
- Processing a job during the CTF.

Note: The 'Processing' test involved sending an large file to the device so that it would either be receiving or Ripping the job during the CTF.

- In each case the internal clock of the device under test was set to a time prior to the CTF.
- A test page was printed from the device to confirm the pre-CTF time.
- The test was performed.
- A test page was printed from the device to confirm the post-CTF time.
- A job log page was printed to verify correct operation, and to corroborate printout times.

In addition, Efl have performed tests themselves to check their products against their definition.

Product ambiguity

Both the PS-XJ500 with U5 at Ver.1.4, and System Software at Ver.1.2, and the PS-XJ320 with U5 at Ver.1.4, and System Software at Ver.1.2 were tested. Though Efl currently maintain that both of these product configurations have failed internal testing and are therefore not Year 2000 compliant, our tests show that not only do these product conform to the Efl definition, but also that both products comply with BSI Rules 1, 2, and 4. Efl have been asked to clarify the situation.

It is important to bear in mind the following:

1. Normal User operation or function of these products does not include any operation(s) to configure the device in ways that relate to time or date. Only by using the product's designated Service Mode can an appropriately trained and qualified Service Technician access this function.
2. These products do not display the date as part of its normal function, but only as part of a specifically requested print out.
3. These products do not support the 'Enhanced Web Tools' feature, and therefore cannot be configured in any way other than that mentioned in point 1.
4. The functionality of the Service Mode is not dependent upon date.

General ambiguity

The only Y2k issue with which some ambiguity could be raised relates to Rule 3 of the BSI definition. To address this, Efl have informed us of the following:

The Efl controller's date function is derived from a counter therefore the product does not necessarily know the year as '2000', but as '00', '01', '02' etc. An algorithm is used to calculate the leap year in such a manner that year 2000 is recognised as such. Each subsequent four-year cycle is then recognised as a leap year.

This information falls within the guidelines of Rule 3 as an '...unambiguous algorithm...' and thus makes a product compliant. It further implies that inaccuracies of calculation will not occur until midnight on 29/02/2100; a date estimated to be beyond the reasonable lifespan of the product.

Conclusion

Summarising the above information, the following can be stated:

Within the definition of Year 2000 conformity requirements as expressed by the BSI, both the Canon PS-XJ500 (System Software Ver 1.2 - U5 at Ver 1.4), and the PS-XJ320 (System Software Ver 1.2, - U5 at Ver 1.4) comply with all rules and are therefore Year 2000 compliant.

In addition Efl's own testing procedures have detailed that the following are also Year 2000 compliant:

<u>Conforms to the policy statement</u>	Product Name	Quantity of RAM fitted (in MB)	System Software Version (and above)
	PS-XJ 500 / 500e	64	2.0
	PS-XJ 4000	128	3.2
	PS-XJ 4500	128	3.2
	PS-XJ 5000	128 / 144 / 256	3.2
	PS-XJ 8000	256 / 512	5.0 *
	PS-MX20	160	1.01
	PS-ZX30	256	1.03
	PS-ZX35 *	256	2.0
	PS-ZX50	256	1.03
	PS-ZX55 *	256	2.0
	PS-ZX80	512	2.0
	X2e Controller - (GP215)	32	1.2
	X3e Controller - (GP335/405)	32	1.0
	X6e Controller - (GP605)	32	1.01
	Salsa Controller - (CP660)	64	1.0
	Tango Controller - (CLBP460PS)	32	1.0

NB: This table is updated by Efl approximately once a month and hence is subject to alteration.

* = Not yet launched.

With respect to the products in the table below, Efl expects to provide a Y2K solution before Q4/99.

<u>Do not Conform</u>	Product Name	Quantity of RAM fitted (in MB)	System Software Version (and above)
	PS-XJ 2000	48	3.1
	PS-XJ 2500	48	3.1
	PS-XJ 3000	80	3.1
	PS-XJ 3500	80	3.1
	PS-XJ 4000	128	3.1
	PS-XJ 4500	128	3.1
	PS-XJ 8000	256 / 512	4.32
	CLBP360PS Controller	16 / 32	2.01