Nec2 Short reference card

1		2	3	4	5	6	7	8	9	10	11	
GW	Wire geom	Tag Nr	nr of segs	X1	Y1	Z1	X2	Y2	Z2	wire radius		
GM	Geom Move	Tag increm	new structs	Rot X (deg)	Rot X (deg)	Rot Z (deg)	Mov X	Mov Y	Mov Z	From Tag		
GR	Geom Rotate	Tag increm	total structs									
GE	no gnd	0		no ground plane present (Free Space)								
	ground plane	1		Ground plane present, wire-ends for Z=0 are 'connected' to ground (GN card required; screen- and wire radius on GN card should be blank)								
	ground	-1		Ground present, wire-ends are not 'connected' to ground (GN card required)								
EX	Voltage Src	0	tag nr	segm nr	XX ->	real volts	imag volts	(19: 0 No act.; 1 print rel.admit. matrix asymetry) (20: 0 No act.; 1 print imp's for frequency loop)				
(*)	Current src	6	tag nr	segm nr	XX ->	real amps	imag amps					
FR	linear	0	Nr of steps	0	0	start Mc	Step size			F1 = F0 + step		
	log	1	nr of steps	0	0	start Mc	Step size			F1 = F0 * step		
GN	free space	-1								Nullifies previous ground settings		
	finite ground	0	nr rad. wires	0	0	diel. Const	Cond. S/m	radius screen	radius wires	(In meters) See also GE card RP card must be set to 4		
	perfect ground	1										
	sommer norton	2	0	0	0	diel. Const	Cond. S/m			note: conductivity must be negative for frequency loop		
LD	nullify	-1										
	serie RLC	0	tag nr	start segm	0/end segm	R ohms	L Henry	C Farad		LD card always in series with EX and TL cards		
	parall	1	see 0			see 0				LD4 does not supno automatic frequency scaling		
	serie RLC	2	see 0			R oh/m	L H/m	C F/m		Grounds: cond: diel: Sea water: 5.0 80 Good ground: .01 10 Poor ground .001 4 Polar ice .0001 1 Fresh water .002 80 excellent .03 20 good .006 14 avarage .005 13 poor .002 12		
	parall	3	see 0			see 2						
	impe-dance	4	see 0			Resis. Ohms	React. Ohms	-				
	wire cond.	5	see 0			Cond. mho/m						
(*)	LC trap	6	See 0			Q-coil	L henry	C farad				
(*)	Insula-ted wire	7	See 0			Diel. const	Coat radius					
TL	trans line	tag-nr port 1	seg-nr port1	tag-nr port 2	seg-nr port 2	imped ohms	Length mtrs	admit real 1	admit ima 1	admit real 2	admit ima 2	
		a) Multiple ports are connected in parallel						b) If connected to segment with LD; LD is in serie with TL				
RP	normal	0	theta steps	phi steps	XNDA	theta start	Phi start	Theta stsize	phi stsize	far fld dist.	norm gain F	

	add surf wave	1	see 0	XNDA: 17: 0: major/minor axis; 1: vert/hor gain 18: 0: no norm gain; 1-5: normalized gain 19: 0: power gain; 1: directive gain 20: 0: no avaraging; 1: avar gain; 2 avar gain (see also page 78 doc.)						Add surface wave
	ground cond's	2..3	see 0							Special ground conditions	
	ground screen	4	see 0							Ground-screen; must be specified in GN card !	
	gnd scr, cond's	5..6	see 0							Botth ground-screen and special ground conditions	
PQ	no charges	-1									
	charges	0	tag nr	start segm	0/end segm						
PT	all curr	-2									
	no curr	-1									
	Curr.	0	tag nr	start segm	0/end segm						
	Receiv-pattern	1..3	tag nr	start segm	0/end segm					See page 74 manual	
Geometry cards		I1	I2	F1	F2	F3	F4				
		3-5	6-10	11-20	21-30	31-40	41-50				
Prog-ctrl cards		I1	I2	I3	I4	F1	F2	F3	F4	F5	F6
		3-5	6-10	11-15	16-20	21-30	31-40	41-50	51-60	61-70	71-80

Note: - This summary is far from complete. It only lists the most important cards used by the author for his initial steps on the antenna-modeling path…
- Use the 'Nec-editor' (See 'Settings' option on the 'Main' form) or consult the Nec-2 user-manual to assist with filling the appropriate positions for the different Nec-2 cards.