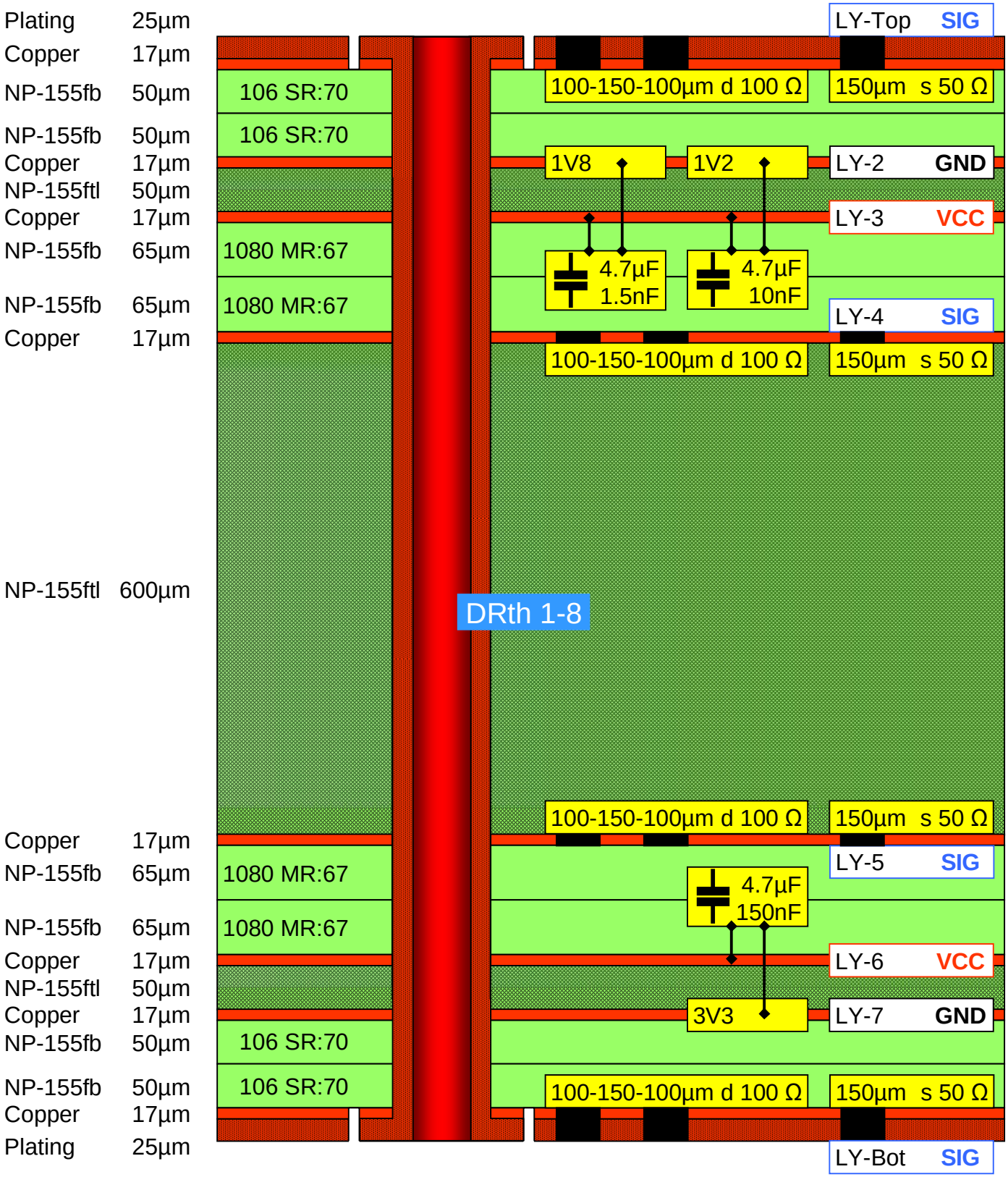
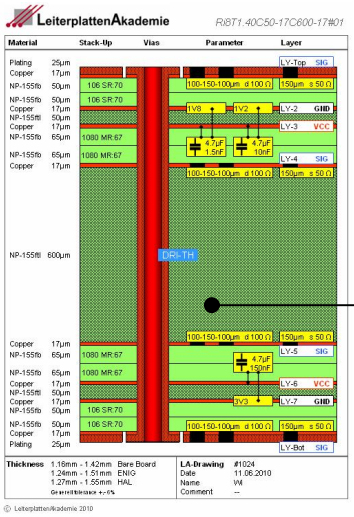
Material		Stack-Up	Vias	Parameter	Layer



Thickness	1.16mm - 1.42mm	Bare Board
	1.24mm - 1.51mm	ENIG
	1.27mm - 1.55mm	HAL
	General tolerance +,- 6%	

LA-Drawing	#1024
Date	11.06.2010 / 16.11.2010 Wi
Name	Wi
Comment	--

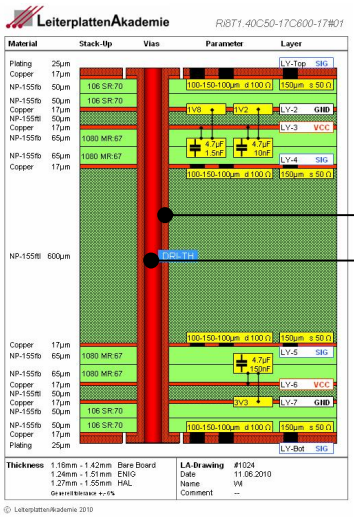
Material per PCB		#	Glass	Resin	Pressed Thickness	Company
Prepreg	NP-155fb	4	106	SR:70%	48µm +,- 8µm	NanYa
Prepreg	NP-155fb	4	1080	MR:67%	71µm +,- 8µm	NanYa
Core	NP-155ftl	2	n.a.	n.a.	50µm	NanYa
Core	NP-155ftl	1	n.a.	n.a.	710µm	NanYa



Main Material Properties

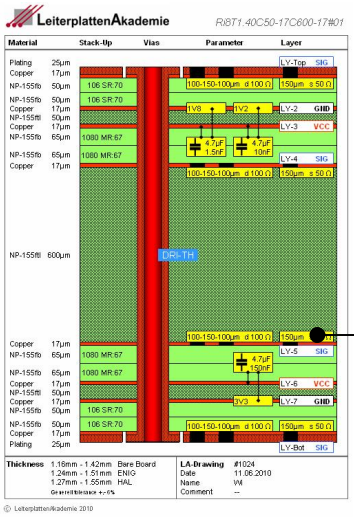
IPC-Specification sheet	IPC-4101C / 99
Epoxy-System	FR4
Curing agent	phenolic
Flame retardend mech.	RoHS compliant Bromine
UL-zertificate	UL94 V-0
Dielectric value	4.1@1GHz
Loss tangent	0.014@1GHz
Tg	150° by DSC
CTE x/y/z	before Tg : 18/18/ maximum 60 after Tg : 18/18/ maximum 300
Electrical strength	40 kv/mm minimum specified by IPC
Adhesive strength	0.78 n/mm minimum for copper foils >17µm

Technolam Data sheet /NanYa, May 2010

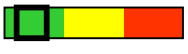


PCB & CAD-Layout Specification

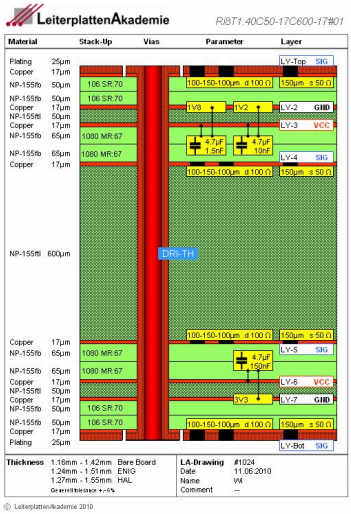
PCB Class	Rigid
Cores mounted	Inside
Copper Thickness	25µm for throughhole barrels
Throughhole Vias	CAD : 100µm diameter + 400µm pad minimum Tool : 200µm diameter minimum
Aspect-Ratio	1:8 or better is necessary
BuriedVias	no
BlindVias	no
Track width	100µm minimum on all signal layers
Track distance	90µm minimum on all signal layers
Solder Mask	double sided, fotolithographic, thickness 20µm
Plugging	no
Edge Metallisation	no
UL	yes



Electromagnetical & physical Properties

MultiPowerSystem	2 pairs GND + VCC with 50µm distance
Impedance	50 Ω single ended 100 Ω differentiell
Decoupling	1 pair 4.7µF + 1.5nF on top (GND to 1V8) 1 pair 4.7µF + 10nF on top (GND to 1V2) 1 pair 4.7µF + 150nF on bottom (GND to 3V3)
Power Integrity	
Signal Integrity	
EMI	
Thermal properties	

Impedance calculated with POLAR Si8000 V9.02.00
Decoupling Capacitors are calculated with DCC Silent V.4.0



Statistic Values

Copper volume + weight	Powerplane 136 mm^3/dm^2 1.21 gr/dm^2	Copper thickness 17µm Density 80%
	Signallayer 136 mm^3/dm^2 0.68 gr/dm^2	Copper thickness 17µm Density 40%
	Signallayer 136 mm^3/dm^2 1.68 gr/dm^2	Copper thickness 42µm Density 40%
Dielectric weight	NP-155f 2.0 gr/dm^2	Reference thickness 100µm
Summary	33.24 gr/dm2	at 1.5mm PCB-thickness
Via Copper weight	0.171 gr/100vias	Tool diameter 200µm