

Access Phone
ADI Limited

FCC ID: N6FSRT7010
Model: SRT7010/Isonex3000

EXHIBIT 2

Technical Description of the Equipment
Ref.: FCC part 2 paragraph 2.983

FCC/MELLON

DEC 14 1998

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TECHNICAL DESCRIPTION OF THE EQUIPMENT

Ref.: FCC Part2 paragraph 2.983

Range of Operating Power Levels

Ref: Paragraph 2.983 (d)(3)

30 mW — 3 W

Maximum Power Rating

Ref: Paragraph 2.983 (d)(4)

3 W

DC Voltages and Currents into Final Amplifier

Ref: Paragraph 2.983 (d)(5)

DC Voltage: 13.6 V

DC Current: The dc current into the final amplifier can not be measured because that part of the circuit can not be isolated without destroying the integrity of the unit and invalidating the test results.

Function of Semiconductors and Active Circuit Devices

Ref: Paragraph 2.983 (d)(6)

Reference Designator Type Function

POWER SUPPLY

V25		Input transient suppression
V5	BZX84C18	Battery input overvoltage protection
V3	2N6507	Battery input overvoltage protection
V40	MBR51100	Snubber circuit
V41	MUR5140T3	+75V Rectifier
V43	MUR5140T3	-48V Rectifier
V44	MBR51100	-5V Rectifier
V46	MBR51100	Feedback rectifier
N12		+5V Voltage Regulator
N19	LM2577M	Switching power supply/controller

RF (TRANSMITTER)

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N2	SAS230	RF Power Control Error Amplifier
N6		RF Power Amplifier
N17	LM317	+3.3V Voltage Regulator
N16	UMA1015M	Dual PLL Synthesizer (serves TX and RX)
N9	LM317	+8V Voltage Regulator
G3		Voltage Controlled Oscillator
G4	TX0525	9.6MHz Reference Oscillator
V1	BAT545	RF Power Control Detector
V24	PDTC114ET	RF Power Amplifier Shutdown
V23	BC848B	RF Power Amplifier Shutdown
V26, V32	PDTC114ET	Control Functions
V27, V33	PDTA114ET	Control Functions

RF (RECEIVER)

V28	BC558B	Low Noise Amplifier
V30		Low Noise Amplifier
V34	BC558	Low Noise Amplifier
V36	BF984	1-st Downconverter (mixer)
V29	BF984	1-st LO Amplifier
V45	BF5505	2-nd LO
V38	BZX84C5V1	LNA +10V reference
V39	BZX84C5V1	LNA +10V reference
N15	LM317	+3.3V Voltage Regulator
N18	SA606	IF Processor (Amplifier, 1-st to 2-nd IF Converter, FM Demodulator)
G2		Voltage Controlled Oscillator

BASEBAND

D6	UMA1000LT	Modem and Data Processor
D8	74HC6323A	9.6MHz Divider for Data Processor
N3	LM317	+4.3V Voltage Regulator
N5	SA5753DK	Analog Audio Processing
N8	SA5752DK	Analog Audio Processing

LINE INTERFACE UNIT

D5	14069UB	Ring Signal Amplifier
N11	LM2904D	20Hz Low Pass Filter
N12	L3220	Line Interface Functions
N13	LM2904D	Line Interface Buffer
N14	L3092	Line Interface Functions

CONTROL - DTMF

N1	MT88L705	DTMF Decoder
V4	PDTC114ET	Driver

AMPS SRT - CONTROL - INDICATORS

V5, V8, V13, V15, V19	PDTC114ET	Indicator Drivers
V16, V18	PDTA114ET	Indicator Drivers

CONTROL - MAIN

N4	LM317	+3.3V Voltage Regulator
D3	80CL560	CPU
D4	PSD312L-25JI	EPROM
D7	14538B	Reset Delay/Powerdown Control
D1	X24C02	EPROM
D2	X24C02	EPROM
D5	14069UB	Serial Port Buffer
V10	BZX84C5V1	Serial Port Spike Protection
V14	BZX84C5V1	Serial Port Spike Protection
V17	PDTC114ET	Reset Delay
V20	BZX84C5V1	Serial Port Spike Protection
V21	BZX84C5V1	Serial Port Spike Protection
V12, V22	BC848B	Serial Port Buffer
V11	BC858B	Serial Port Buffer

Complete Circuit Diagram

Ref: Paragraph 2.983 (d)(7)

ADI Technical Manual

Instruction Book

Ref: Paragraph 2.983 (d)(8)

ADI Technical Manual

Tune-up Procedure at Nominal Operating Power

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Ref: Paragraph 2.983 (d)(9)

ADI Technical Manual

Circuitry and Devices for Determining and Stabilizing Frequency

Ref: Paragraph 2.983 (d)(10)

Means for Frequency Determination and Stabilization:

Frequency Stabilization is achieved with the Temperature Compensated Crystal Oscillator (TCXO) working as the Reference Oscillator. The output frequency is $9.6\text{MHz} \pm 2.5\text{ppm}$ over the operating temperature range. The Reference Oscillator is designated as G4 on the sheet #4 "RF (TRANSMITTER)" of the schematic diagram.

The Transmitter output frequencies are generated directly by the Frequency Synthesizer as shown on sheet # 4 of the schematic diagram.

The Receiver 1-st Local Oscillator frequencies are higher then received frequencies by 86.85MHz and are generated by the Frequency Synthesizer as shown on sheet # 5 of the schematic diagram.

Both synthesizers are using the 9.6MHz Reference Oscillator as the Frequency Reference.

Circuits for Suppression of Spurious Radiation, Limiting of Modulation, and Limiting of Power

Ref: Paragraph 2.983 (d)(11)

(i) Suppression of Spurious Radiation:

The Spurious Emissions are suppressed using appropriate shielding and filtering techniques. The antenna diplexer is used as the bandpass filter for the transmitter as shown on sheet # 4 of the schematic diagram.

(ii) Limiting of FM Deviation:

The transmitter is equipped with the system to automatically limit the frequency deviation to $\pm 12\text{kHz}$. This function is performed by software controlled specialized audio processing integrated circuits N5 and N8 as shown on sheet # 7 of the schematic diagram. These circuits also include pre-emphasis and audio filtering.

(iii) Limiting of RF Power

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The RF Output Power of the Transmitter is controlled by the circuitry shown on sheet # 4 of the schematic diagram.

The main components of the circuitry are Stripline Directional Coupler with the detector diode V1 located at the output of the RF Power Amplifier and the error amplifier N2 tied to the control input VAPC of the RF Power Amplifier.

Test Data

Ref: Paragraph: 2.983(e)

All applicable test data are provided in the section Test Results of this Engineering Report.

Equipment Identification Plate/Label

Ref: Paragraph 2.983(f)

Equipment identification label is provided in the exhibits.

Photographs of the Equipment

Ref: Paragraph 2.983(g)

Photographs of the equipment under test are provided in the exhibits.