

Nokia Customer Care

Service Manual

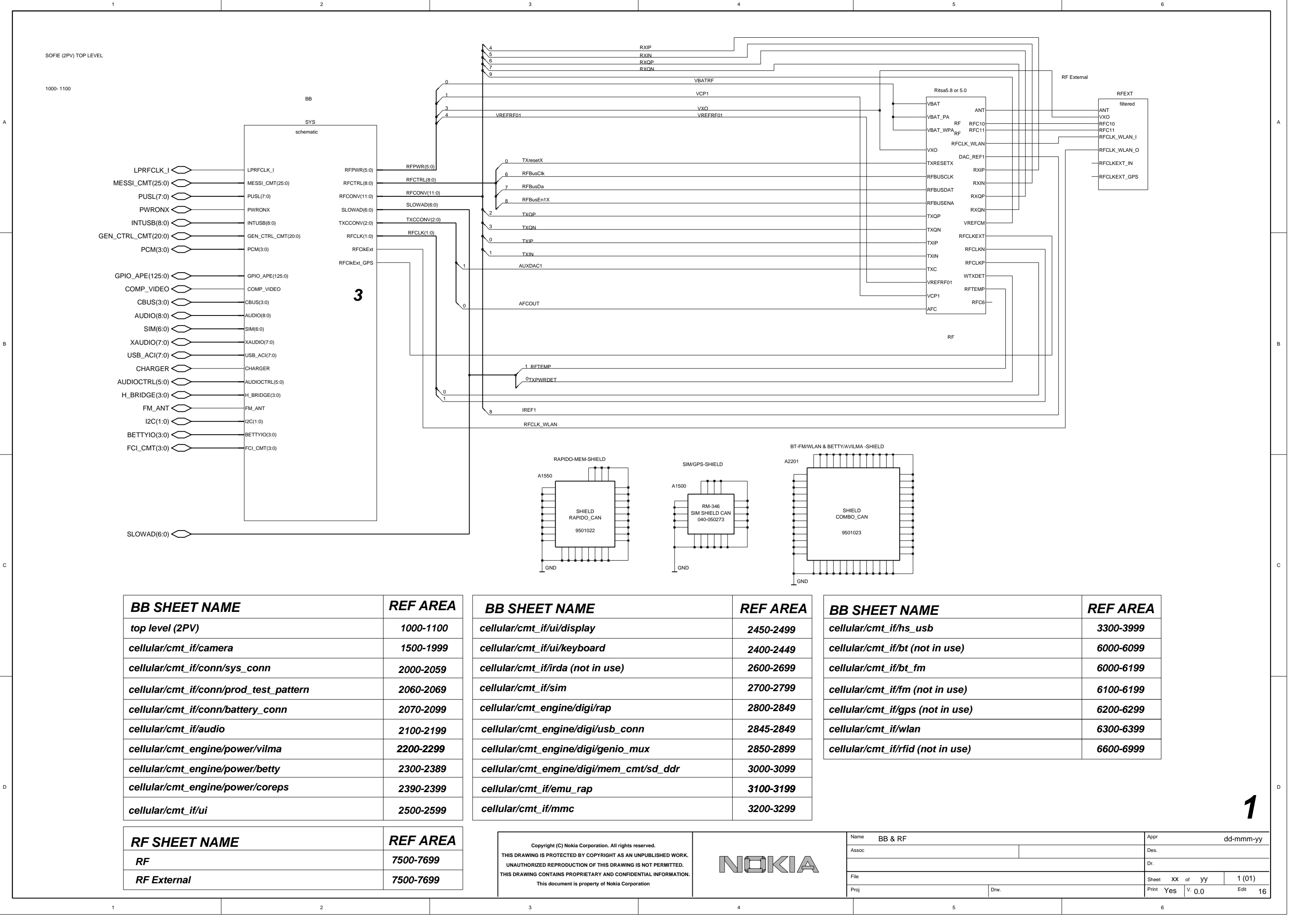
RM-437; RM-449; RM-450 (Nokia E63)

Schematics

Part No: (Issue 1)

COMPANY CONFIDENTIAL





BB SHEET NAME	REF AREA
top level (2PV)	1000-1100
cellular/cmt_if/camera	1500-1999
cellular/cmt_if/conn/sys_conn	2000-2059
cellular/cmt_if/conn/prod_test_pattern	2060-2069
cellular/cmt_if/conn/battery_conn	2070-2099
cellular/cmt_if/audio	2100-2199
cellular/cmt_engine/power/vilma	2200-2299
cellular/cmt_engine/power/betty	2300-2389
cellular/cmt_engine/power/coreps	2390-2399
cellular/cmt_if/ui	2500-2599

RF SHEET NAME	REF AREA
RF	7500-7699
RF External	7500-7699

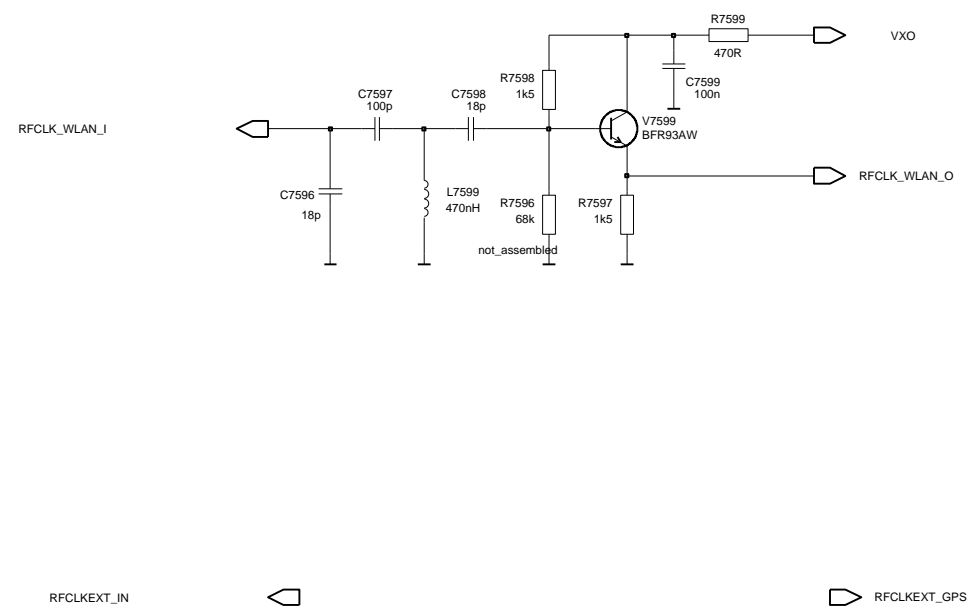
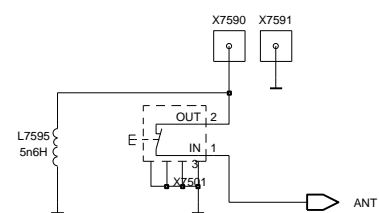
BB SHEET NAME	REF AREA
cellular/cmt_if/ui/display	2450-2499
cellular/cmt_if/ui/keyboard	2400-2449
cellular/cmt_if/irda (not in use)	2600-2699
cellular/cmt_if/sim	2700-2799
cellular/cmt_engine/digi/rap	2800-2849
cellular/cmt_engine/digi/usb_conn	2845-2849
cellular/cmt_engine/digi/genio_mux	2850-2899
cellular/cmt_engine/digi/mem_cmt/sd_ddr	3000-3099
cellular/cmt_if/emu_rap	3100-3199
cellular/cmt_if/mmc	3200-3299

BB SHEET NAME	REF AREA
cellular/cmt_if/hs_usb	3300-3999
cellular/cmt_if/bt (not in use)	6000-6099
cellular/cmt_if/bt_fm	6000-6199
cellular/cmt_if/fm (not in use)	6100-6199
cellular/cmt_if/gps (not in use)	6200-6299
cellular/cmt_if/wlan	6300-6399
cellular/cmt_if/rfid (not in use)	6600-6999

Copyright (C) Nokia Corporation. All rights reserved.
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.
This document is property of Nokia Corporation



Name	BB & RF	Appr	dd-mmm-yy
Assoc		Des.	
File		Dr.	
Proj	Drw.	Sheet	XX of yy
		Print	Yes
		V.	0.0
		Edit	16



 RFC10
 RFC11

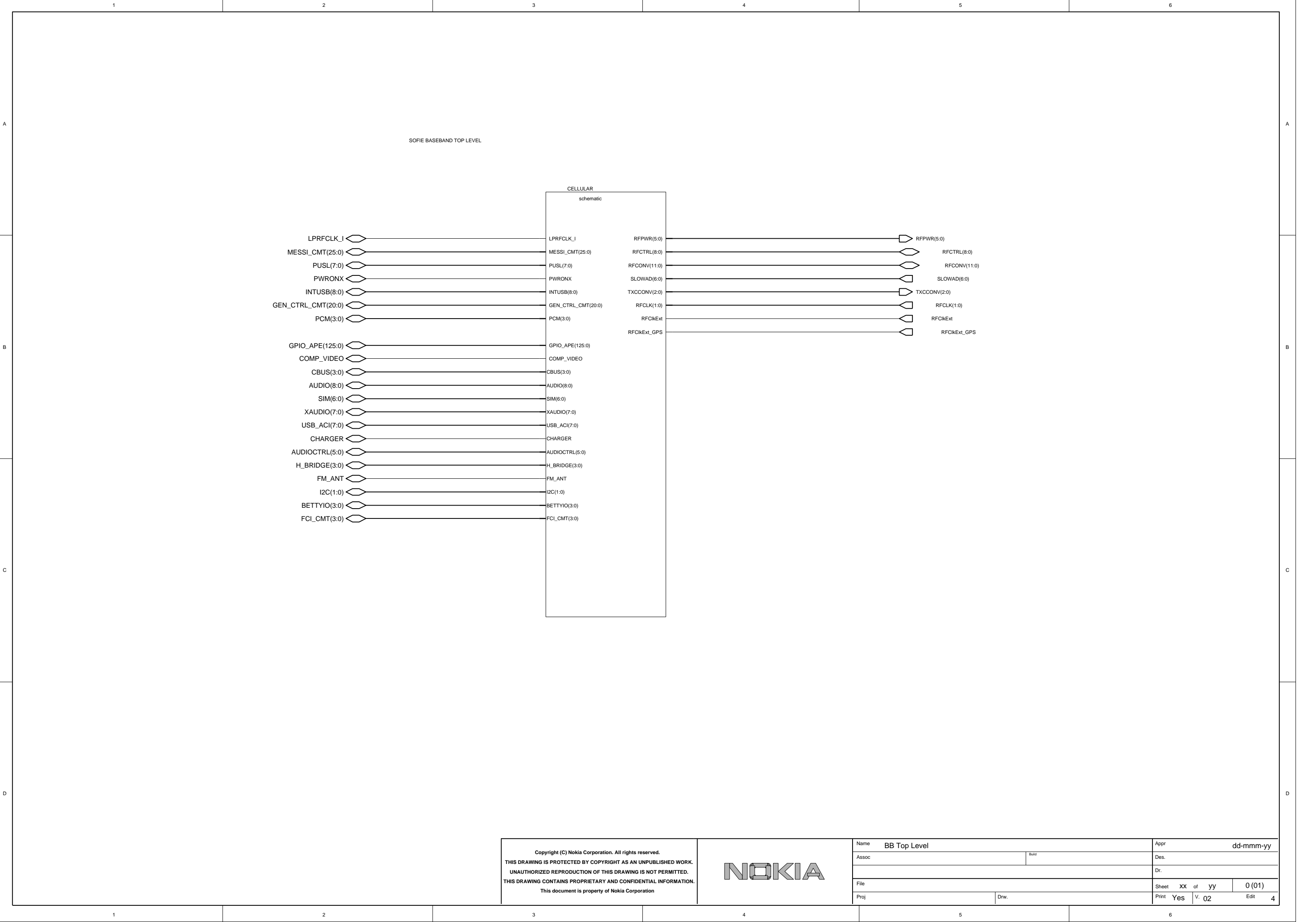
Copyright (C) Nokia Corporation. All rights reserved.

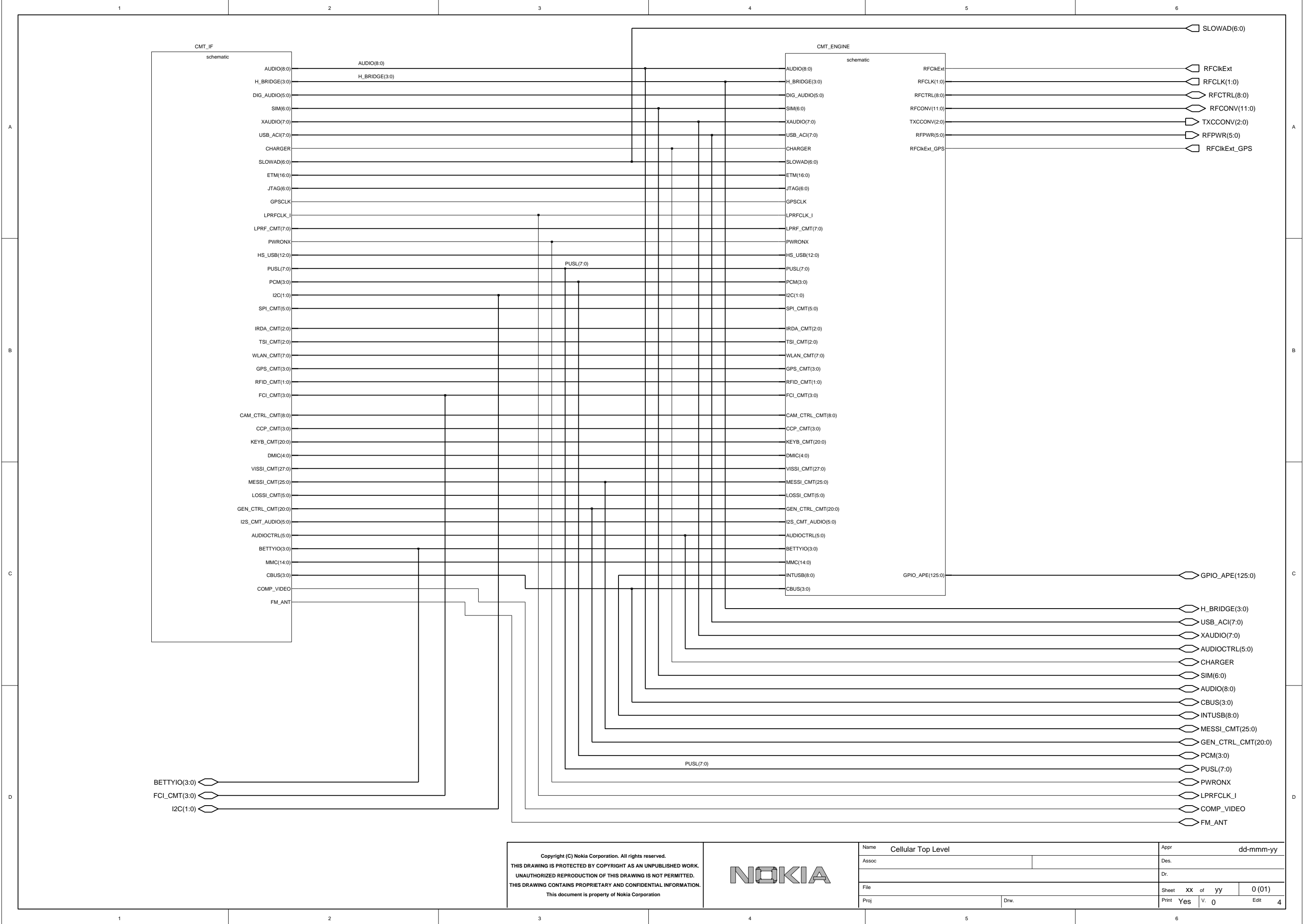
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.

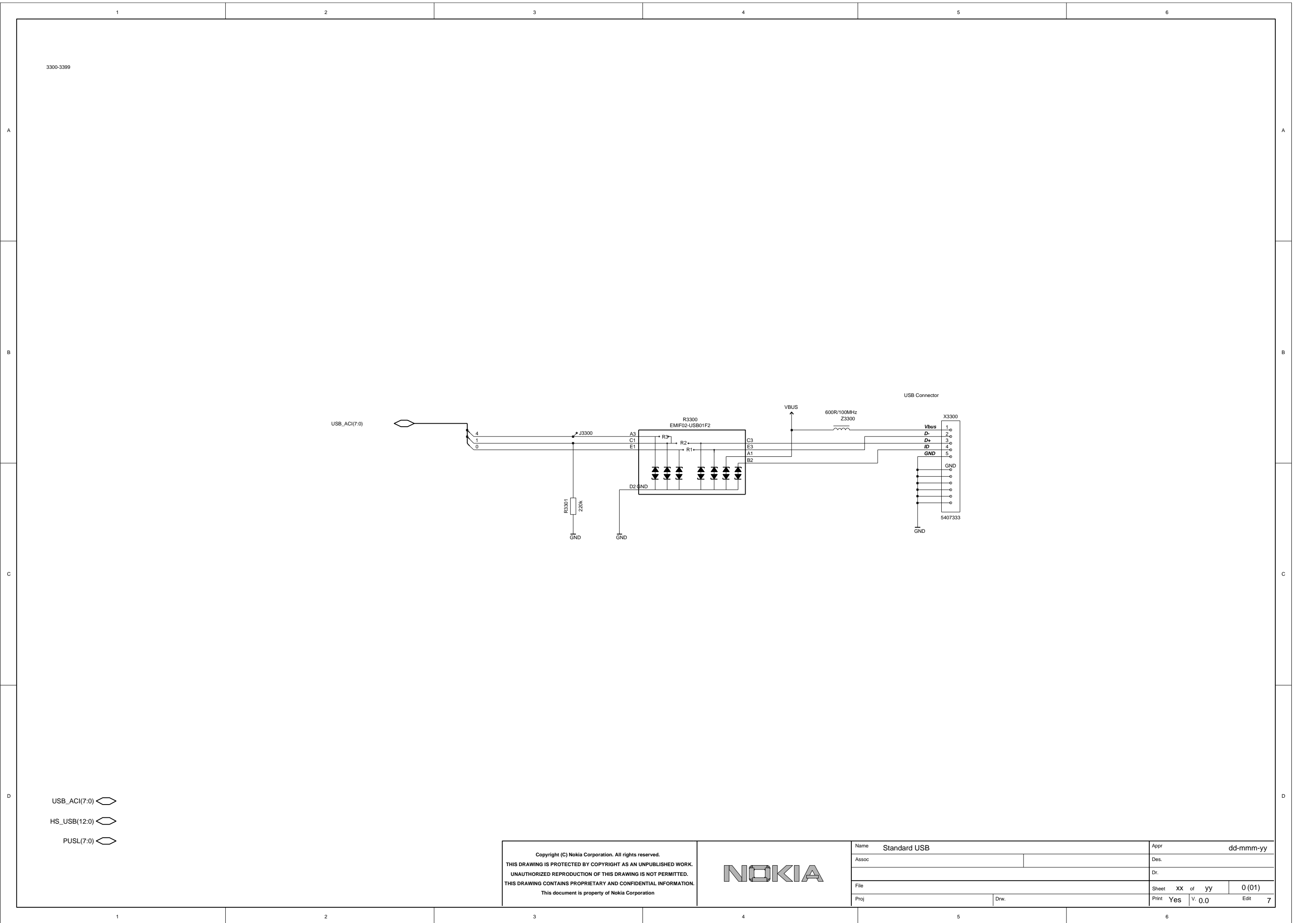
This document is property of Nokia Corporation

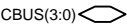


Name		RF EXT		Appr		dd-mmm-yy	
Assoc				Des.			
				Dr.			
File				Sheet		XX	of YY
						0 (01)	
Proj		Drw.		Print		Yes	V. 0.0
						Edit 10	









NOKIA

Name		Bluetooth - FM RDS		Appr		dd-mmm-yy	
Assoc				Des.			
				Dr.			
File				Sheet		xx	of yy
						0(01)	
Proj		Dnw.		Print		Yes	v. 0.0
						Edit 5	



B

- C

NOKIA

D

2700-2799

A

1

B

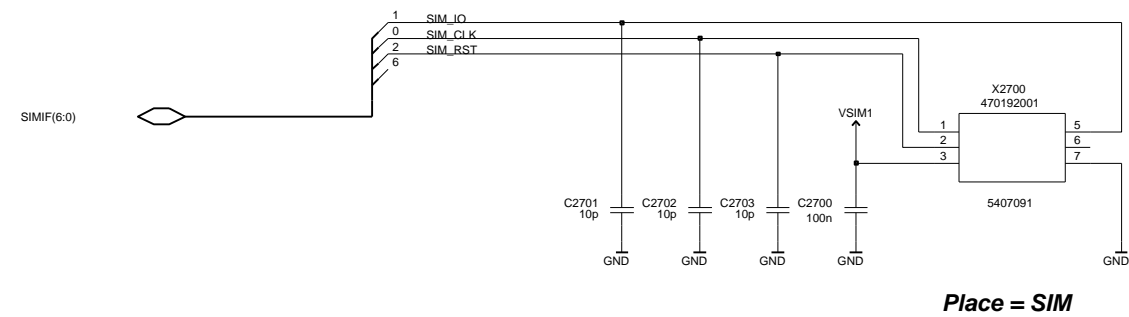
1

C

1

D

1

SIMIF(6:0)

1

2

3

4

5

6

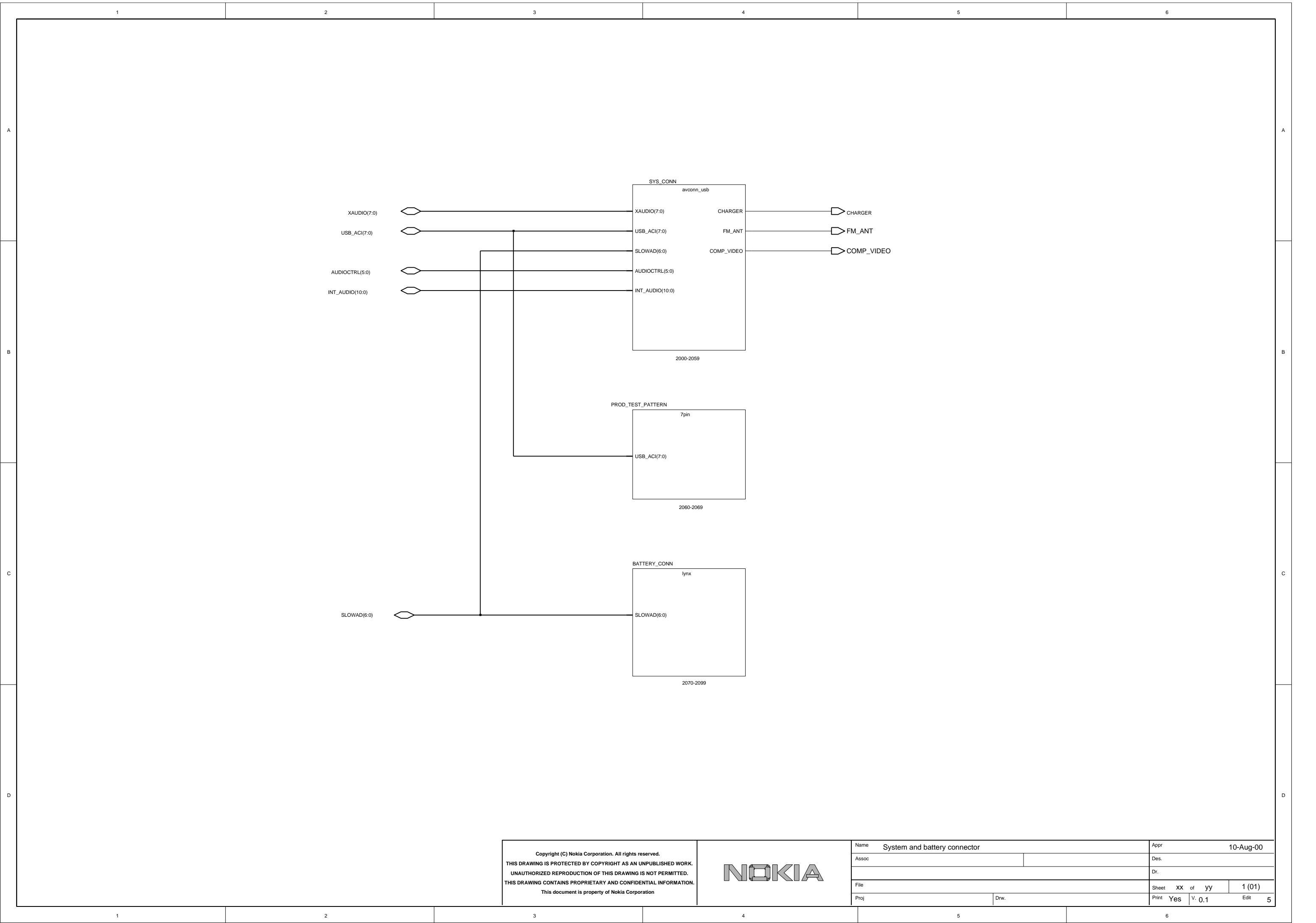
Copyright (C) Nokia Corporation. All rights reserved.

THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.

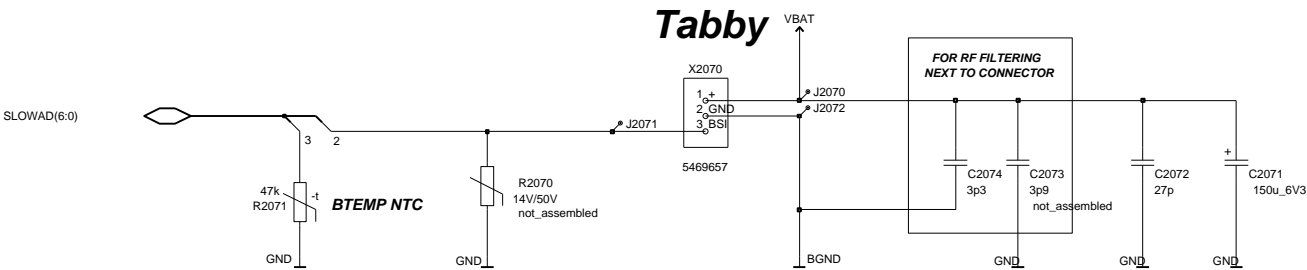
This document is property of Nokia Corporation



Name				SIM				Appr				dd-mmm-yy									
Assoc								Des.													
								Dr.													
File								Sheet				xx		of		yy		0 (01)			
Proj								Drw.		Print		Yes		v.		0.0		Edit		6	



2070-2099



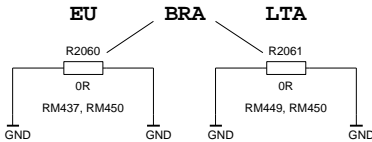
Copyright (C) Nokia Corporation. All rights reserved.
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.
This document is property of Nokia Corporation

NOKIA

Name	Battery Connector		Appr	10-Aug-00	
Assoc	BUILD B1.0		Des.		
File			Dr.		
Proj	Drw.		Sheet	XX of yy	1 (01)
			Print	Yes V. 02	Edit 5

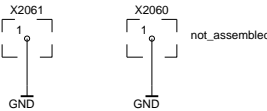
2060-2069

for Variant Identification

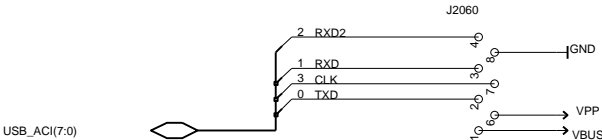


EU RM437 R2060
LTA RM449 R2061
BRA RM450 R2060 & R2061

Traceability Pad's

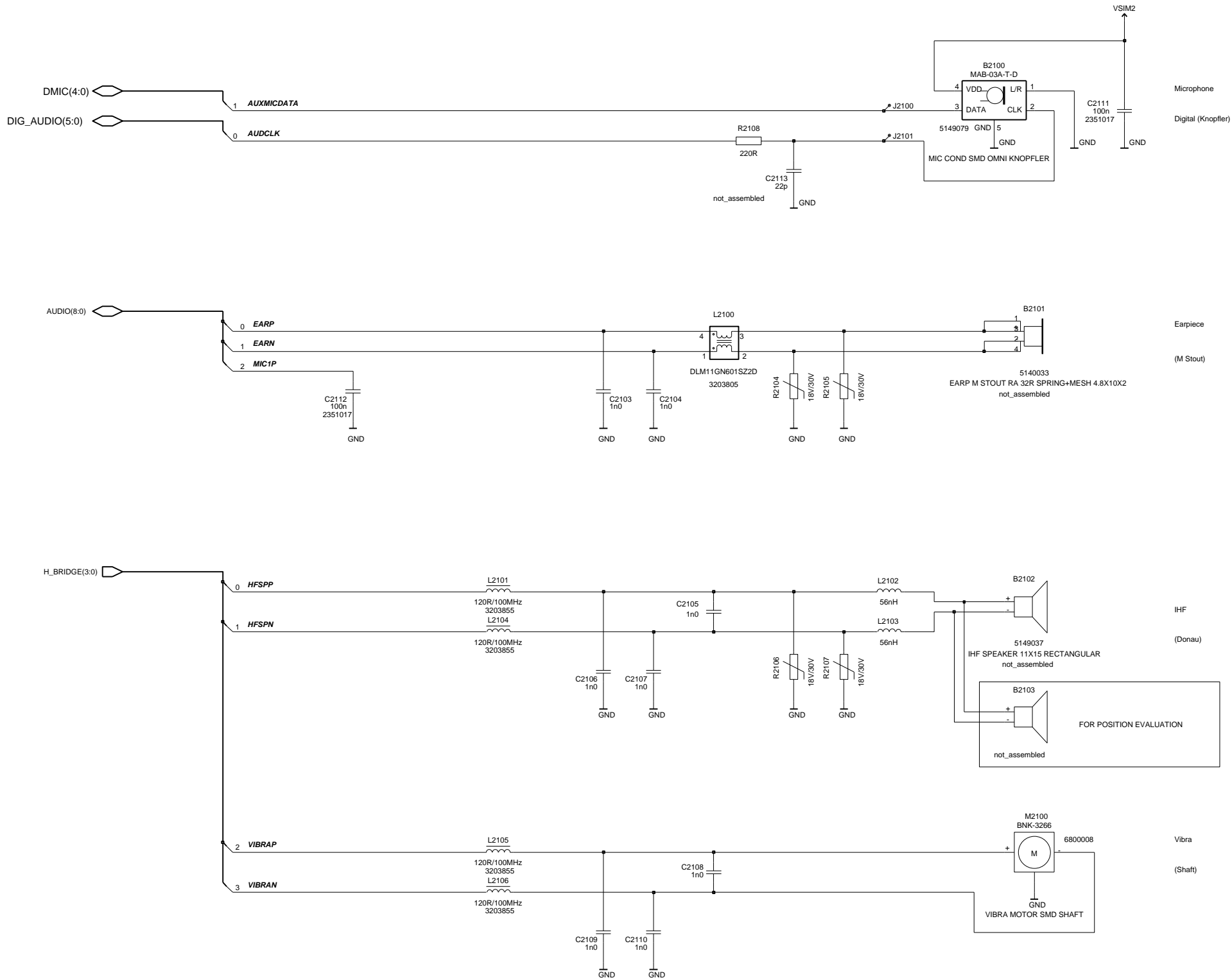


BB5.0 have defined 7-pin test pad pattern

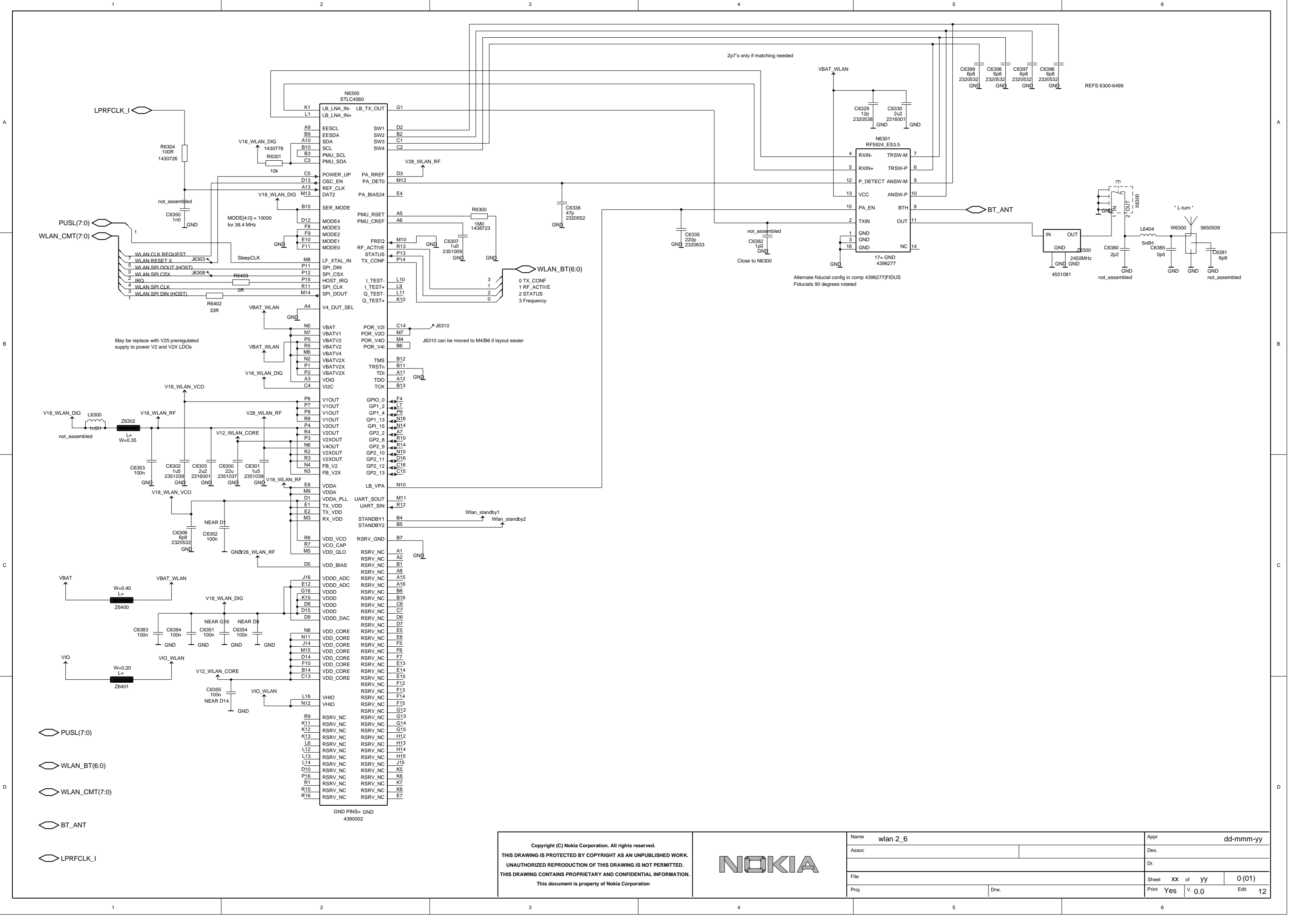




2100-2199



- INT_AUDIO(10:0)
- I2S_CMT_AUDIO(5:0)
- PUSL(7:0)
- FCL_CMT(3:0)
- I2C(1:0)
- AUDIOCTRL(5:0)
- XAUDIO(7:0)

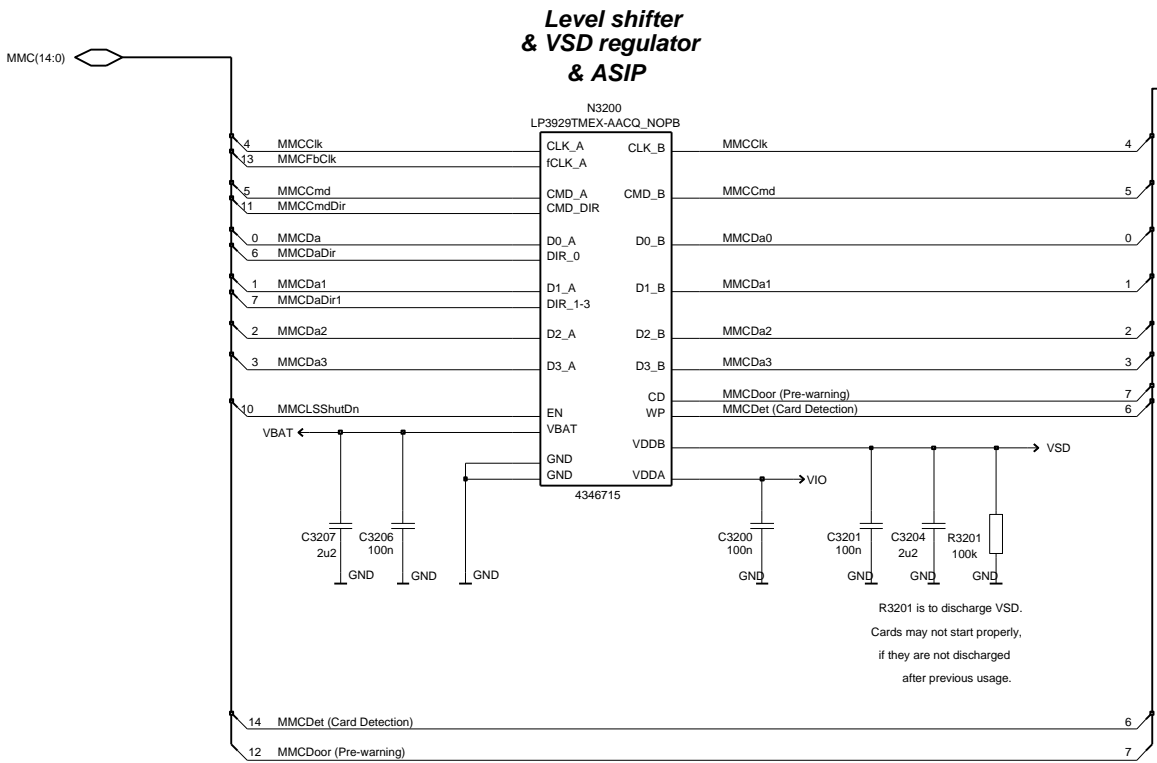


Copyright (C) Nokia Corporation. All rights reserved.
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.
This document is property of Nokia Corporation

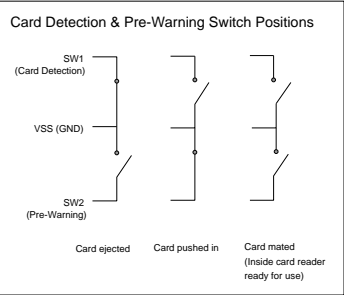
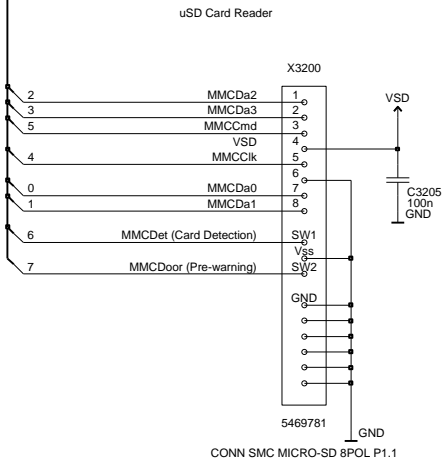


Name	wlan 2_6	Appr	dd-mmm-yy
Assoc		Des.	
		Dr.	
File		Sheet	xx of yy
Proj	Drw.	Print	Yes V. 0.0 Edit 12

3200-3299



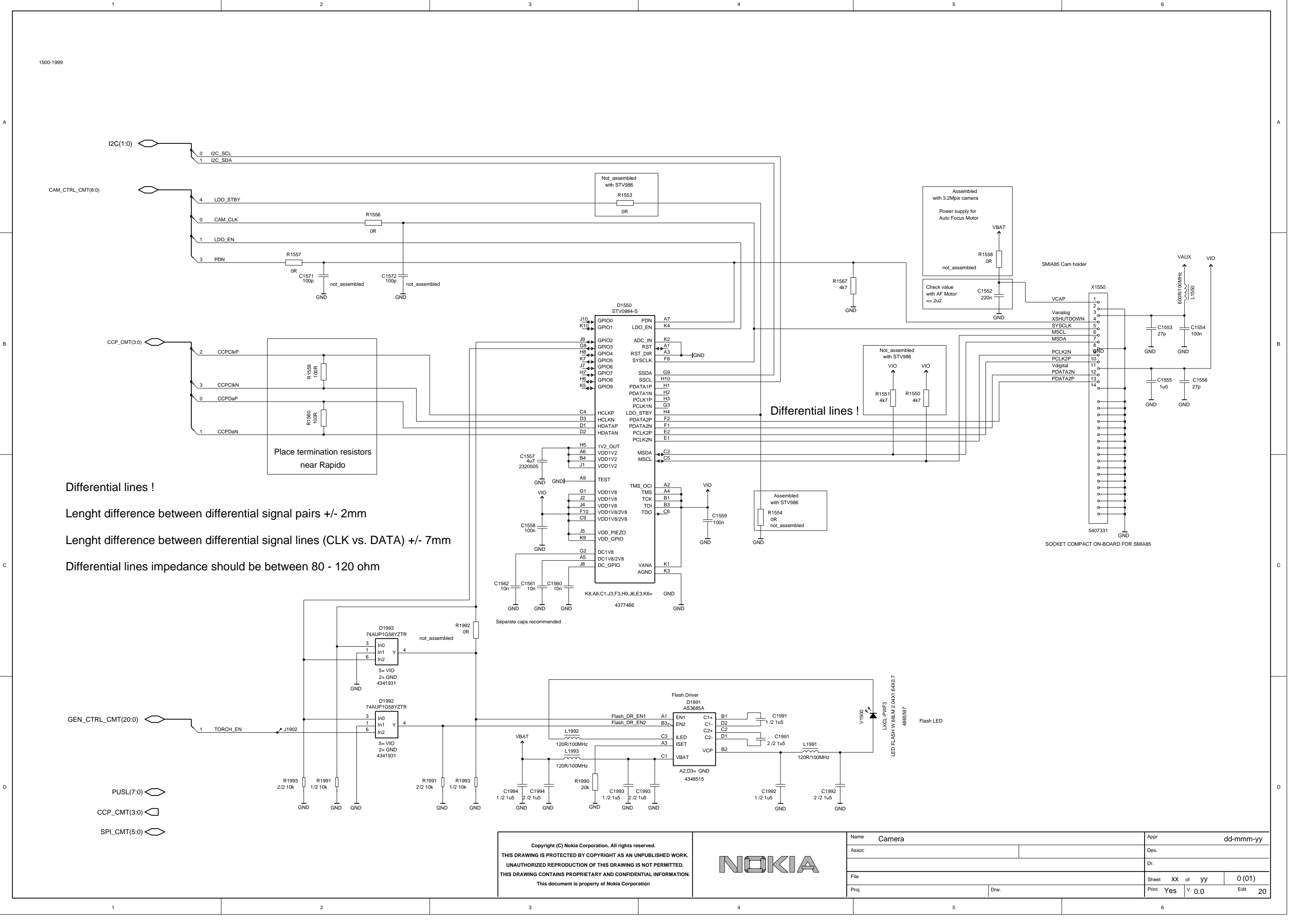
uSD(7:0)



Copyright (C) Nokia Corporation. All rights reserved.
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.
This document is property of Nokia Corporation

NOKIA

Name	uSD card	Appr	dd-mmm-yy
Assoc		Des.	
File		Dr.	
Proj	Drw.	Sheet	xx of yy
		Print	Yes
		V.	0.0
		Edit	9
			0 (01)

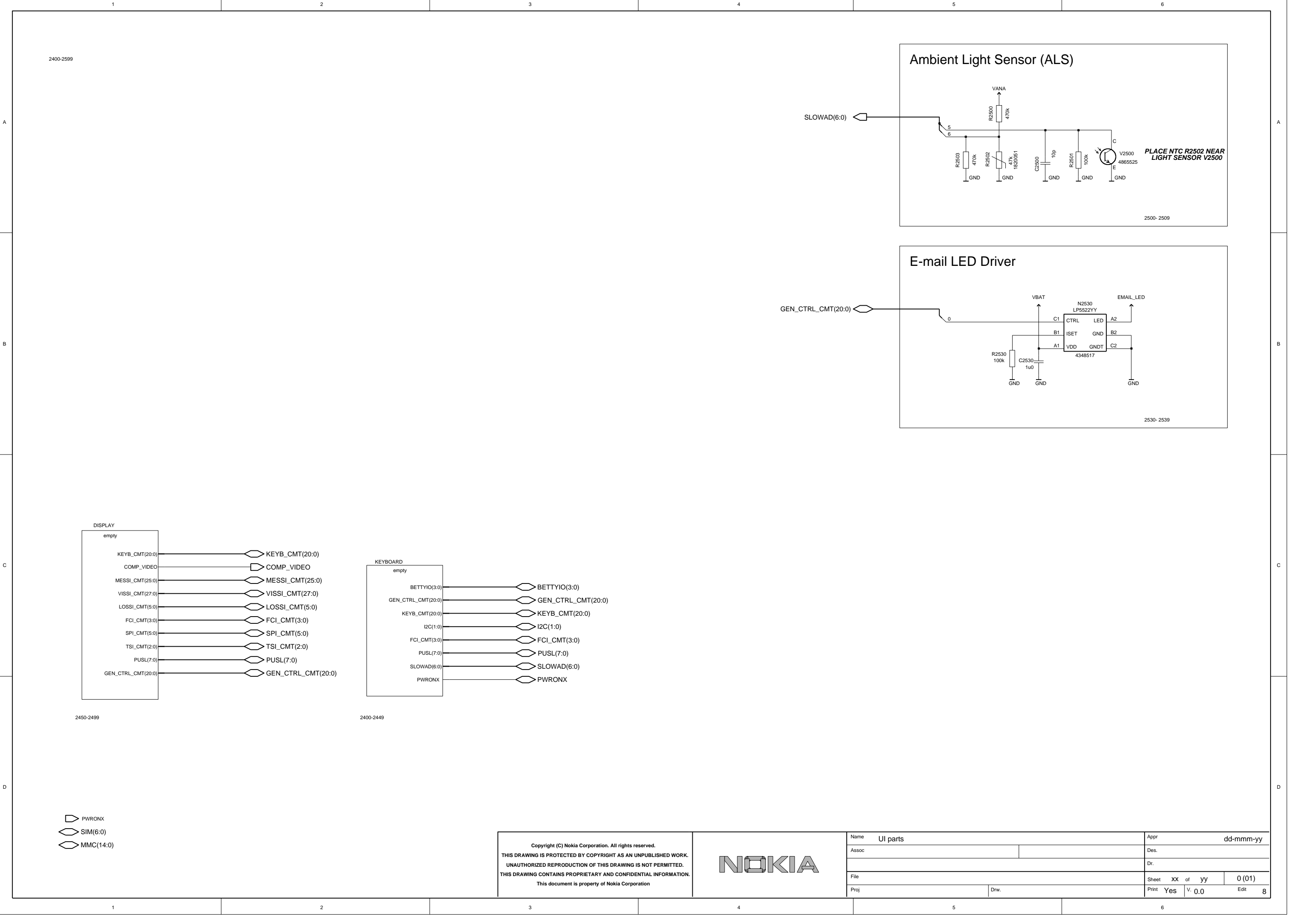


Differential lines !

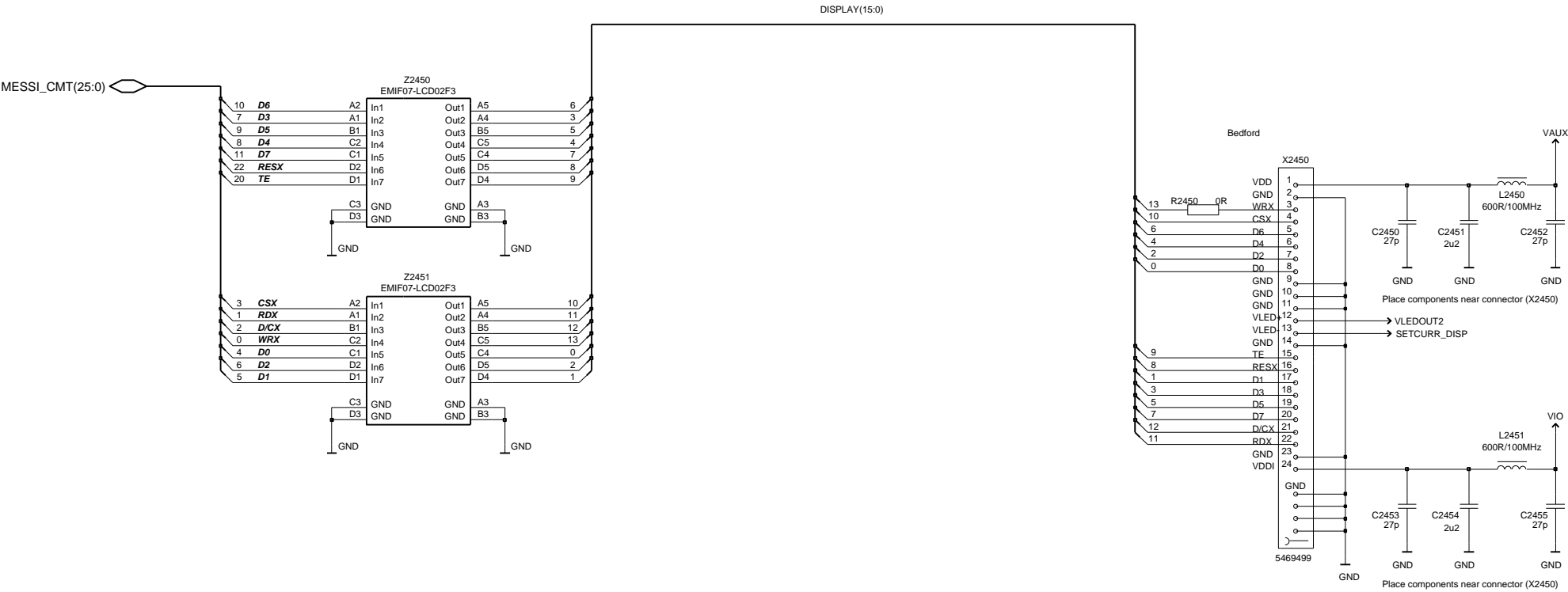
Lenght difference between differential signal pairs +/- 2mm

Lenght difference between differential signal lines (CLK vs. DATA) +/- 7mm

Differential lines impedance should be between 80 - 120 ohm



2450-2499

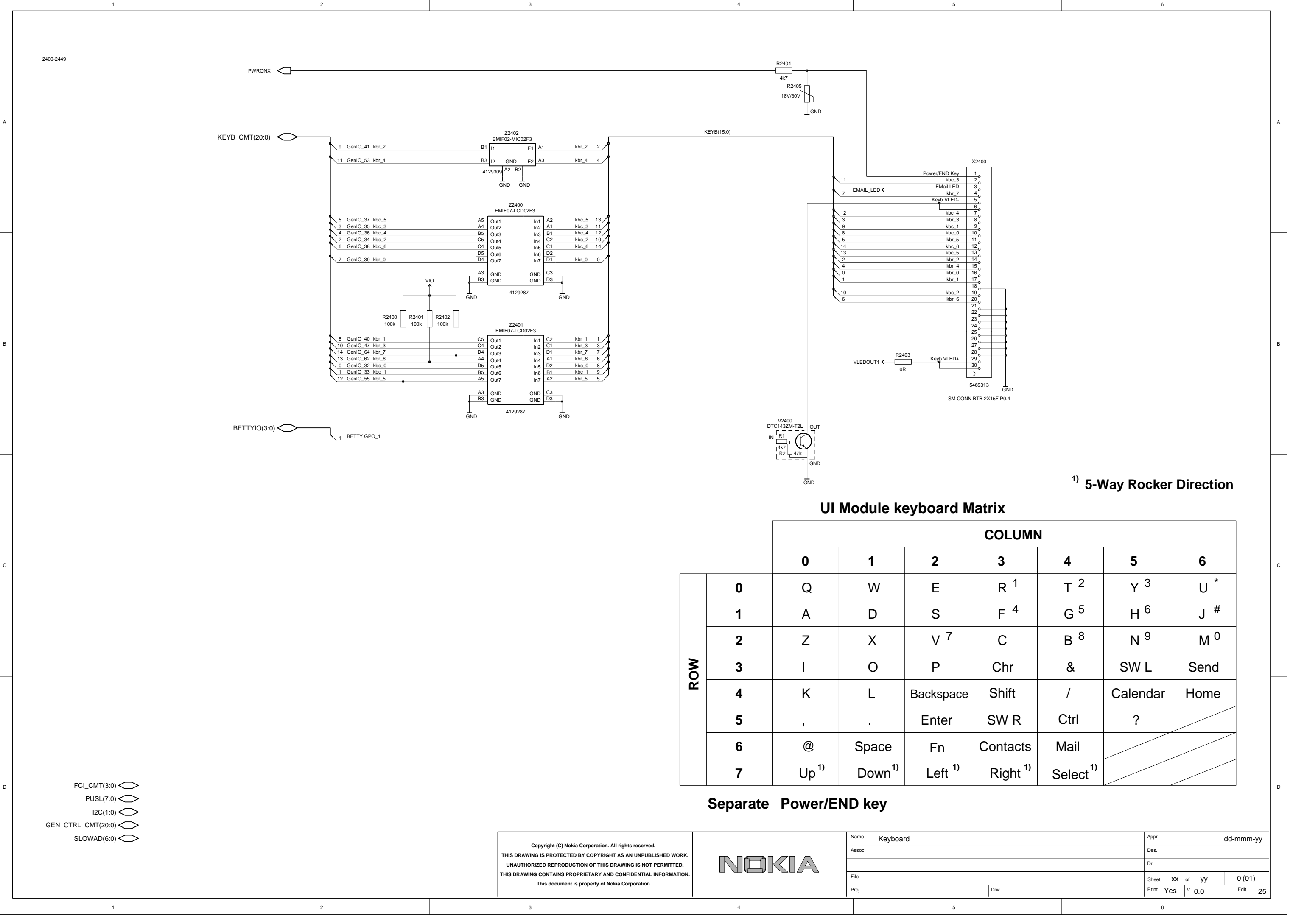


- KEYB_CMT(20:0)
- COMP_VIDEO
- VISSI_CMT(27:0)
- LOSSI_CMT(5:0)
- FCI_CMT(3:0)
- SPI_CMT(5:0)
- TSL_CMT(2:0)
- PUSL(7:0)
- GEN_CTRL_CMT(20:0)

Copyright (C) Nokia Corporation. All rights reserved.
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.
This document is property of Nokia Corporation

NOKIA

Name	Display	Appr	dd-mmm-yy
Assoc		Des.	
File		Dr.	
Proj	Drw.	Sheet	xx of yy
		Print	Yes
		V.	0.0
		Edit	6
			0 (01)



1) 5-Way Rocker Direction

UI Module keyboard Matrix

		COLUMN						
		0	1	2	3	4	5	6
ROW	0	Q	W	E	R ¹	T ²	Y ³	U [*]
	1	A	D	S	F ⁴	G ⁵	H ⁶	J [#]
	2	Z	X	V ⁷	C	B ⁸	N ⁹	M ⁰
	3	I	O	P	Chr	&	SW L	Send
	4	K	L	Backspace	Shift	/	Calendar	Home
	5	,	.	Enter	SW R	Ctrl	?	
	6	@	Space	Fn	Contacts	Mail		
	7	Up ¹⁾	Down ¹⁾	Left ¹⁾	Right ¹⁾	Select ¹⁾		

Separate Power/END key

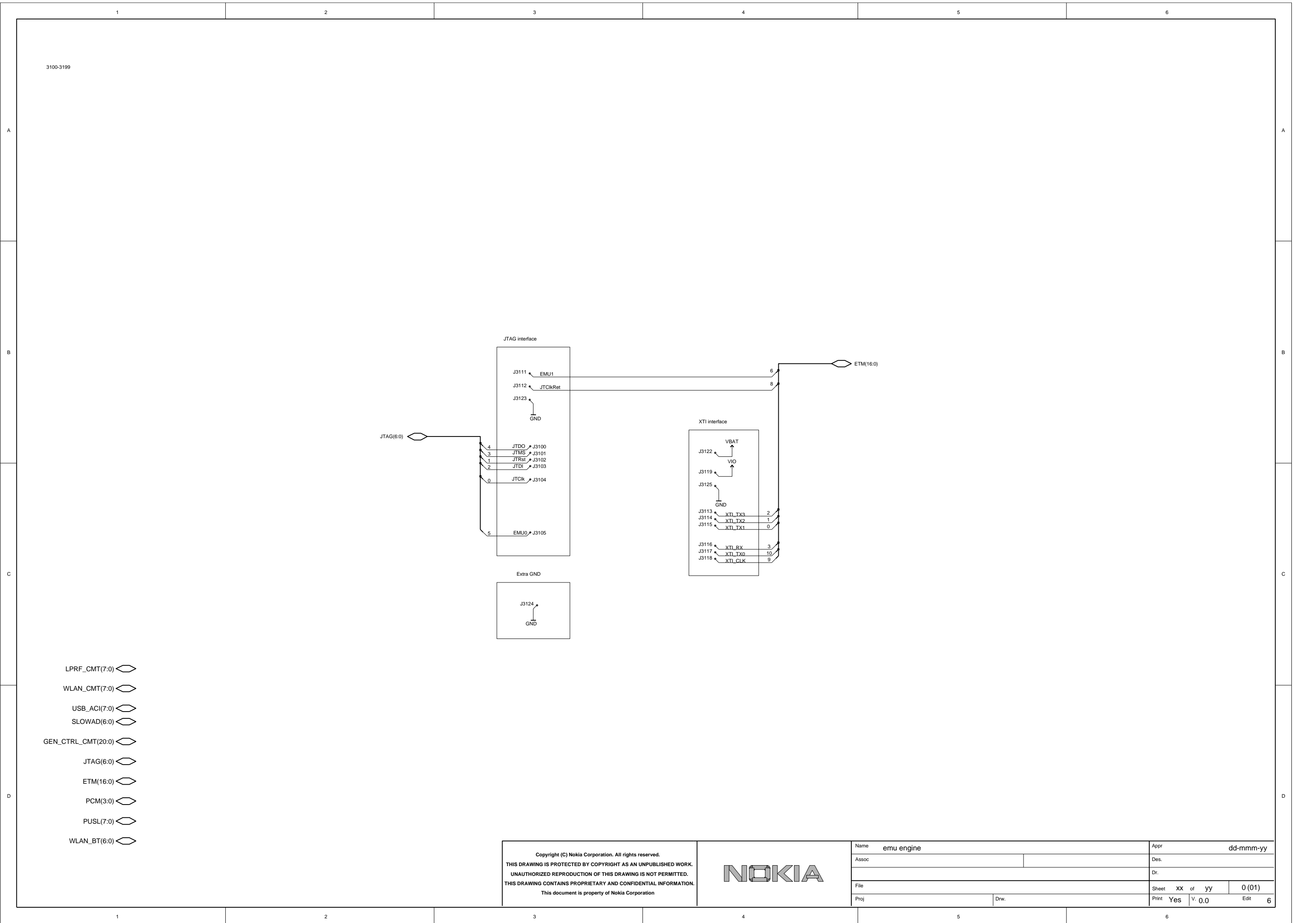
FCI_CMT(3:0)

PUSL(7:0)

I2C(1:0)

GEN_CTRL_CMT(20:0)

SLOWAD(6:0)



LPRF_CMT(7:0)

WLAN_CMT(7:0)

USB_ACI(7:0)

SLOWAD(6:0)

GEN_CTRL_CMT(20:0)

JTAG(6:0)

ETM(16:0)

PCM(3:0)

PUSL(7:0)

WLAN_BT(6:0)

Copyright (C) Nokia Corporation. All rights reserved.
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.
This document is property of Nokia Corporation

NOKIA

Name

emu engine

Assoc

File

Proj

Drw.

Appr

dd-mmm-yy

Des.

Dr.

Sheet

xx

of

yy

0 (01)

Print

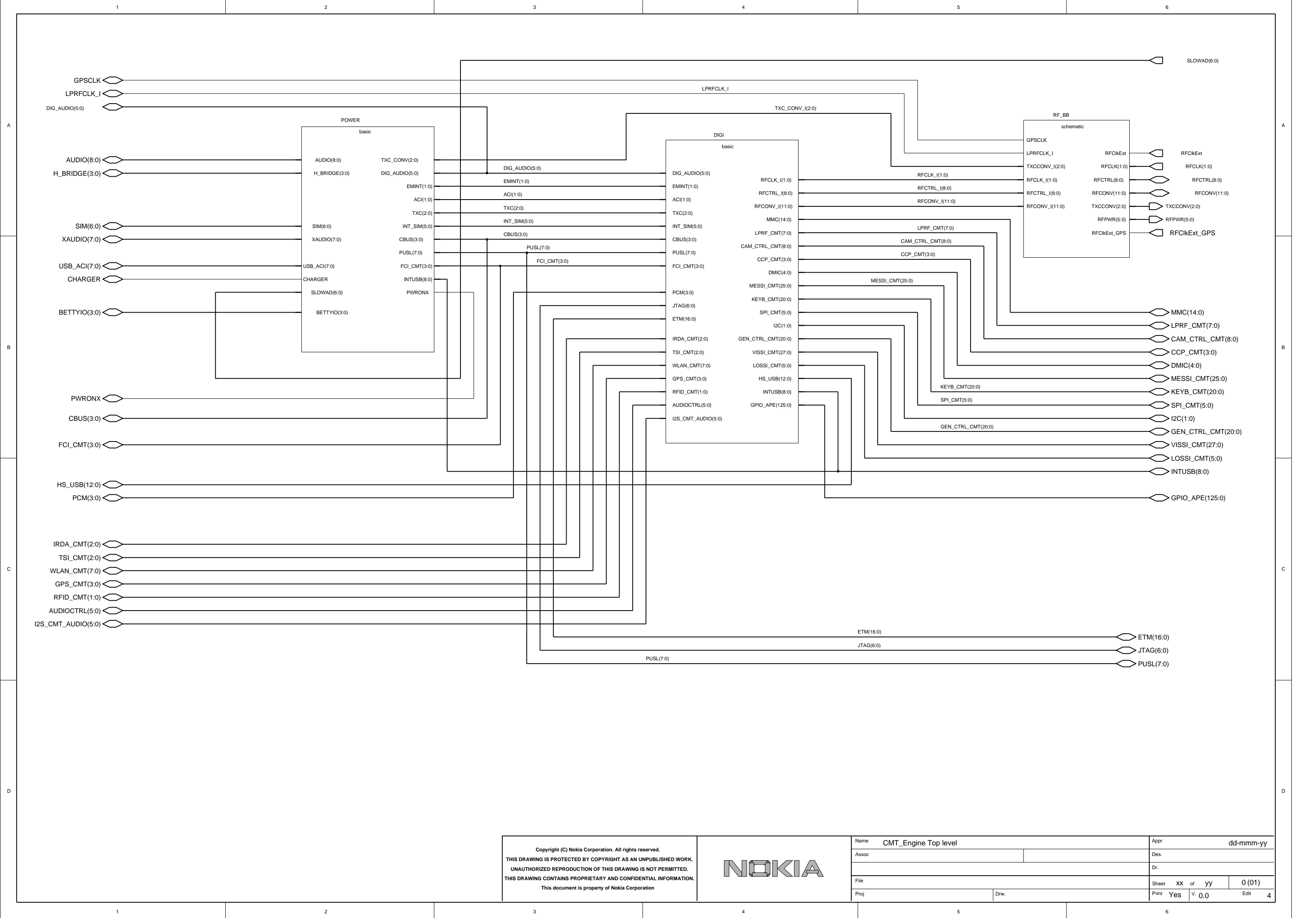
Yes

V.

0.0

Edit

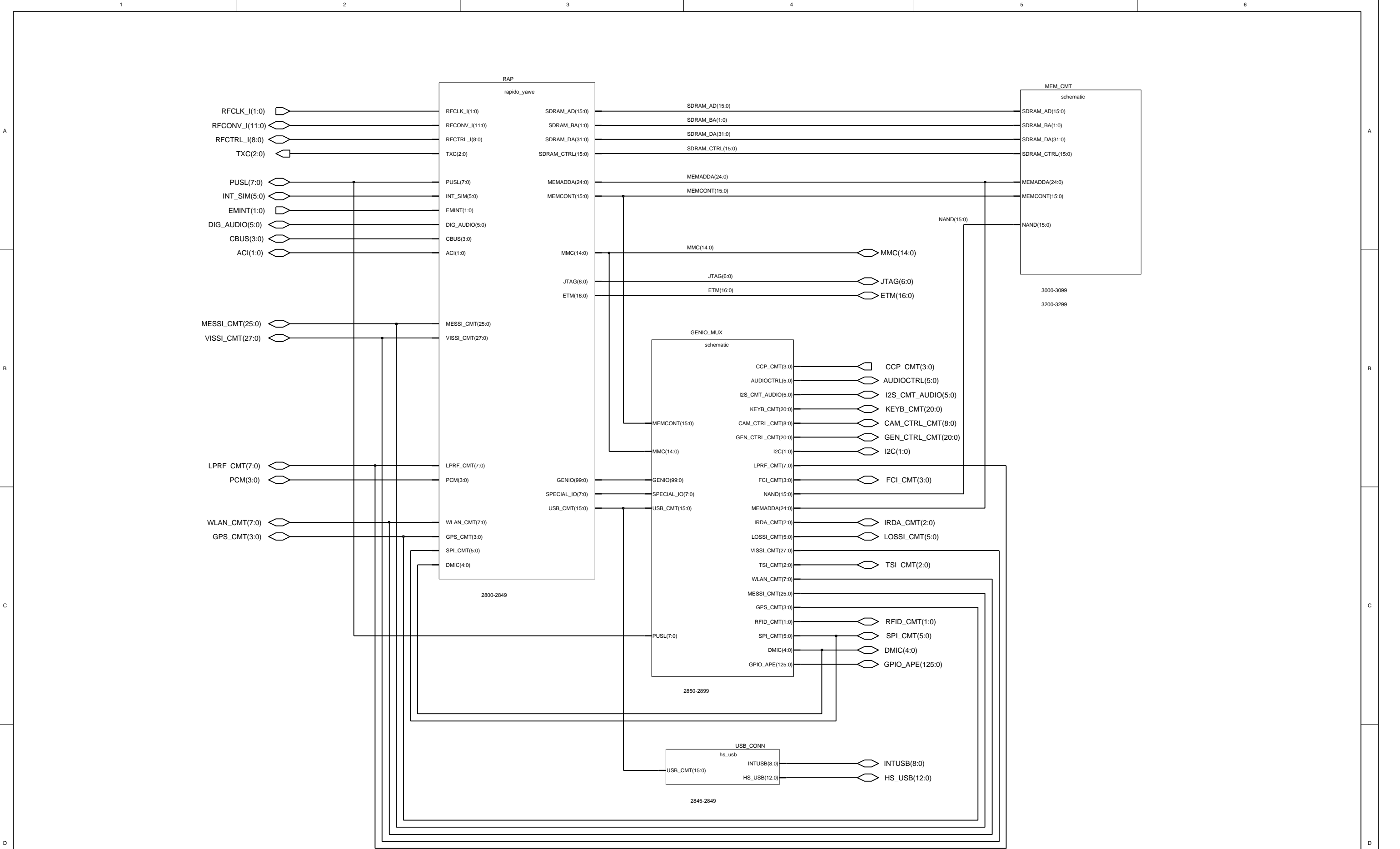
6



Copyright (C) Nokia Corporation. All rights reserved.
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.
This document is property of Nokia Corporation



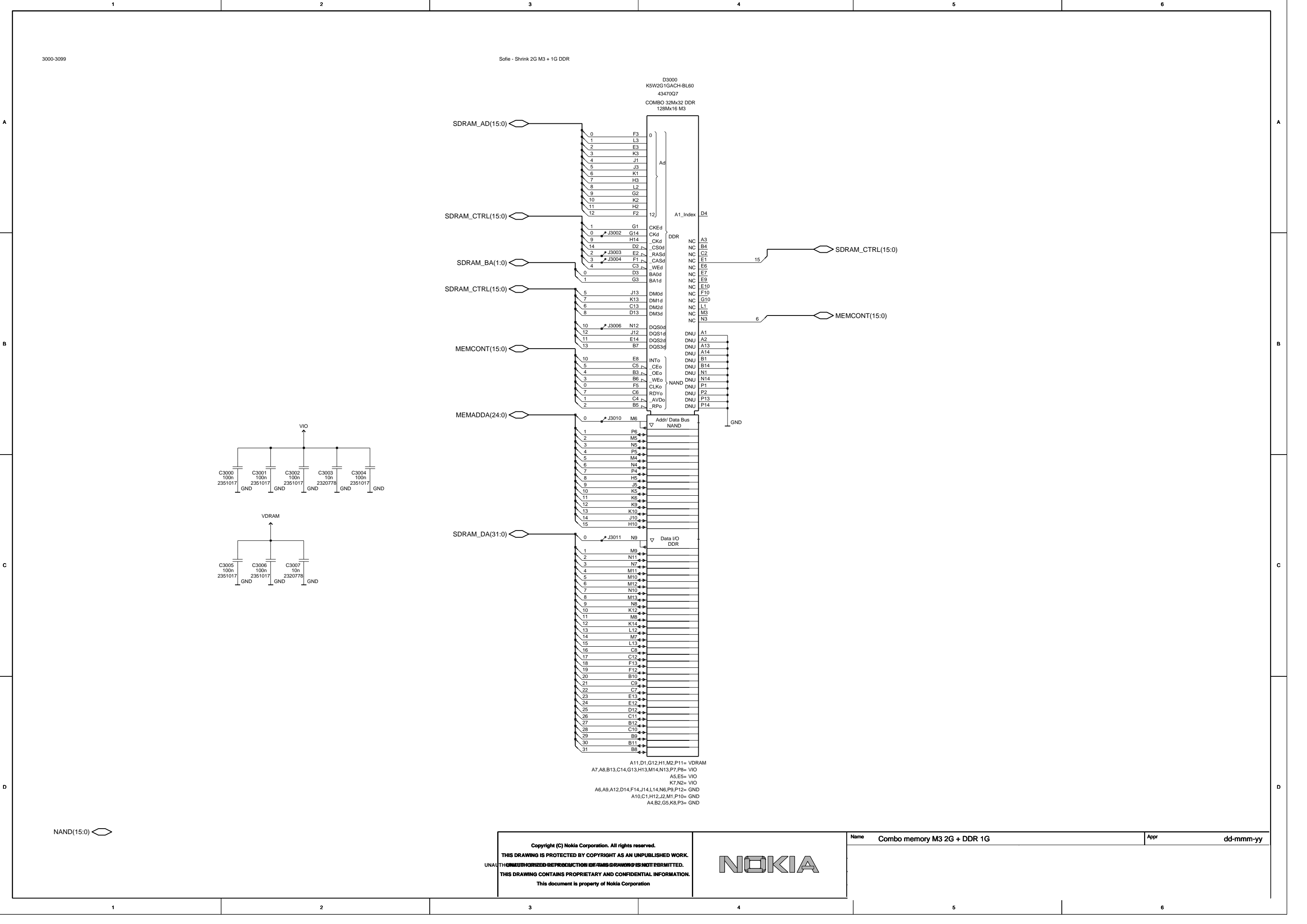
Name CMT_Engine Top level		Appr dd-mmm-yy	
Assoc		Des.	
		Dr.	
File		Sheet xx of yy	0 (01)
Proj	Drw.	Print Yes	Yes V. 0.0 Edit 4



Copyright (C) Nokia Corporation. All rights reserved.
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.
This document is property of Nokia Corporation



Name CMT SUBSYSTEM		Appr dd-mmm-yy	
Assoc		Des.	
		Dr.	
File		Sheet XX of yy	0 (01)
Proj	Drw.	Print Yes	v. 0 Edit 4



2845-2849

A

A

B

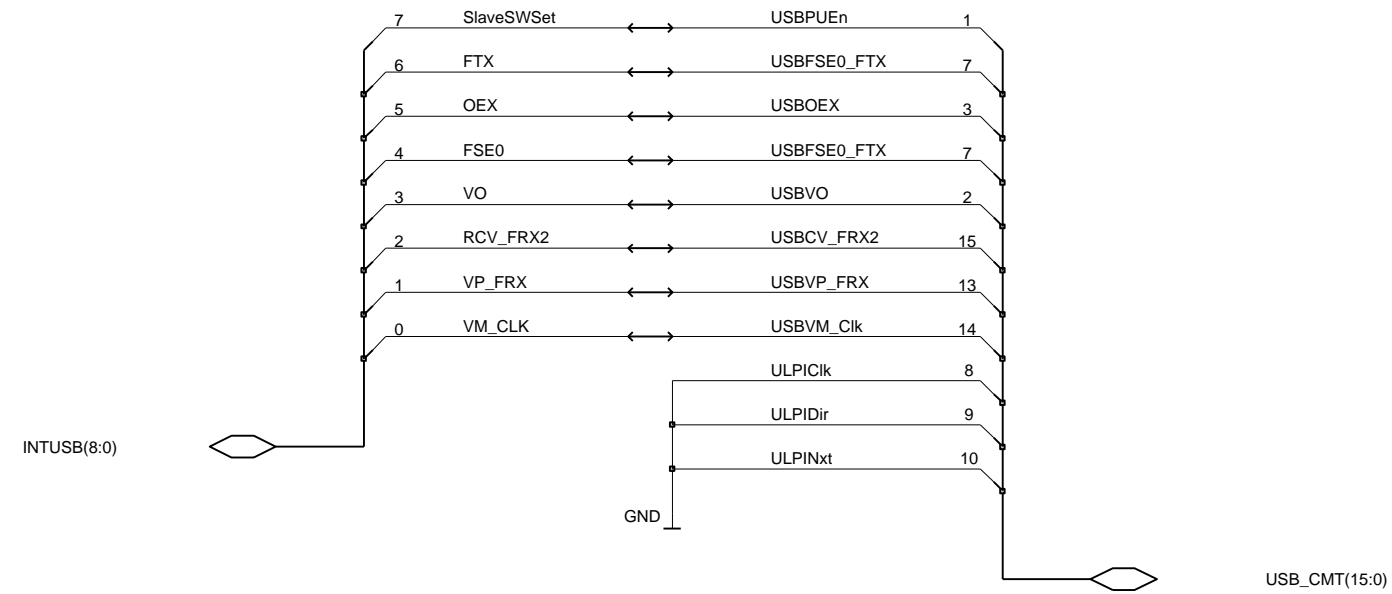
3

C

c

D

0



HS_USB(12:0)

1

2

3

4

5

6

Copyright (C) Nokia Corporation. All rights reserved.
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.
This document is property of Nokia Corporation



Name		USB		Appr		dd-mmm-yy	
Assoc				Des.			
				Dr.			
File				Sheet xx of yy		0 (01)	
Proj		Drw.		Print Yes		V. 0.0 Edit 5	

A

A

B

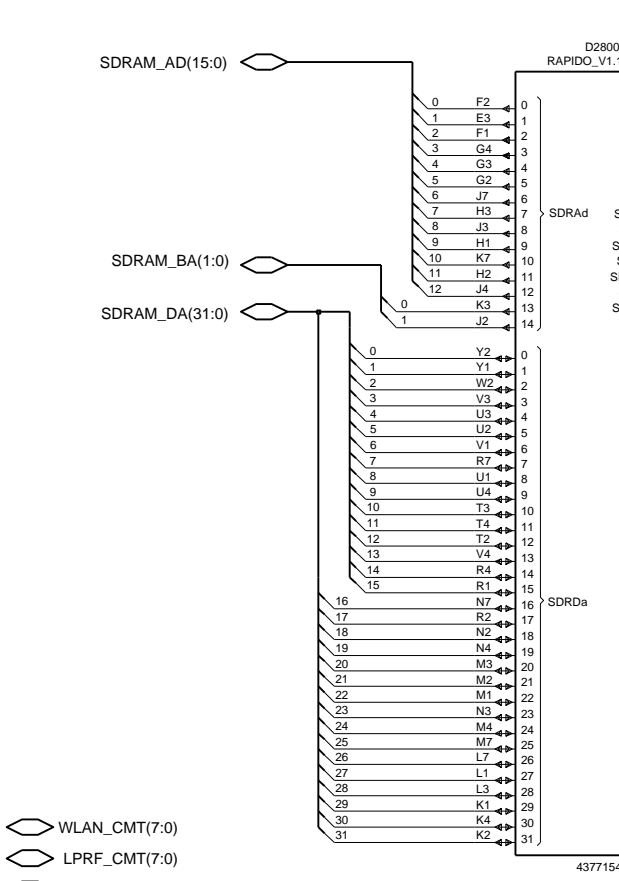
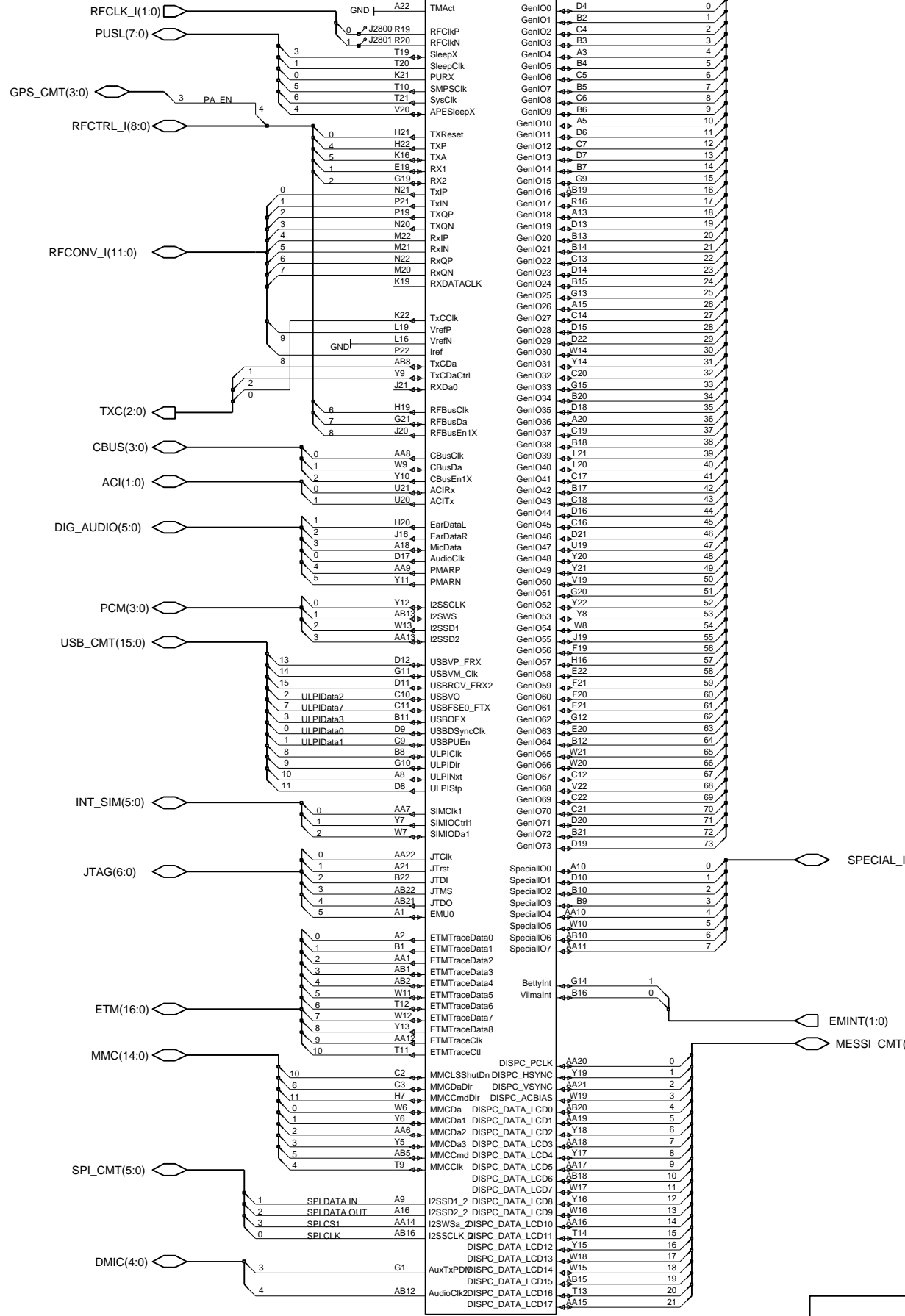
B

C

C

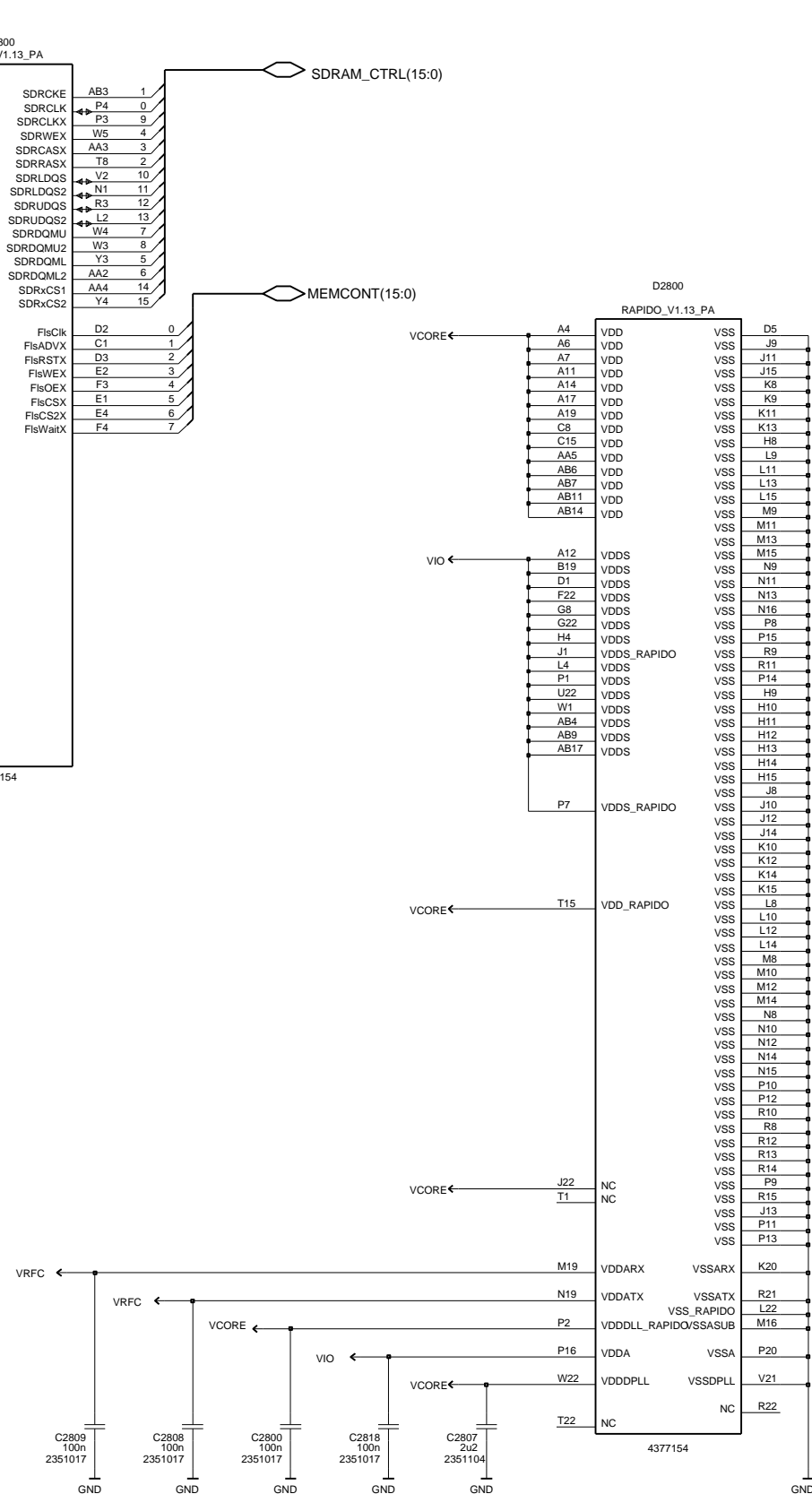
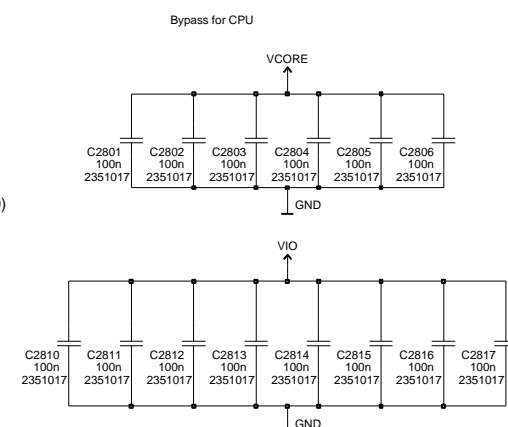
D

D



- WLAN_CMT(7:0)
- LPRF_CMT(7:0)
- MEMADDA(24:0)
- VISSI_CMT(27:0)

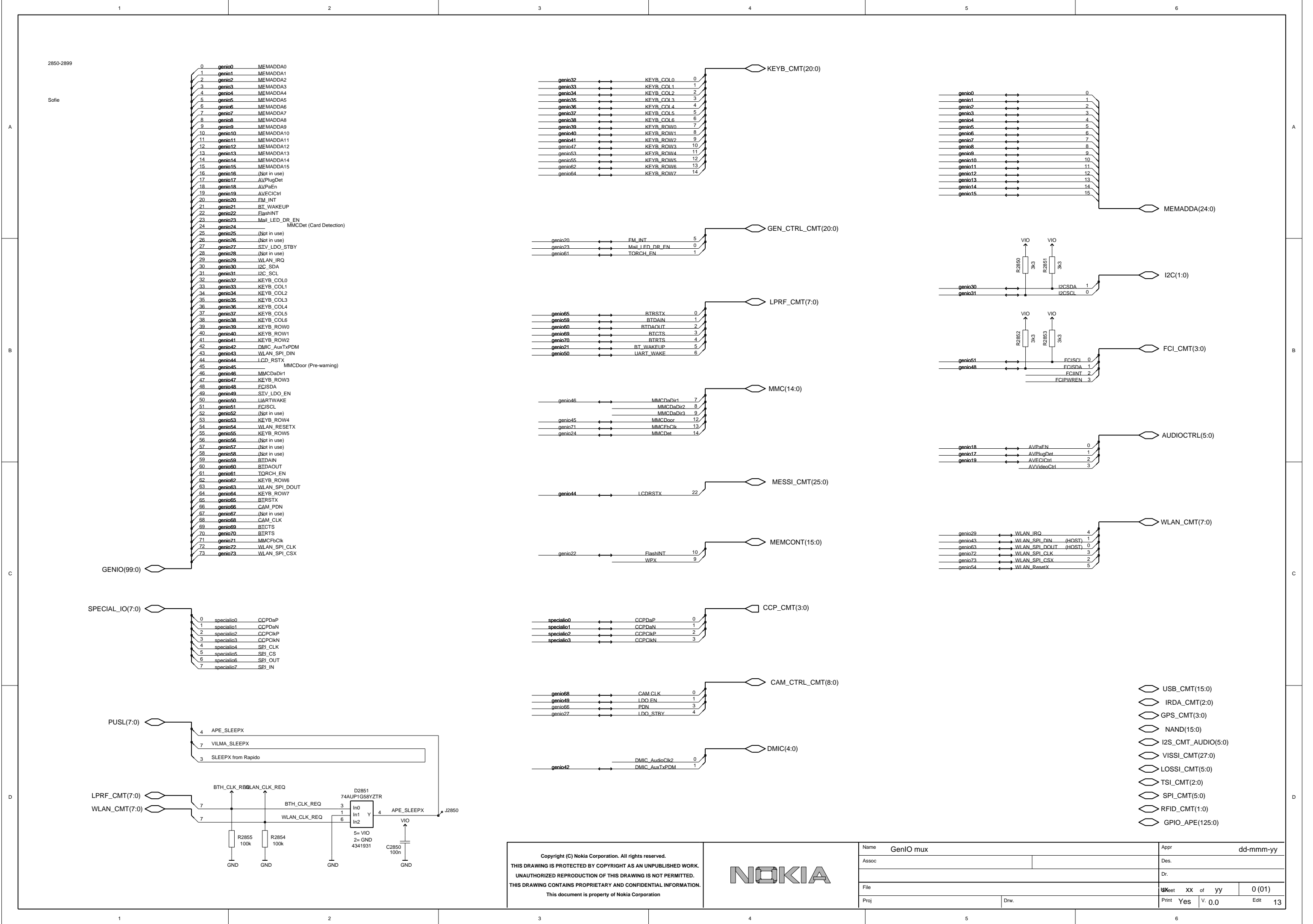
4377154



Copyright (C) Nokia Corporation. All rights reserved.
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.
This document is property of Nokia Corporation



Name	RAPIDO		Appr	dd-mmm-yy	
Assoc			Des.		
File			Dr.		
Proj			Sheet	xx of yy	0 (01)
Proj			Print	Yes	0.0
Proj			Drw.		
Proj			Edit	7	



A

B

C

D

1

2

3

4

5

6

A

B

C

D

CBB5X

TOP SHEET

RFCLK_I(1:0)

RFCLK(1:0)

LPRFCLK_I

RFClkExt

GPSCLK

RFClkExt_GPS

RFCONV_I(11:0)

RFCONV(11:0)

RFCTRL_I(8:0)

RFCTRL(8:0)

TXCCONV_I(2:0)

TXCCONV(2:0)

VBAT

VRCP1

VR1

VREF

0

1

3

4

RFPIWR(5:0)

Copyright (C) Nokia Corporation. All rights reserved.
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.
This document is property of Nokia Corporation

NOKIA

Name	RF IF		Appr	dd-mmm-yy	
Assoc			Des.		
File			Dr.		
Proj			Sheet	xx of yy	0 (01)
			Print	Yes v. 0	Edit 5

1

2

3

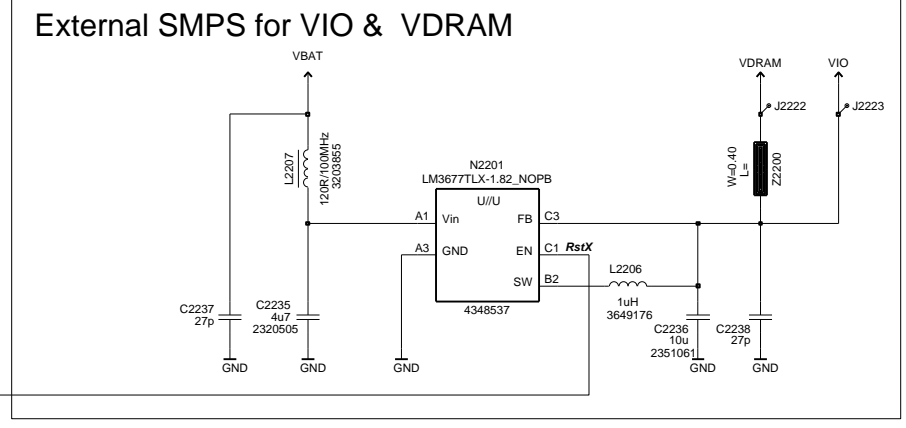
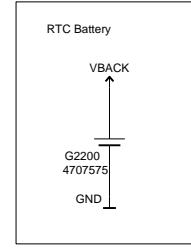
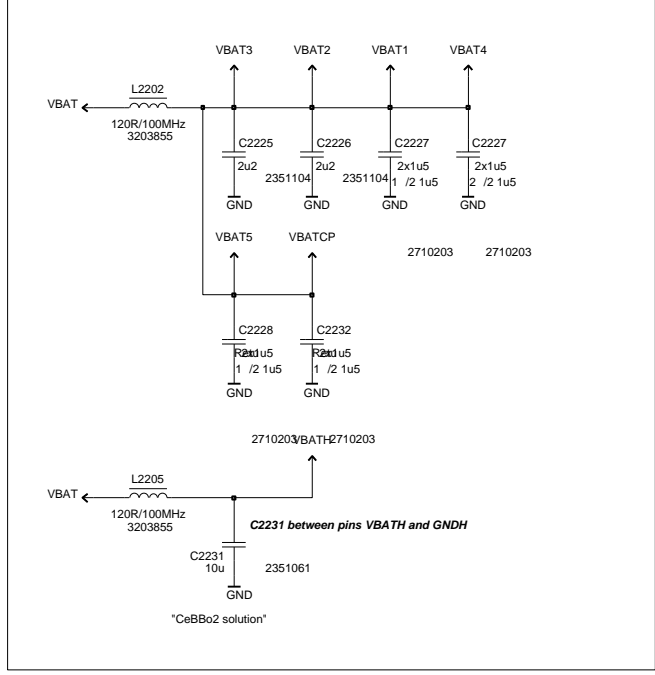
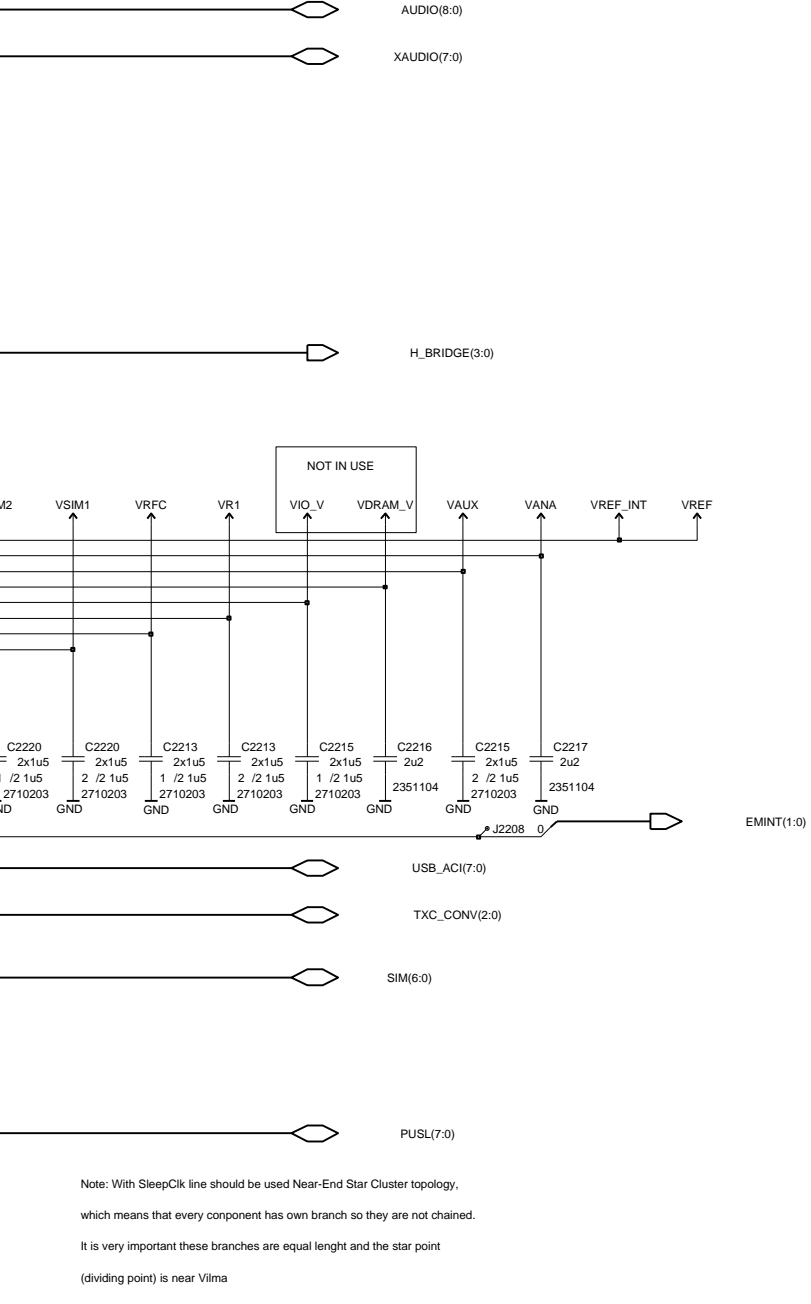
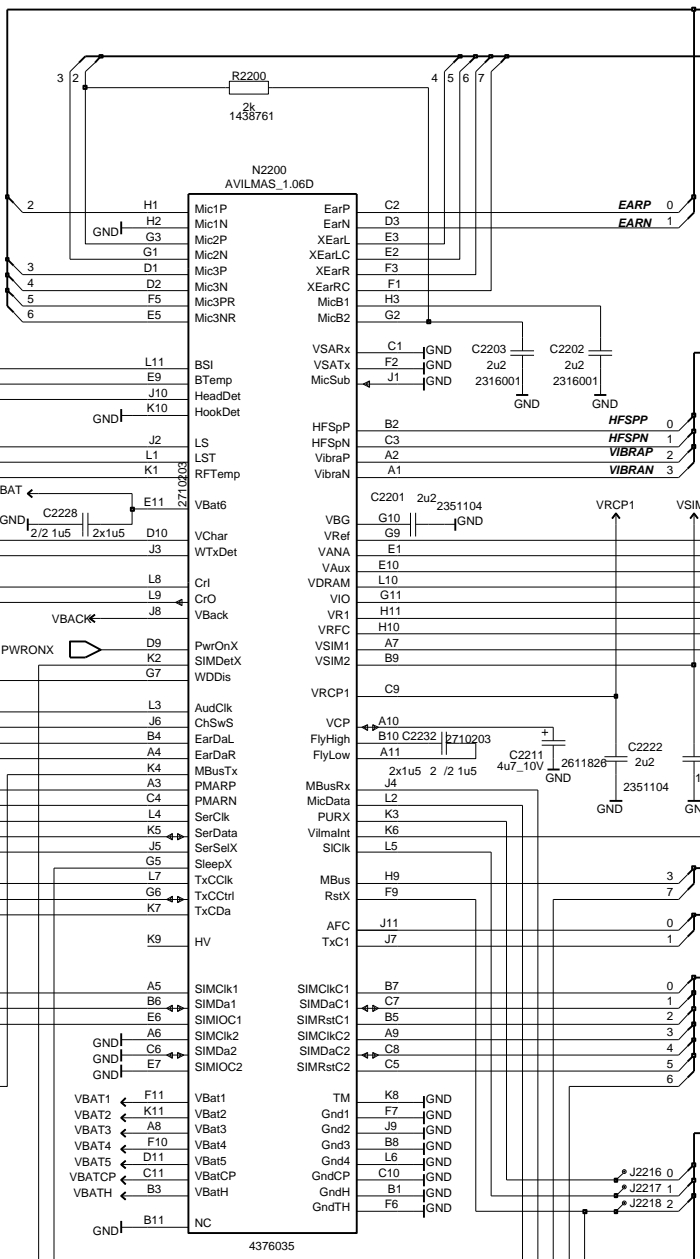
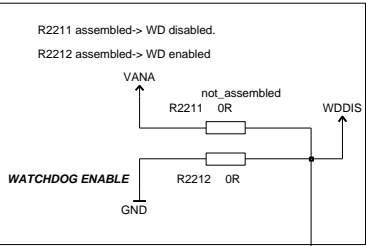
4

5

6

2200-2299

In Wing version, R2211 & R2212 not assembled

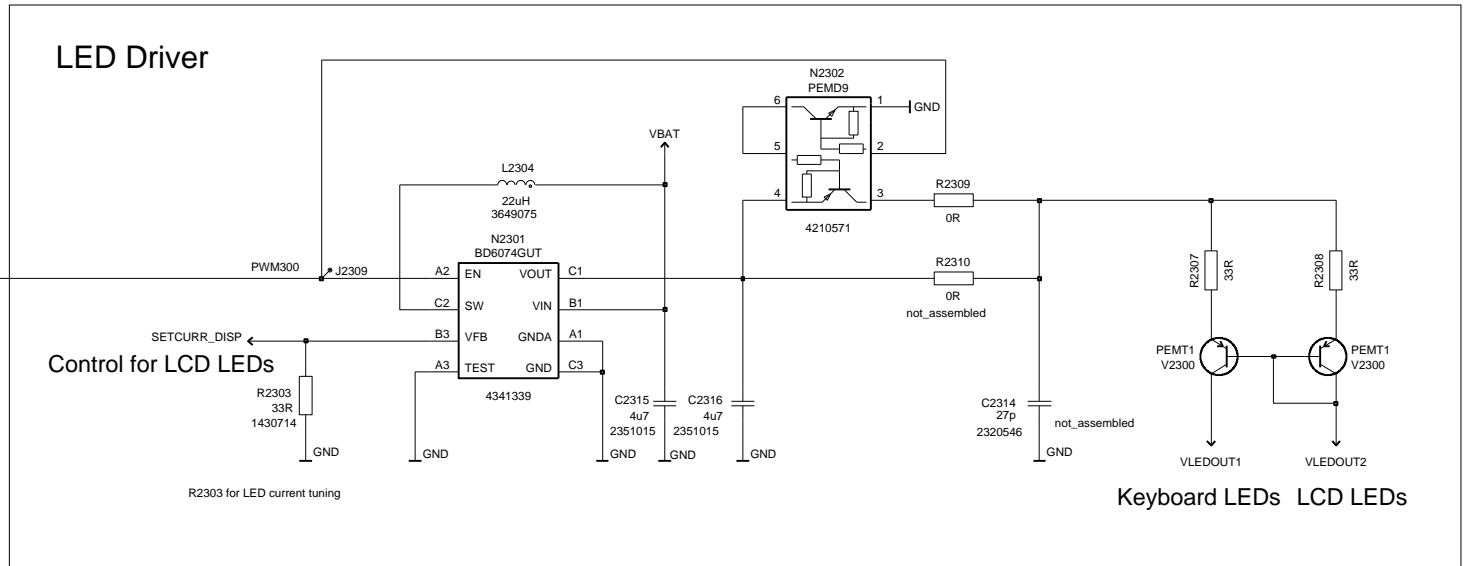
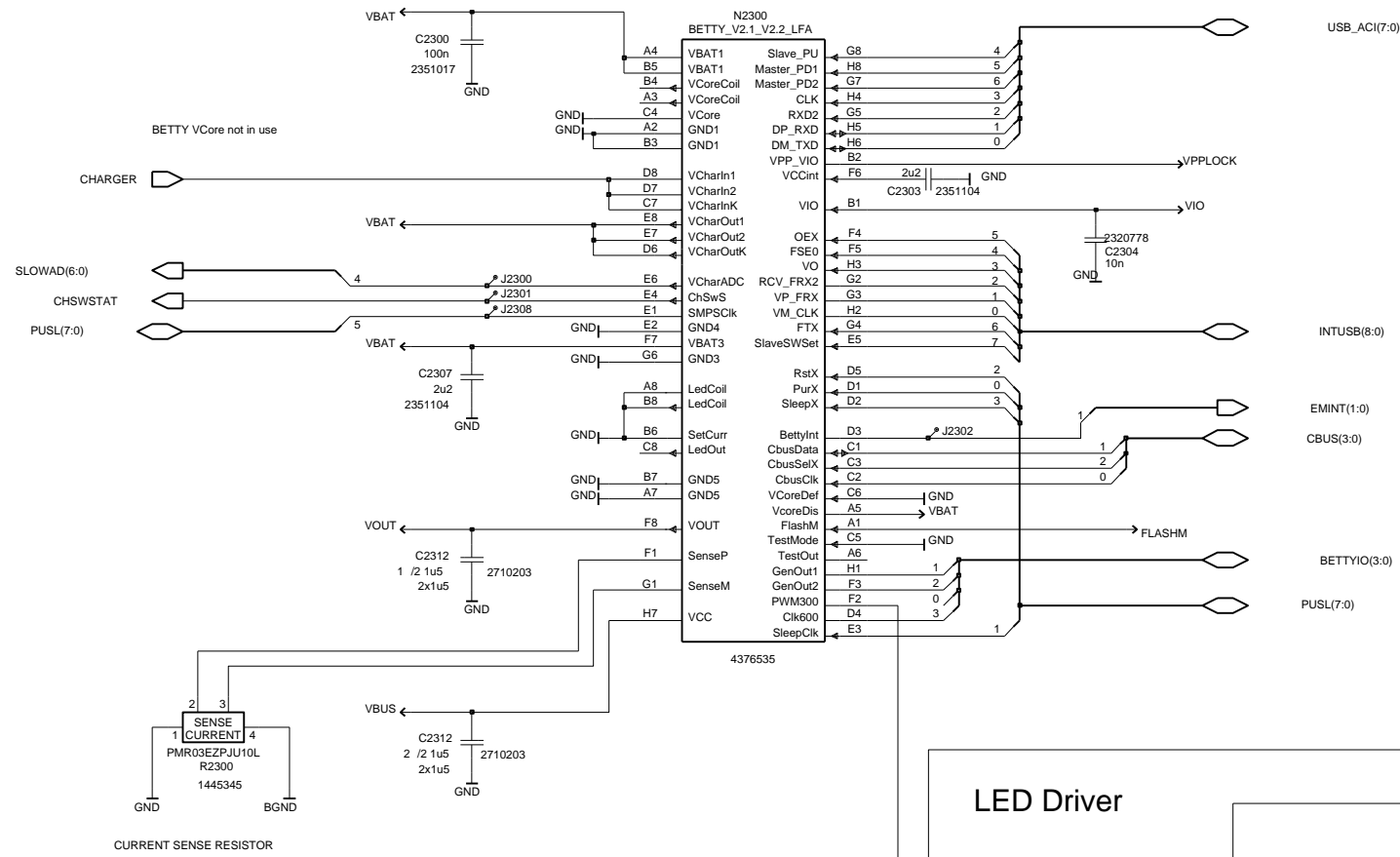


Copyright (C) Nokia Corporation. All rights reserved.
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.
This document is property of Nokia Corporation



Name	AVILMA + External Vio SMPS	Appr	dd-mmm-yy
Assoc		Des.	
File		Dr.	
Proj		Sheet	xx of yy
		Print	Yes
		V.	0.0
		Edit	11

BETTY



Copyright (C) Nokia Corporation. All rights reserved.
THIS DRAWING IS PROTECTED BY COPYRIGHT AS AN UNPUBLISHED WORK.
UNAUTHORIZED REPRODUCTION OF THIS DRAWING IS NOT PERMITTED.
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION.
This document is property of Nokia Corporation

NOKIA

Name	Betty		Appr	10-Aug-00	
Assoc			Des.		
File			Dr.		
Proj			Sheet	XX of yy	1 (01)
Proj			Print	Yes	9
Proj			Drw.	V.	Edit

