BM83 Converter



AAC対応BlueToothモジュールを、ラズパイゼロサイズに変換するもの

特徴

- ・BM83をラズパイゼロサイズの基板にしました。ラズパイ用DACに対して、ラズパイのかわりに 使うことで、ラズパイDACがBlueToothレシーバーになります。
- ・コンフィグ書き換えで、こまかな動作設定ができます。
- ・SBC/AACに対応しています。 今どきのサブスクをラズパイDACで使えるので消費が捗ります。
- ・技適通ってます。 < 人によってはとても大事。

・RaspiDapBASE/NosPiDAC Crown,DaydreamおよびNosPiDACZero1.3シリーズに対応しています。 その他、最新情報は以下のページを参照してください。

https://www.telnet.jp/~mia/sb/

共在の前日の7.4月1++

※基板レジスト色はロットにより変更になることがあります。

※回路図はありません。基板の部品定数やパターンから読み取ってください。

BM83 Converter 部品表 2023/7/13版

<u> </u>		
名称・定数	部品番号等	数量
メイン基板		1
33 2012サイズ	R1,R2 千石 RK73B2ATTD330J	2
1uF(2012サイズ)	秋月 P-15331 C1,C2	2
220uF 6.3V	秋月 P-08261 C3	1
LDO 3.3V NJM2866F33	秋月 I-05448 REG	1
LED(2012サイズ)	秋月 2012だったらなんでも。色は揃えない方がいいと思う	2
20x2ピンヘッダ	秋月 C-00080	1
表面実装用タクトスイッチ (いらないというか、なくていいと思う)	秋月 P-09361	1
表面実装用USBコネクタ microBメス リバース	秋月 C-05254	1
	Digikey/mouserなど。BM83SM1-00TBといった形でハイフン以降	
BM83SM1	の型番が違うものが存在するが、ファームの違いらしいです。どう	1
	せ書き換えるので、どれでもいいと思われます。	

※その他、カプトンテープ、はんだ等が必要になります。

免責事項

- 20月9頃 1)本基板は実験基板であり、親切なキットではありません。 技術サポート等は一切行いません。 2)基板の動作の完全性(安全性、動作性を含む)は一切保証されるものではありません。 3)本資料を参考に組み立て(部品調達を含む)が可能な方を対象としています。 4)部品調達に関する質問に一切お答えはできません。 5)本基板使用に伴う事故等に関して、一切の責任は負いません。自己責任でお願いします。 6)本基板の著作権は放棄していません。 同一のアートワークでの販売は禁止します。

本ボードの電源は、DAC側から給電されることを想定しています。 ボードをDACに接続後、LED0,1が交互に点灯している状態がペアリング待ち状態です。 LEDの動作、ペアリングの挙動、MFB(ボタン)の動作は後述のツールにて変更できます。 この動作変更については、自分で調べて頑張ってください。

無音時にノイズが出る場合、BTの電波を拾ってる可能性があります。



写真のとおり、アンテナ部分も含めてシールドを お試しください。 電波の飛びが変わるので、自分の環境において良さそうな 落とし所を探してください。(アンテナを全部覆わないなど)

NosPiDAC Tube MT/Mtaの場合、球の真横にBTアンテナが来るため、球によっては ノイズを拾います。その場合、以下のようにシールドを入れてください。



シールドを作成し、球の背面と横をかこうように

シールドを挿入すればOK.

フロントパネルから見える部分まで囲わなくてOK

Zero1.3 1387かつDCDCを入れてバッテリー駆動の場合、消費電力が低すぎて、20秒程度で スリープしてしまうことがあります。(HT4928Sの仕様)

スリープ・スリープ復帰を繰り返し、不安定な場合、50mA程度、余計に電流を流す必要があります。 100オーム1/2Wクラスの抵抗を、図のように入れてください。



5V-GND間に抵抗を入れます

以上

・ファームウェアの焼き方

※注意!USBケーブルから5Vを供給するようにしてありますから、GPIOからの5Vと衝突しないように 注意してください。USBケーブル以外、何もつなげない状態にしてください。

動作にはファームを書き込む必要があります。以下のページより、ツールをダウンロードしてください https://www.microchip.com/en-us/product/BM83

Embedded Software->IS2083 Turnkey Software and Tools よりダウンロードしてください。 <u>https://ww1.microchip.com/downloads/en/DeviceDoc/IS2083Turnkey1.2.4.zip</u> ダウンロードしたアーカイブを解凍し、日本語パス名を含まない場所にコピーしてください。

¥IS2083 Turnkey_1.2.4¥Tools¥Config Tool¥is208x_config_gui_tool v1.3.23.exe を起動します。このツールを使って、設定を行っていきます。 橙は設定項目、赤は項目変更後の次画面への遷移指示です。

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	Dor Status Unknown	BLE Status: Not connected
Main Function Voice Func	tion Audio Function I2S/PCM	
	IS208x DSP GUI Tool Version 6	.1
		この画面は勝手に立ち上がってきますので、
		「SAVE」押下で閉じてください
Save		Reset
Save		Reset
Save		Reset
Save Config_GUI_Tool		Reset
Save Config_GUI_Tool Version & Device IC Package:	IS208x	Reset X 好きな場所にコンフィグを保存します
Save Config_GUI_Tool Version & Device IC Package: Tool Version:	IS208x • V1.3.23	Reset X 好きな場所にコンフィグを保存します。 名前は「config.hex」などとしてください
Save Config_GUI_Tool Version & Device IC Package: Tool Version: Project:	IS208x ▼ ▼1.3.23 MSPKv2_SPP ▼	Reset メ 好きな場所にコンフィグを保存します。 名前は「config.hex」などとしてください
Save Config_GUI_Tool Version & Device IC Package: Tool Version: Project: Load	IS208x ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	Reset

¥IS2083 Turnkey_1.2.4¥Tools¥isupdate¥isupdate.exe を起動します。

このツールを使って、ファームの書き込み、先ほど作成したコンフィグの書き込みをします

isUpdate Tool v3.14	– 🗆 🗙
Access Port port USB HID ~ image num Connect Memory Type baudrate 921600 ~ EEProm Spee	Code Information/Version Device Inage Image
Flash Update/Dump Images	> Browse Update
	Rehex
Images van bank num	
Flash/EEPRom/MCU/AHB Access	Clear
Address Length(Hex) Data(Hex)	Read Write
	Browse Write Table
Images Dump Size 4K	Dump Table
「¥IS2083 Turnkey_1.2.4¥Software¥IS2083 Image¥MSPK2v1.3.4¥SPP¥E ムを順番に書き込みします。 ・MSPKv2_1.03.0406_SPP.hex ・MSPK2.0_DSP_FW_V1.04.0411.HEX ・IS208x_UI_1.3.23_Demo_Package_Embedded_Mode_SPP.hex 「Browse」ボタン押下し、ファームを選択。「Update」ボタンで 繰り返します。) このとき「Would you like to disable current procedure?」と表示され が切断されますので再度「connect」ボタンを押下し、やりなおし	Embedded Mode」にある、以下のファー 書き込みです。(1つづつ、この手順を れたら「Yes」を選択してください。接続 てください。
おなじ手順で、さきほど保存しておいた config.hex を書き込みます	-
すべて書き込んだら完了です	
下記動画も参考になります https://www.youtube.com/watch?v=SPIbVVXS5hs	