




DINAH – BRIAN(SM) – SHARI Comparison Matrix

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FEATURE	DINAH	BRIAM(SM)	SHARI (Pi3U,Pi3V,Pi4U,Pi4V)
Photo			
Radio	External VHF or UHF ham transceiver with 6 pin DIN interface. (Note 1).	Circuit board from UHF Baofeng BF888S (newer half-size version). Uses RDA1846 single IC for radio	niceRF SA818 UHF radio module. Uses RDA1846 single IC for radio.
Ham Band	Depends on external transceiver	70 cm (UHF)	70 cm (Pi3U, Pi4U) or 2m (Pi3V or Pi4V)
Radio cost	User supplied. Must have 6 pin DIN 'packet' connector on radio. (Note 1)	User supplied, BF888S is \$10-13 from Amazon	NiceRF SA818U or SA818V included with the kit
PC Board Technology	Single PC board using single sided surface mount and through-hole parts.	Single PC board using single sided surface mount and through-hole parts.	Single PC board using single sided surface mount and through-hole parts.
PC board assembly required	PC board supplied with all surface mount parts installed. Kit builder installs 4 through-hole parts.	PC board supplied with all surface mount parts installed. Kit builder installs 8 through-hole parts. Kit builder also modifies, mounts and wires the BF888S board to the BRIAN motherboard.	PC board supplied with all surface mount parts (except radio module) installed. Kit builder installs 9 through-hole parts and the SA818 radio module (castellated holes soldered to very large pads on the PCB)
PC board Mounting	PC board slides into two slots in the enclosure.	PC board slides into two slots in the enclosure.	PC board slides into two slots in the enclosure.
RF Power Output	Depends on external transceiver	200-500 mW (Note 2).	100-400 mW
Harmonic and spurious output supression	Depends on external transceiver	As provided by Baofeng BF888S (greater than -43 dBc)	Low pass filter incorporated into SHARI design (greater than -43 dBc).
Allstar USB audio interface	CMedia CM119B/108B	CMedia CM119B/108B	CMedia CM119B/108B
Raspberry Pi Interface	USB Type A male connector on DINAH plugs directly into USB Type A female on Raspberry Pi (2,3 or 4). A USB extension cable can be used if desired.	A short USB Type A male to Type B male cable (provided with the kit) is used to connect BRIAN to a Raspberry Pi (2,3 or 4).	2 USB Type A male connectors mate with USB female connectors on the Raspberry Pi (2,3 or 4). There are four SHARI models – Pi3U, Pi3V, Pi4U and Pi4V. The location of USB connectors is reversed between the Pi3 and Pi4 models. A short USB extension cable can be used if desired.

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LED indicators	Blinking green LED at USB end indicates USB connection status. Yellow and red LEDs at DIN connector end indicate SQUELCH and PTT status. (Note 3)	Blinking green LED indicates USB connection status. Two green LEDs show BRIAN and radio power status. Yellow and red LEDs indicate SQUELCH and PTT status. (Note 3)	Blinking green LED indicates USB connection status. Green LED shows SHARI power status. Yellow and red LEDs indicate SQUELCH and PTT status. (Note 3)
Input DC Power	Supplied by the Raspberry Pi USB. Less than 100 mA	Supplied by the Raspberry Pi USB. Less than 800 mA (Note 2)	Supplied by the Raspberry Pi USB. Less than 500 mA
Enclosure Type	Two piece aluminum extrusion with 3D printed plastic end caps. Aluminum metal end caps also provided with kit for builder to modify if desired.	Two piece aluminum extrusion with 3D printed end caps. Aluminum metal end caps also provided with kit for builder to modify if desired.	Two piece aluminum extrusion with 3D printed plastic end caps. Aluminum metal end caps also provided with kit for the builder to modify if desired.
Enclosure size	50 x 25 x 25 mm (2" x 1" x 1")	100 x 76 x 35 mm (4" x 3" x 1 3/8")	80 x 50 x 20 mm (3.15" x 2" x 0.8")
Frequency Selection	As provided by external transceiver	16 position rotary switch (no audio feedback)	No external frequency selection. Single frequency programmed from Raspberry Pi
Frequency programming	As provided by external transceiver	16 channels programmed using Chirp program, PC and adapter cable. Enclosure must be opened to plug in Baofeng programming cable.	Single frequency programmed using "818-prog" running on the Raspberry Pi. The 2 nd USB port on SHARI is used for programming. Uses CH340G USB to serial converter.
Construction difficulty	Simple - Solder in 4 through-hole parts and screw on the end caps	Moderate – Solder in 8 through-hole parts. Disassemble Baofeng, remove and modify board/connect jumper wires. Mount Baofeng board to motherboard and connect 5 wires. Screw on the end caps	Simple – Solder in 9 through-hole parts and radio module. Screw on the end caps
Cost (kit) + shipping via USPS Priority Mail	\$35 + \$8 shipping	\$50 + \$8 Shipping (Baofeng BF888S not included)	\$60 (UHF), \$65 (VHF) + 8 shipping (includes SA818 radio module)

Note 1 – DINAH will also work with some radios that do not use a 6 pin DIN connector for the "Packet" interface. For instance:

- Yaesu FTM400/FTM100 with the CT-175 6 pin to 10 pin DIN adapter cable.
- Alinco DR135/DR/235/DR435 with a 6 pin DIN to DB-9 adapter cable.

Note 2 – BF888S set to low power.

Note 3 – COS LED operation requires minor setup in HamVOIP Allstar software.