FCC PART 15 Subpart C

EUT Schematics & Block Diagram

FOR

LG Information & Communications, Ltd.

LG Kangseo B/D, 36, Munlae-Dong, 6-Ga,
Youngdungpo-Gu, Seoul, 150-096, Korea

FCC ID: FFMGT8110

March 4, 2000

This Report Concerns:	**Equipment Type:**
☒ Original Report	Digital Spread Spectrum Cordless Phone – Household Appliances

Test Engineer:	Thomas Huang / John Chan
Test Date:	February 24, 2000
Reviewed By:	John Y. Chan – Engineering Manager
Prepared By:	Bay Area Compliance Laboratory Corporation 230 Commercial Street, Suite 2 Sunnyvale, CA 94086 (408) 732-9162

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1 - GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

The *LG Information & Communications, Ltd.*, FCC ID *FFMGT8110 or the* "EUT" as referred to in this report is a Digital Spread Spectrum Cordless Phone which has 20 channel possible in the 904-926 MHz Bandwidth, and the transmission range up to 1 Km in open sight (longer range than analog 900MHz cordless phone).

The EUT was composed of two parts: one is the handset which measures 9" L x 2.125" W x 1.675" H, the other is the base which measures 7" L x 5.5" W x 2.25" H.

1.2 Objective

This type approval report is prepared on behalf of *LG Information & Communications, Ltd.* in accordance with Part 2, Subpart J, Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to demonstrate compliance with FCC rules for Output Power, 6 dB Bandwidth, Power Density, Band Edge, Spurious Emission, Processing Gain, Antenna Gain, and Conducted and Radiated Emission.

1.3 Related Submittal(s)/Grant(s)

No Related Submittals

1.4 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4 –1992, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratory, Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

1.5 Test Facility

The Open Area Test site used by Bay Area Compliance Laboratory Corporation to collect radiated and conducted emission measurement data is located in the back parking lot of the building at 230 Commercial Street, Suite 2, Sunnyvale, California, USA.

Test sites at Bay Area Compliance Laboratory Corporation has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports has been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997 and Article 8 of the VCCI regulations on December 25, 1997. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-1992.

The Federal Communications Commission and Voluntary Control Council for Interference has the reports on file and is listed under FCC file 31040/SIT 1300F2 and VCCI Registration No.: C-674 and R-657. The test sites has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratory Corporation is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (NVLAP). The scope of the accreditation covers the FCC Method - 47 CFR Part 15 - Digital Devices, IEC/CISPR 22: 1993, and AS/NZS 3548: Electromagnetic Interference - Limits and Methods of Measurement of Information Technology Equipment test methods under NVLAP Lab Code 200167-0.

1.6 Test Equipment List

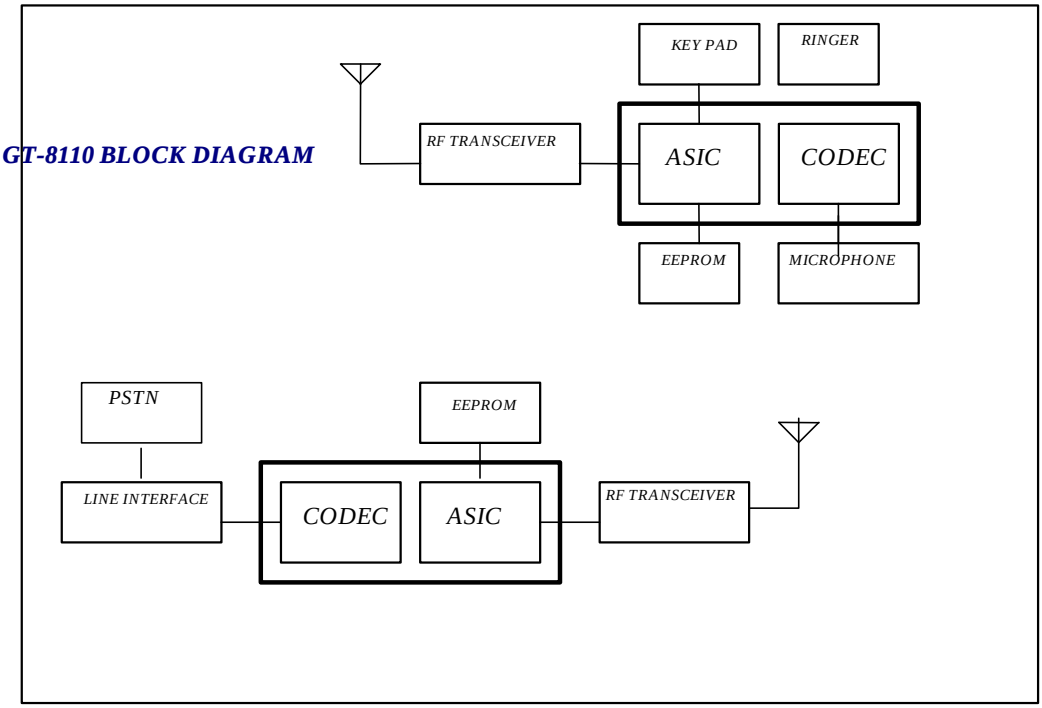
Manufacturer	Description	Model	Serial Number	Cal. Due Data
HP	Spectrum Analyzer	8566B	2610A02165	12/6/00
HP	Spectrum Analyzer	8593B	2919A00242	12/20/00
HP	Amplifier	8349B	2644A02662	12/20/00
HP	Quasi-Peak Adapter	85650A	917059	12/6/00
HP	Amplifier	8447E	1937A01046	12/6/00
A.H. System	Horn Antenna	SAS0200/571	261	12/27/00
Com-Power	Log Periodic Antenna	AL-100	16005	11/2/00
Com-Power	Biconical Antenna	AB-100	14012	11/2/00
Solar Electronics	LISN	8012-50-R-24-BNC	968447	12/28/00
Com-Power	LISN	LI-200	12208	12/20/00
Com-Power	LISN	LI-200	12005	12/20/00
BACL	Data Entry Software	DES1	0001	12/20/00
Rohde & Schwarz	Signal Generator	SMIQ03B	1125.5555.03	7/10/2002
Rohde & Schwarz	I/Q Modulation Generator	AMIQ	1110.2003.02	8/10/2002

1.7 Equipment Under Test (EUT)

Manufacturer	Description	Model	Serial Number	FCC ID
LG Information & Communications, Ltd.	Handset	GT-8110	None	FFMGT8110
LG Information & Communications, Ltd.	Base	GT-8110	None	FFMGT8110

Appendix A – EUT BLOCK DIAGRAM

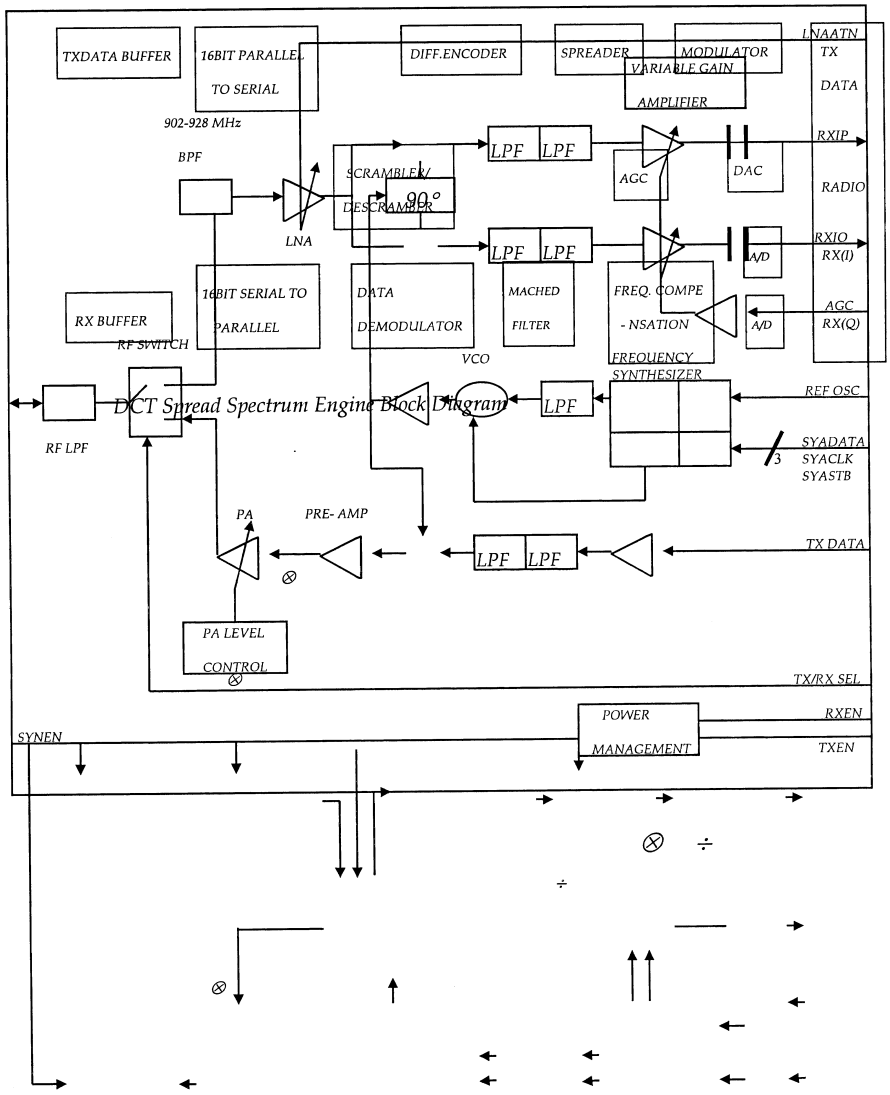
GT-8110 BLOCK DIAGRAM



GT-8110 system Architecture

900MHz DIGITAL SPREAD SPECTRUM CORDLESS TELEPHONE

MODEL : GT-8110



LGIC

RF Block Diagram

CIRCUIT DESCRIPTION

BASESET

✒ The signal which inputted in TEL-LINE is DC coupled at TR and transformed Analog into Digital at U201.
DATA which is transformed into Digital signal is mixed with PN code at U201(by spread spectrum) and transmitted to RF part.
Spreading signal which inputted to RF part is mixed with Carrier supplied to VCO at U1 and create TX frequency of using channel and then is transmitted to ANTENNA through U3 by TX control of D1,D2.

✒ The signal received to antenna is transmitted to U1 by RX/TX control time.
The signal inputted at U1 is mixed Carrier of VCO and got to direct conversion and create Base band signal.
And then, create I and Q signal by demodulation (QPSK : Quadrature Phase Shift Keying method is phase-shifted by 90°)
I and Q signal (The Phase difference of Two signal is 90°) is transmitted to U201 and mixed with PN code and generated Digital signal.
Digital signal is transformed into Analog at U201.
This audio signal is passed through U201 and transmitted to TEL-LINE.

✒ **ID setting :** when handset is placed on baseunit , charge data is transmitted to handset by Charger terminal of baseunit.
The handset is received ID and transmitted ACK signal to RF PART.

✒ X100 is X-tal generating RF - reference signal and should be adjusted

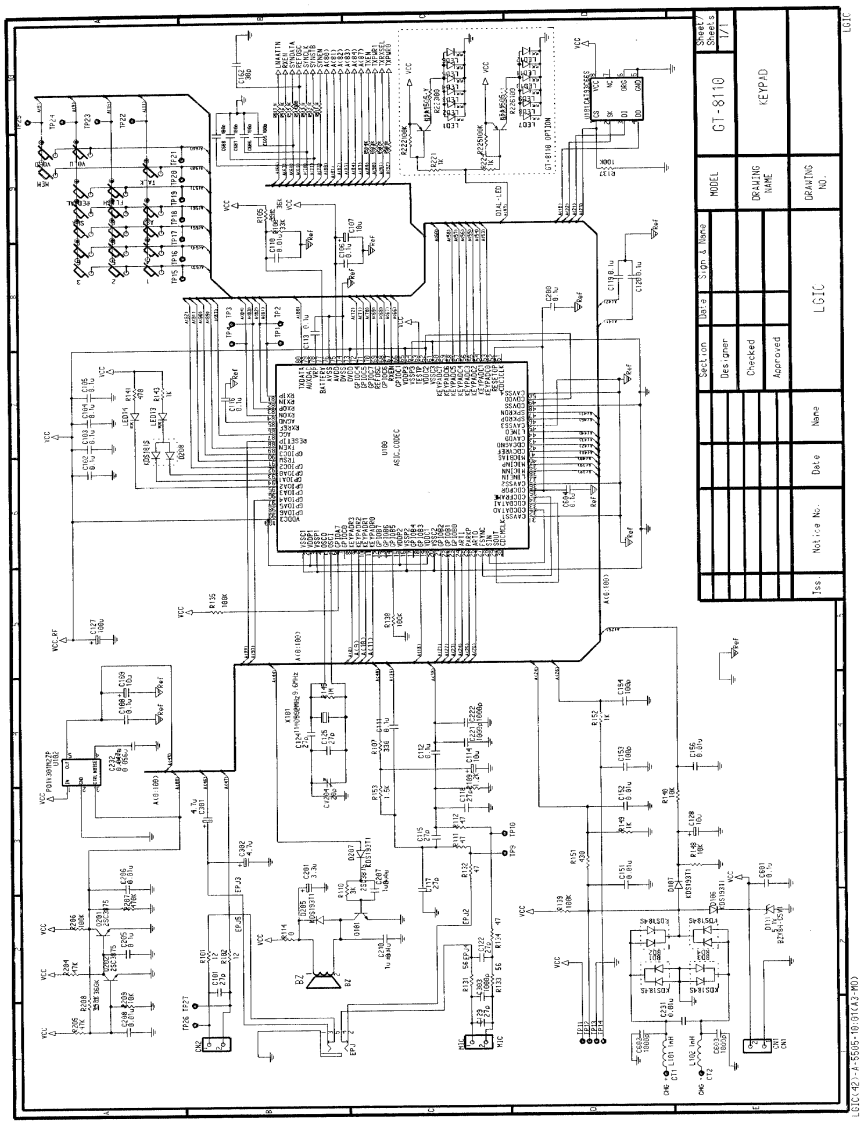
✒ Q101,Q102,Q104 is charge detector and ID detector circuitry.

HANDSET

✒ The signal which is inputted to MIKE is transformed Analog into Digital at U100.
DATA which is transformed into Digital signal is mixed with PN code at U100 (by spread spectrum) and transmitted to RF part.
Spreading signal which inputted to RF part is mixed with Carrier supplied to VCO at U1 and create TX frequency of using channel and then is transmitted to ANTENNA through U3 by TX control of D1,D2

✒ The signal received to antenna is transmitted to U100 by RX/TX control time.
The signal inputted at U1 is mixed Carrier of VCO and got to direct conversion and create Base band signal.
And then, create I and Q signal by demodulation (QPSK : Quadrature Phase Shift Keying method is phase-shifted by 90°)
I and Q signal (Two signal phase is 90°) is transmitted to U100 and remixed with PN code and generated Digital signal.
Digital signal is transformed into Analog at U100.
This audio signal is passed through RECEIVER and transmitted.

✒ X101 is X-tal generating RF - reference signal and should be adjusted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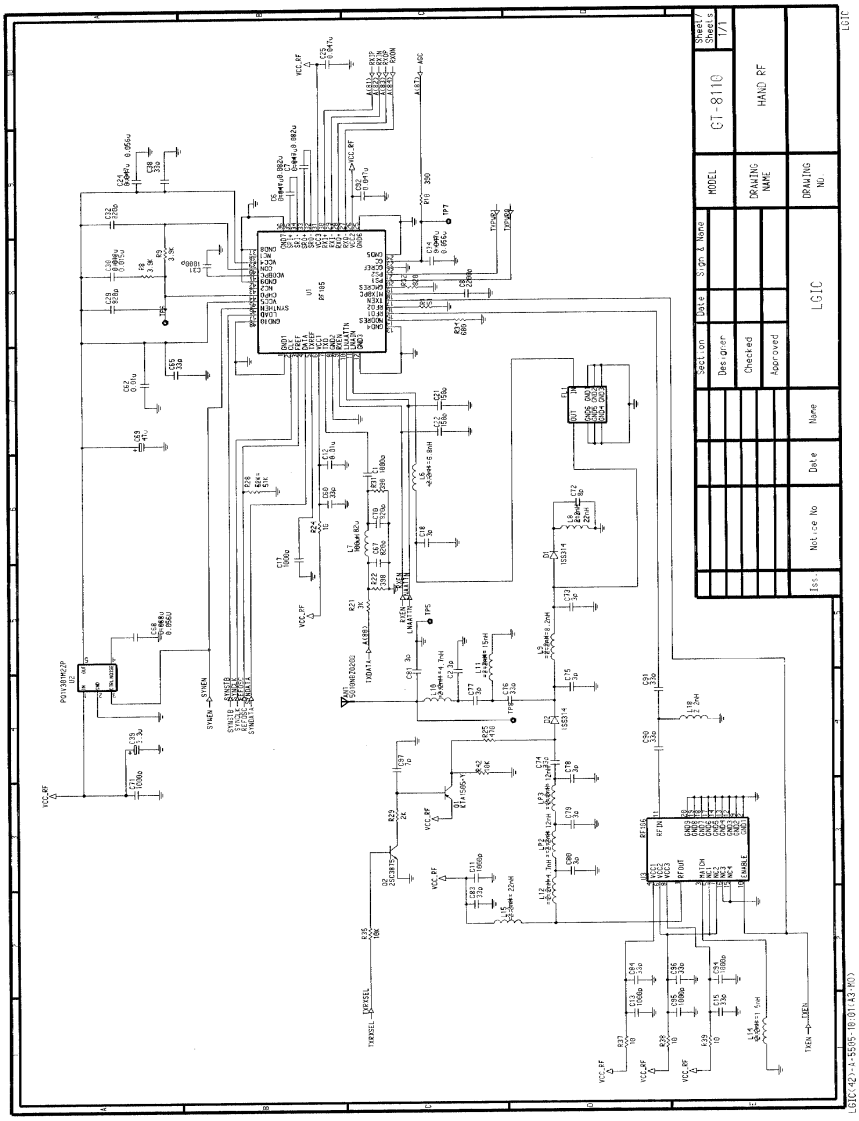

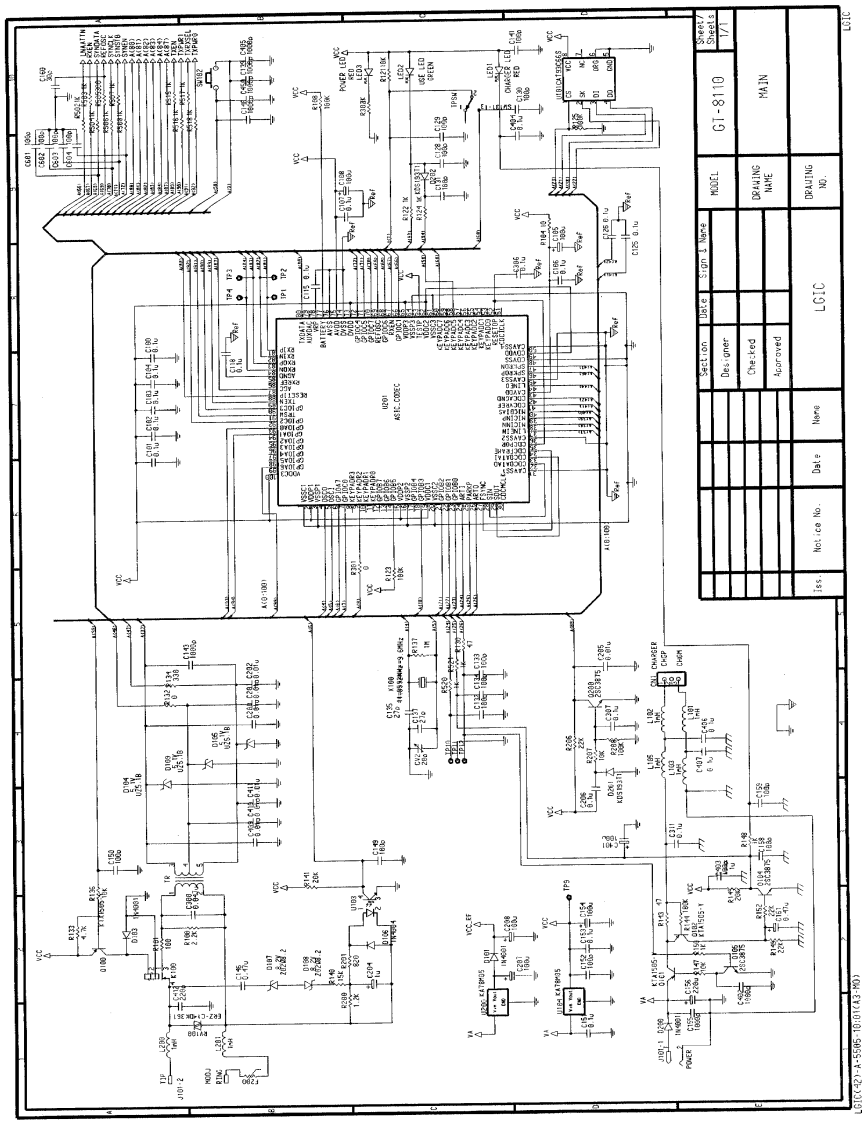
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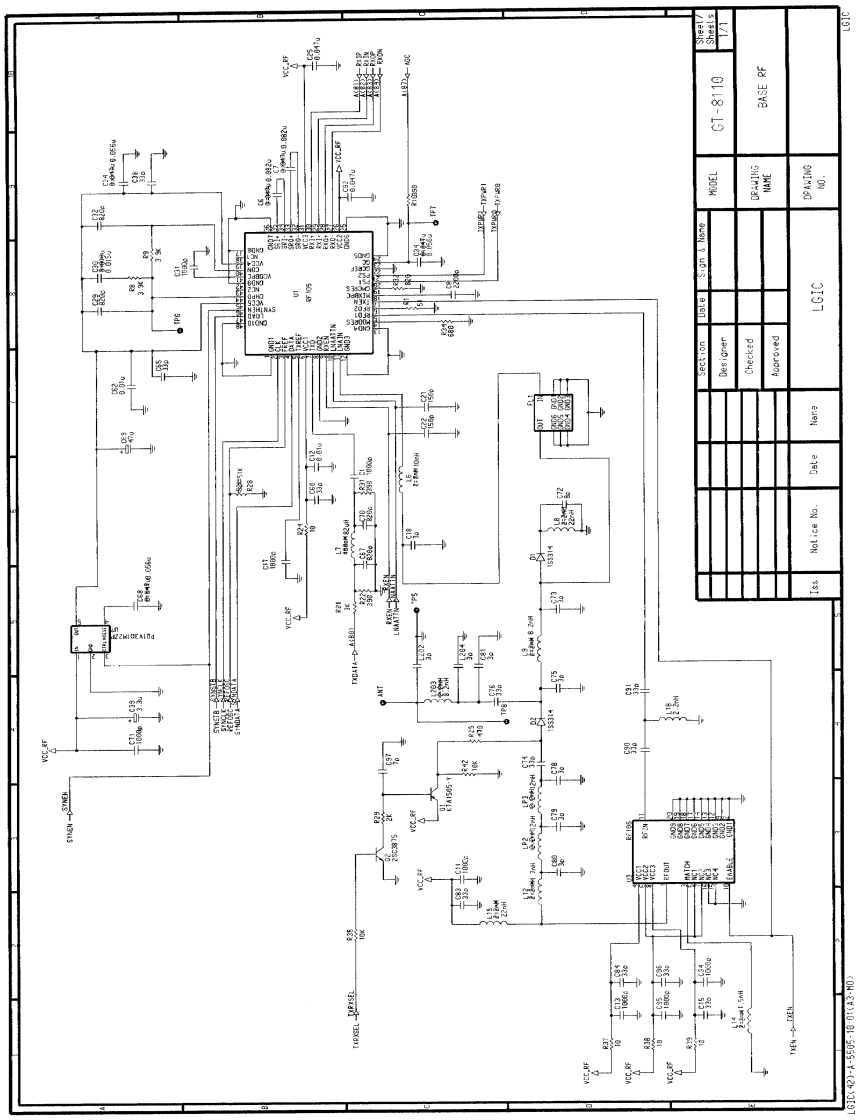
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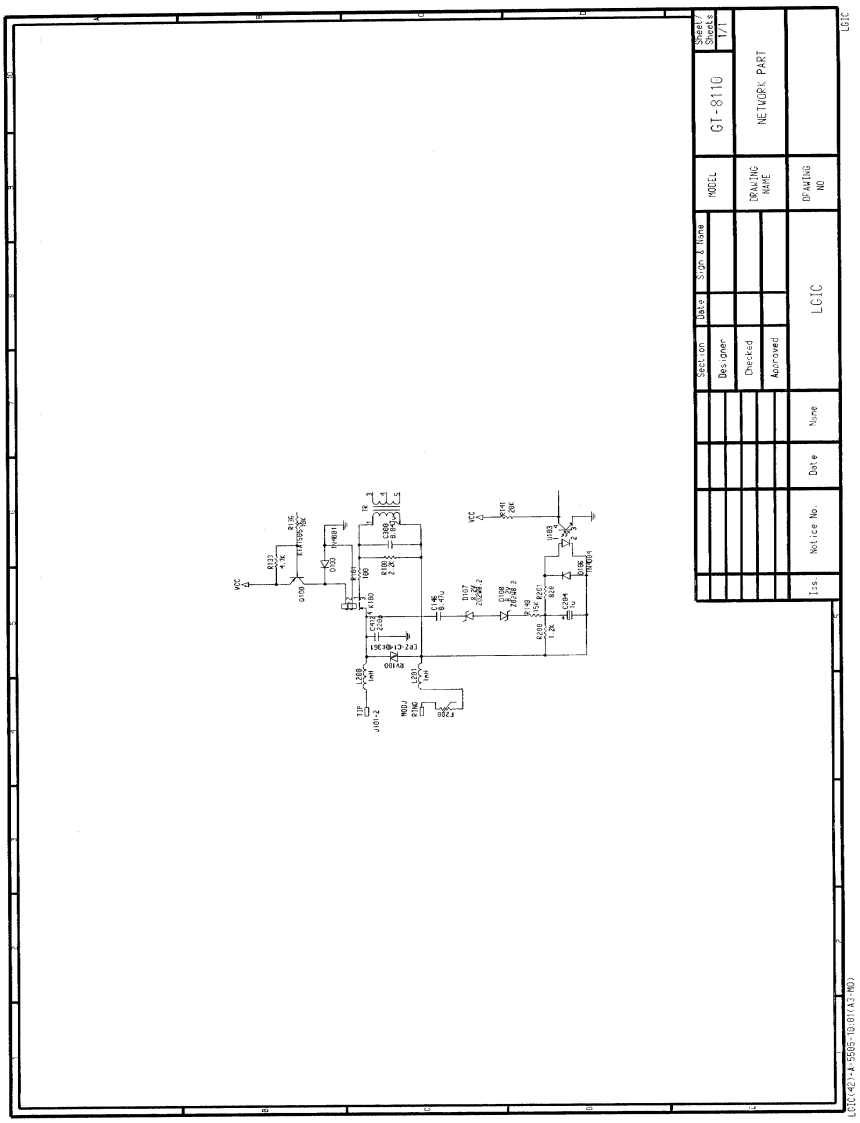
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Appendix B – agent authorization letter

LGIC
LG Information & Communications, Ltd.

LG Kangseo B/D 36, Munlae-Dong, 6-Ga,
Youngdungpo-Gu, Seoul, 150-096, Korea
Youngdungpo P.O Box101, Seoul, Korea
Telephone : 82-2-2630-3651~2
Fax : 82-2-2630-3669

Exhibit B

AUTHORITY TO ACT AS AGENT TO THE FEDERAL COMMUNICATIONS COMMISSION

Date : February 21, 2000

Federal Communications Commission
Authorization and Evaluation Division
Equipment Authorization Branch
7435 Oakland Mills Road
Columbia, MID 21046 U.S.A.

Dear Sir:

We, the undersigned, hereby authorize Bay Area Compliance Laboratory Corp. to act on our behalf in all matters relating to applications for approval of Telecommunication apparatus, including the signing of all documents relating to this matters.
Any and all acts carried out by Bay Area Compliance Laboratory Corp., on our behalf shall have the same effect as acts of our own.
I further appoint Bay Area Compliance Laboratory Corp., to act as agent in preparation of this application for registration of LG Information & Communications, Ltd., Model GT-8110 as Exhibit C under Part 68 of the Rules and Regulations of the Federal Communications Commission.
I certify that the exhibits properly describe the device or system for which registration is sought, that Exhibit G represents the policies of the applicant which will be followed for all units manufactured and distributed under the provisions of Part 68, that the labels described in Exhibit H will be affixed to each unit, and that the information described in Exhibit J will be provided with each unit manufactured or distributed by the applicant.
We also certify that no party to the applications authorized hereunder is subject to benefits, including FCC benefits, Pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988,21 USC 853(a).

Sincerely yours,

D. S. Kim

D.S.KIM / Quality Engineering Dept.
LG Information & Communications, Ltd.