Date: 2023-06-06 **Report CNC Parametric Curve Interpolation and Trajectory Tracking**
Author: wruslandr@gmail.com **Part 3 of 5 Circle and Astepi (x-y) parametric curves**

ITEM	DESCRIPTION	CIRCLE CURVE					ASTEROID + EPICYCLOID CURVE				
1	Run user feedrate command (mm/s)	FC10	FC20	FC25	FC30	FC40	FC10	FC20	FC25	FC30	FC40
2	Total interpolated u-points	49641	24822	19859	16549	12413	76275	38169	30563	25499	19184
3	Parameter completion (reached u-end)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Pushdown epsilon eps(u) algorithm										
4	Count before pushdown, eps(u) is below (1E-6)	49641	24822	19859	16549	12413	76275	38061	30413	25309	18917
5	Count pushdown points, eps(u) to below (1E-6)	0	0	0	0	0	0	108	150	190	267
6	Check Total u-points	49641	24822	19859	16549	12413	76275	38169	30563	25499	19184
	Epsilon eps(u) chord error										
7	Count eps(u) above (1E-6)	0	0	0	0	0	0	0	0	0	0
8	Count eps(u) in (1E-7, 1E-6)	0	6959	17603	16549	12413	407	820	4011	6679	13976
9	Count eps(u) in (1E-8, 1E-7)	49641	17863	2256	0	0	23373	37349	26552	18820	5208
10	Count eps(u) in (1E-9, 1E-8)	0	0	0	0	0	52495	0	0	0	0
11	Count eps(u) in (1E-10, 1E-9)	0	0	0	0	0	0	0	0	0	0
12	Count eps(u) below (1E-10)	0	0	0	0	0	0	0	0	0	0
13	Check Total eps(u) points	49641	24822	19859	16549	12413	76275	38169	30563	25499	19184
	Count interpolated u-points										
14	Count_rising_S_curve u-points	2483	1242	993	828	621	4437	2219	1775	1479	1110
15	Count_frate is_lower than fratelimit	22363	11171	8936	7449	5586	33349	16686	13352	11144	8085
16	Count_frate is_equal to fratelimit	0	0	0	0	0	0	0	0	0	0
17	Count_frate is_higher than fratelimit	22313	11168	8937	7445	5585	35536	17787	14254	11891	9250
18	Count_falling_S_curve u-points	2482	1241	993	827	621	2953	1477	1182	985	739
19	Check Total u-points	49641	24822	19859	16549	12413	76275	38169	30563	25499	19184
	Count u-points histogram (G01 codes)										
20	Count u-points [0.00 <= u < 0.10)	4964	2482	1985	1654	1241	8110	4055	3244	2704	2028
21	Count u-points [0.10 <= u < 0.20)	4964	2482	1986	1655	1241	4901	2478	2009	1702	1334
22	Count u-points [0.20 <= u < 0.30)	4964	2482	1986	1655	1241	7391	3696	2957	2464	1848
24	Count u-points [0.30 <= u < 0.40)	4964	2482	1986	1655	1241	7234	3617	2894	2412	1809
25	Count u-points [0.40 <= u < 0.50)	4964	2482	1986	1655	1242	9182	4592	3673	3061	2297
26	Count u-points [0.50 <= u < 0.60)	4964	2483	1985	1655	1241	7216	3608	2887	2406	1804
27	Count u-points [0.60 <= u < 0.70)	4964	2482	1986	1655	1241	9831	4916	3933	3278	2458
28	Count u-points [0.70 <= u < 0.80)	4964	2482	1986	1655	1241	7525	3763	3010	2508	1882
29	Count u-points [0.80 <= u < 0.90)	4964	2482	1986	1654	1242	8801	4401	3521	2935	2201
30	Count u-points [0.90 <= u <= 1.00]	4965	2483	1987	1656	1242	6084	3043	2435	2029	1523
31	Check Total u-points	49641	24822	19859	16549	12413	76275	38169	30563	25499	19184
32	**Total curve error (sum of epsilon(u))**	1.09E-03	1.09E-03	2.19E-03	2.73E-03	4.37E-03	8.40E-04	1.64E-03	2.02E-03	2.39E-03	3.11E-03
33	**Total dist traversed (sum of chord lengths)**	496.379	496.377	496.396	496.376	496.394	426.262	426.262	426.262	426.262	426.262

	NOTES											

Sheet1