

JBA-870 Bluetooth Module User Manual

1. Product Overview

JBA-870 Bluetooth module is a stereo music transmission product, you can wirelessly connect your mobile device, Transfer music to this product and then output to the speakers, JBA-870 Bluetooth module built-in 15W Class-D audio power amplifier, Meet the needs of high-power speaker output.

2. Features

- Support A2DP1.2 profiles
- Automatically enter pairing mode from power on and disconnect
- Best-in-class Bluetooth radio with 7dBm transmit power and -90dBm receive sensitivity
- LED Indication
- I-PEX antenna connect
- Pairing connect voice prompts
- 15W Class-D audio power amplifier

3. Applications

- Bluetooth speakers
- A2DP audio sink

4. Bluetooth Specification

NO	ITEM	SPEC
1	Standard	Bluetooth V2.1
2	Frequency	2.4~2.48 Ghz
3	Modulation Method	GFSK, 1Mbps, 0.5BT Gaussian
4	Sensitivity	-90dBm@0.1%BER
5	Transmit Power	7dBm, Class2
6	Hopping	1600hops/sec, 1MHz channel space
7	Maximum Data Rate	Asynchronous: 723.2kbps/57.6kbps
		Synchronous: 433.9kbps/433.9kbps
8	Profiles	A2DP1.2

5. Environment

NO	ITEM	SPEC
1	Operating Temperature	-20 ~ +85 °C
2	Operating Relative Humidity	10%~90% Non-Condensing
3	Storage Temperature	-60°C ~+150°C
4	Storage Relative Humidity	80% Max.

6. Electrical Specification

NO	ITEM	SPEC			
		MIN	TYP	MAX	UNIT
1	Supply Voltage	9.0	12.0	16.0	V
2	Consumption Current (@16W Output)	–	1000	1500	mA
3	Standby Current	–	8	12	mA
4	LED– Logic Level Low	–	–	0.4	V
5	LED+ Output Voltage	–	3.3	–	V

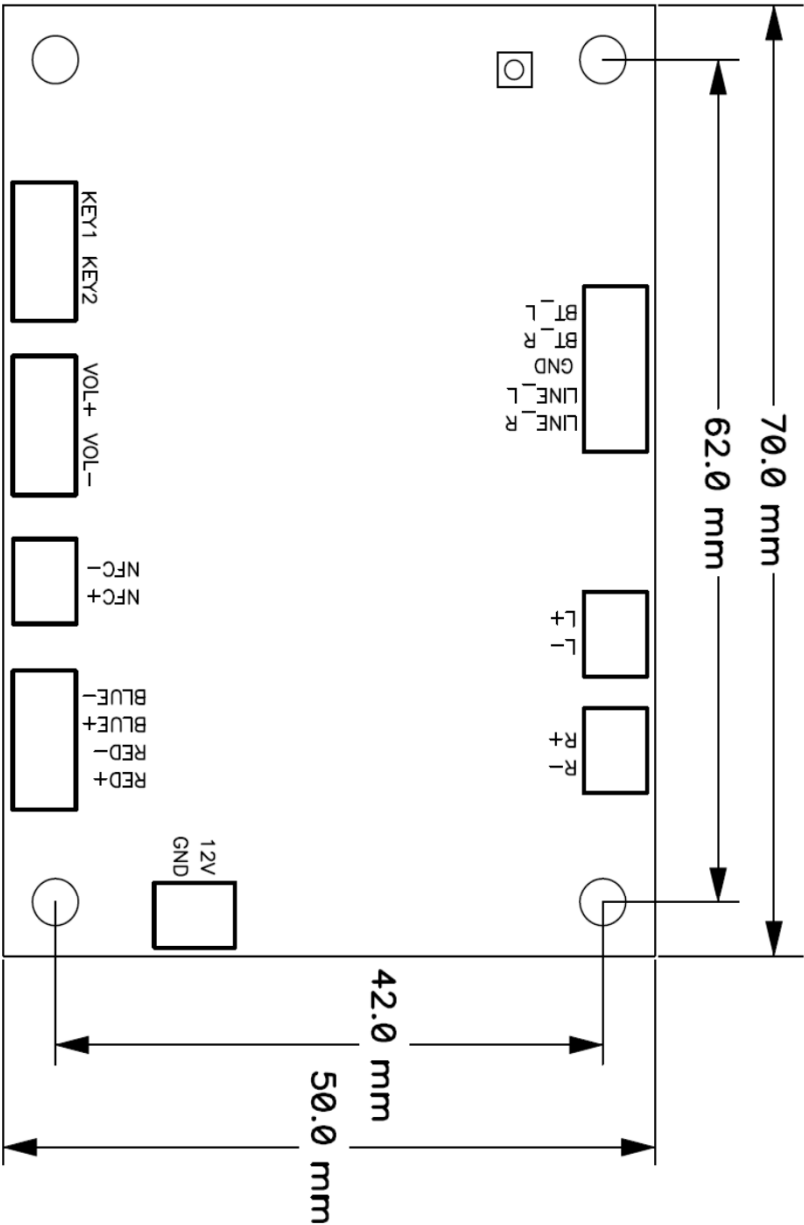
7. AC Characteristic

NO	PARAMETER	TEST CONDITIONS		SPEC			
				MIN	TYP	MAX	UNIT
1	Output power	4Ω THD=10%	16V		22		W
			12V		15		
			9V		9		
		8Ω THD=10%	16V		16		W
			12V		9		
			9V		5.5		
		4Ω THD=1%	16V		19		W
			12V		12		
			9V		7		
		8Ω THD=1%	16V		13		W
			12V		7.5		
			9V		4		
2	Output noise				–70		dBV
3	Signal-to-noise ratio	THD+N<0.5% f=1kHz			85		dB
4	Crosstalk between	V=12V, PO=1W, RL=8			–60		dB
5	Thermal trip point				145		℃
6	Thermal hysteresis				25		℃

8. Pin Definition

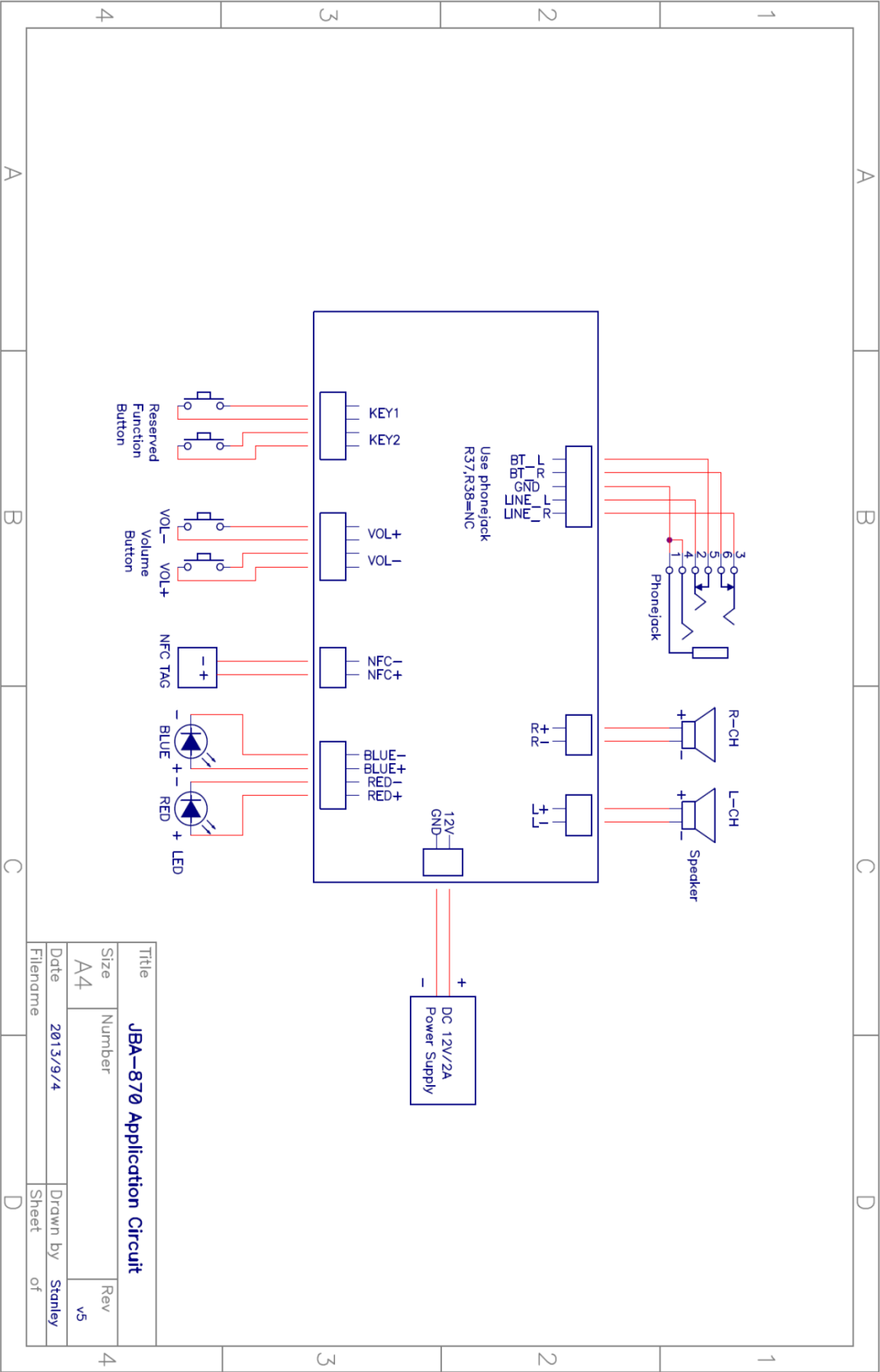
Function	Name	Type	Description
Power	12V	I	12V Positive supply Input
	GND	–	GND
LED	LED_RED+	O	Connect Red LED+
	LED_RED–	–	Connect Red LED–
	LED_BLUE+	O	Connect Blue LED+
	LED_BLUE–	–	Connect Blue LED–
Volume key	VOL+	I	Connect Volume+ Switch
	VOL–	I	Connect Volume– Switch
Function key	KEY1	I	Connect Function1 Switch
	KEY2	I	Connect Function2 Switch
NFC	NFC+	I	Connect NFC TAG+
	NFC–	I	Connect NFC TAG–
Line in	BT_L	O	Connect Phonejack
	BT_R	O	Connect Phonejack
	GND	–	GND
	LINE_L	I	Connect Phonejack
	LINE_R	I	Connect Phonejack
Audio	R+	O	R+ Output
	R–	O	R– Output
	L+	O	L+ Output
	L–	O	L– Output

9. Outline Dimension

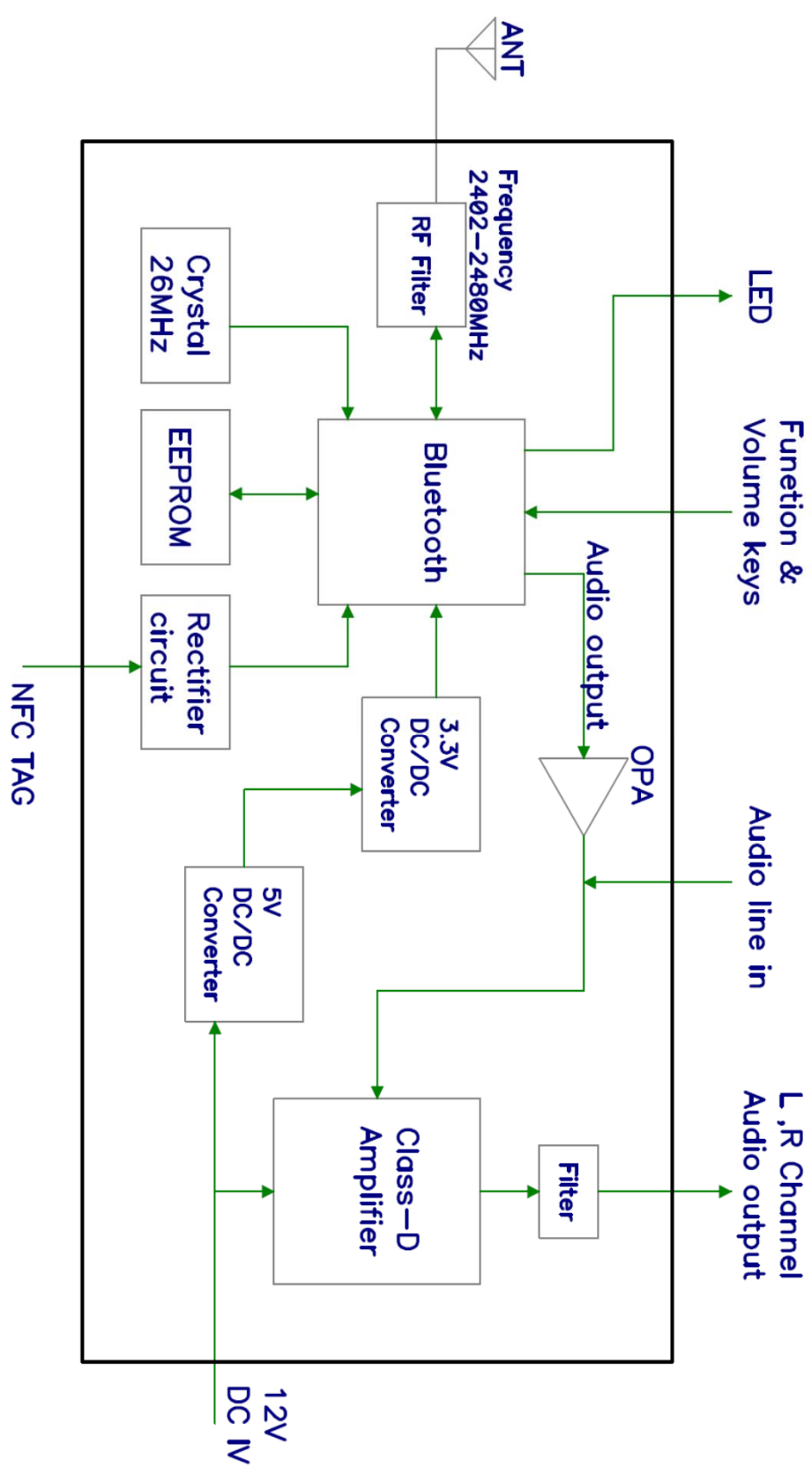


Tolerance=0.3mm
PCB Thickness=1.6 +/-0.15mm

10. Application Circuit



11. Block Diagram



12. Antenna Specification

Antenna Design

Antenna's spec is like below, and soldered the antenna to the SMA connector in the production process to avoid any change.

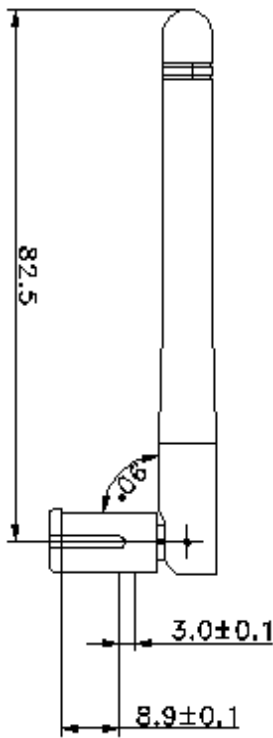
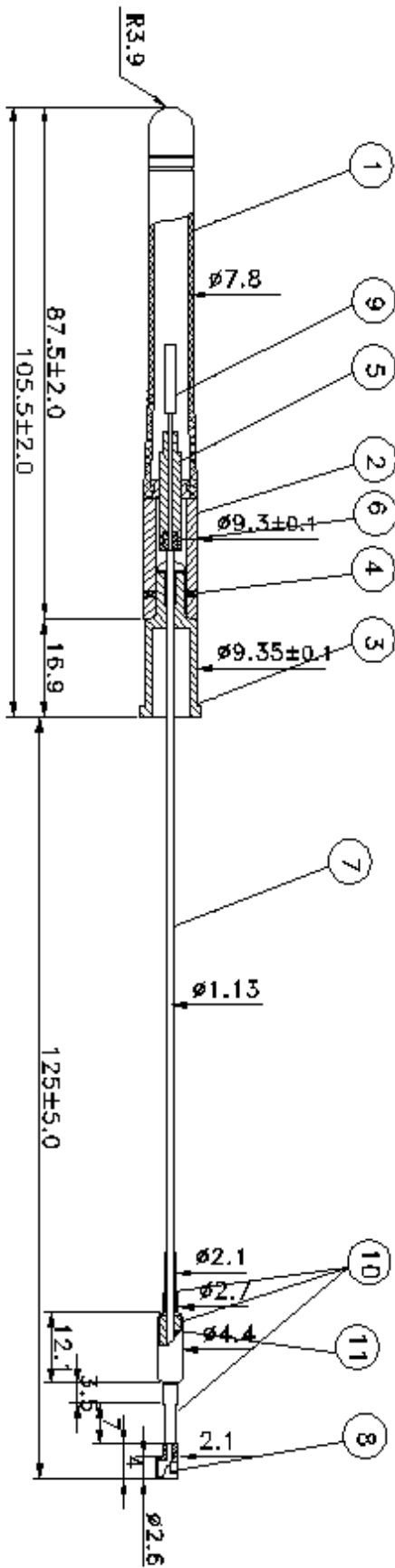
Electrical Properties

1	Frequency Range	2.4GHz~2.5GHz
2	Impedance	50Ω Nominal
3	VSWR	2.0 Max.
4	Return Loss	-9.54dB Max.
5	Electrical Wave	1/2λ Dipole
6	Gain	2.0dBi
7	Admitted Power	1 W
8	Polarization	Linear

Physical Properties

1	Cable	Ø1.13Cable 50ΩØ
2	Antenna Sleeve	TPE
3	Antenna Base	PC
4	Operating Temp	-20℃~~+65℃
5	Storage Temp	-30℃~~+75℃
6	Color	Shapphire Blue
7	Connctor	I-PEX

Antenna Dimension



11	CORE	RH4x10x2	1
10	H.S TUBE	Heat Shrink Tube	3
9	Tube	Brass; Plating Gold	1
8	Connector	MHF Plug for $\phi 1.13$ Connector	1
7	Cable	$\phi 1.13$ Coaxial Cable	1
6	Insulator	ABS Compound, white	1
5	Ground Tube	BRASS; NI PLATED	1
4	Rivet	BRASS; Cr PLATED (BLACK)	2
3	Antenna Base	PC COLOR: Sapphire Blue W.Y:001	1
2	Antenna Base	PC COLOR: Sapphire Blue W.Y:001	1
1	Antenna Body	TPE COLOR: Sapphire Blue W.Y:001	1
NO	DESCRIPTION		Q'TY

FCC statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2)

this device must accept any interference received, including interference that may

cause undesired operation.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or changes to this equipment. Such modifications or changes could void the user's authority to operate the equipment.

The output power is so low that no SAR measurement is required.

A certified modular has the option to use a permanently affixed, or an electronic label. For a permanently affixed label, the module must be labeled with an FCC ID: 2AAYB-JBA-870V5-1. The OEM manual must provide clear instructions explaining to the OEM the labeling requirements, options and OEM user manual instructions that are required.

For a host using a this FCC certified modular with a standard fixed label, if (1) the module's FCC ID is not visible when installed in the host, or (2) if the host is marketed so that end users do not have straightforward commonly used methods for access to remove the module so that the FCC ID of the module is visible; then an additional permanent label referring to the enclosed module: "Contains Transmitter Module FCC ID: 2AAYB-JBA-870V5-1" or "Contains FCC ID: 2AAYB-JBA-870V5-1" must be used. The host OEM user manual must also contain clear instructions on how end users can find/or access the module and the FCC ID.

Host product is required to comply with all applicable FCC equipment authorizations regulations, requirements and equipment functions not associated with the transmitter module portion, compliance must be demonstrated to regulations for other transmitter components within the host product; to requirement for unintentional radiators (15B). To ensure compliance with all non-transmitter functions the host manufacturer is responsible for ensuring compliance with the module(s) installed and fully operational. If a host was previously authorized as an unintentional radiator under the Declaration of Conformity procedure without a transmitter certified module and a module added, the host manufacturer is responsible for ensuring that after the module is installed and operational the host continues to be compliant with the Part 15B unintentional radiator requirements. Since this may depend on the details of how the module is integrated with the host, we suggest the host device to recertify part 15B to ensure complete compliance

with FCC requirement: part 2 Subpart J Equipment Authorization Procedures, KDB784748 D01 v07, and KDB 997198 about importation of radio frequency devices into the United States.