

Overview

DSP Group offers pre-certified, product quality ULE modules for both devices and hub/gateway side. **The DHAN-S and DHAN-J** Modules are used in a ULE Dual-Mode (data and/or audio) application on the Device side. The **DHAN-S** does not include an antenna. The **DHAN-J** features an on-board antenna and regulatory certification. Both include microphone and speaker interfaces for applications utilizing audio links. Both modules can be paired (via UART) with a Host Application Processor that interfaces with the sensor or actuator or, alternatively, the on-module stack can be customized to suit "standalone" ULE applications.

The **DHAN-M** module is appropriate for full-fledged DECT-ULE Hub, supporting both ULE and traditional Cordless devices. This module has UART and USB interfaces (for control via the Application Host processor) as well as a TDM interface for exchange of PCM audio with the Host Processor. The DHAN-M can also be utilized in a DECT Device smart audio application where the Host Processor includes a microphone and speaker and requires wireless access to a phone-line.

Module Name	Size (mm)	Antenna	Hibernation Mode	Control I/F	TDM I/F	Application Domains
DHAN-S	20.7x15.5x3.7	None	Yes	UART	No	ULE Dual-Mode Device
DHAN-J	27.2x15.2x3.3	Single		UART		
DHAN-M	27.2x15.2x3.3	Diversity	No	UART or USB	Yes	DECT-ULE Hub, Audio Device
Dongle		Single	No	USB	NR	DECT-ULE Hub

Benefits

- Enables the IoT Developer with little or no RF know-how to utilize ULE wireless
- Streamline regulatory (FCC, ETSI, TELEC) certification with a pre-certified module
- Accelerated product development cycle

Support Material for DHAN Modules

See DSP Group's website where you can download the following:

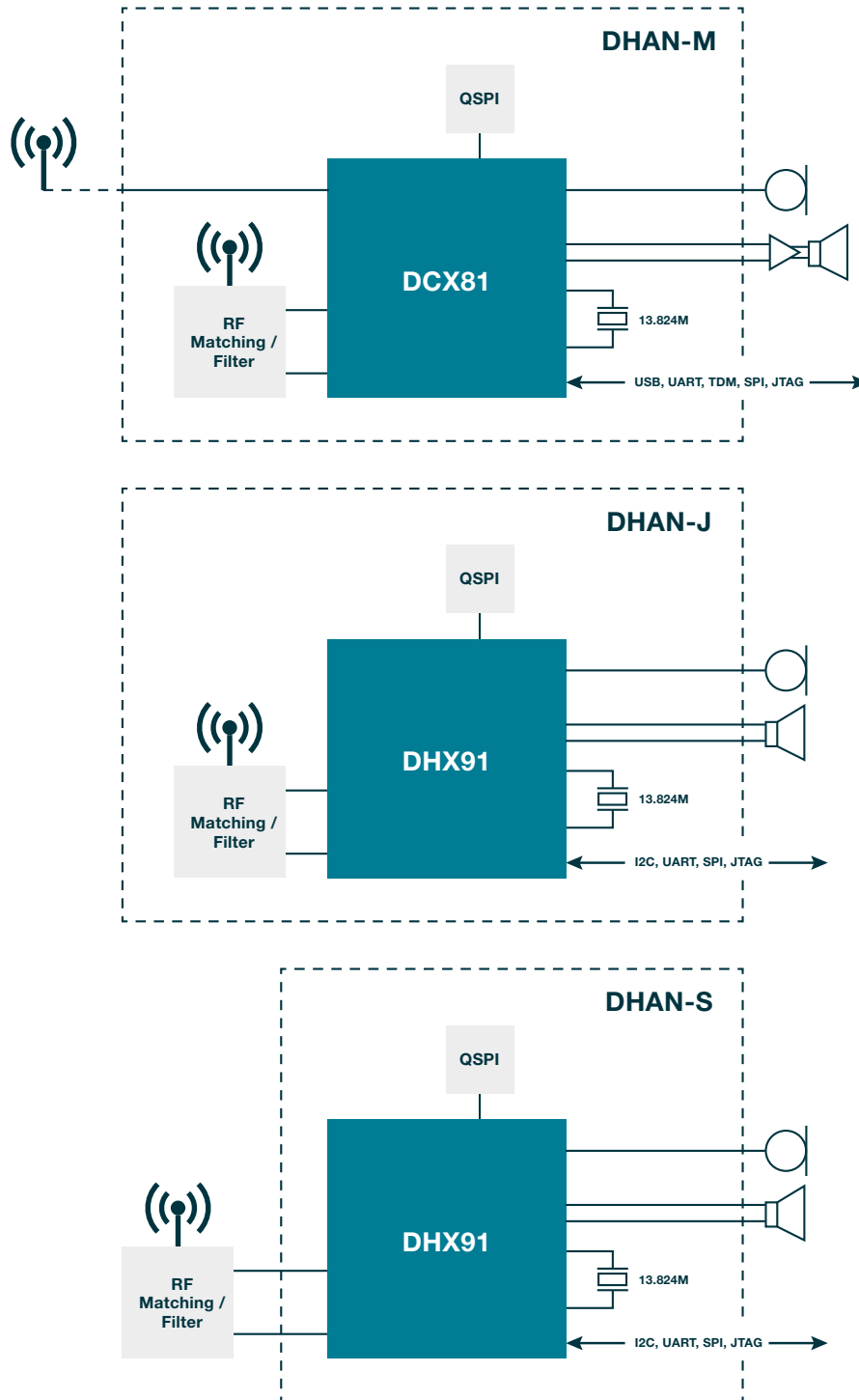
- Comprehensive Module Data Sheets (pinout, mechanical drawings, electrical specifications, reference schematics)
- Schematic Symbols and layout footprints to help embed these modules within your application PCB
- Development Tools and SW packages to assist in composing your application SW that interacts with the DHAN Modules

Support Material for DHAN Modules

- Excellent radio performance, with over 123dB system gain
- Radio covers all regional DECT bands. A simple re-configuration of the EEPROM is required
- Low external BOM
- On-board antenna simplifies product design (DHAN-J and DHAN-M)
- Well-matched RF port, easily routed to an off-module 50-Ohm antenna (DHAN-S)
- Operating temperature: -40°C to +85° C
- Compliance with regulatory standards: EN301406, FCC Part 15.329 & ARIB STD-T101
- Embedded DECT-ULE SW stack (DHAN-S/J with Device stack, DHAN-M with Hub stack)
- Well-documented API for control via external MCU using the serial UART interface
- Low-power Hibernation mode (DHAN-S/J) enables long-lifetime battery power IoT applications



Block Diagrams



DSP Group®, Inc. (NASDAQ: DSPG) is a leading global provider of wireless chipset solutions for converged communications. Delivering semiconductor system solutions with software and hardware reference designs, DSP Group enables OEMs/ODMs, consumer electronics (CE) manufacturers and service providers to cost-effectively develop new revenue-generating products with fast time to market. At the forefront of semiconductor innovation and operational excellence for over two decades, DSP Group provides a broad portfolio of wireless chipsets integrating DECT/CAT-iq, DECT ULE, Wi-Fi, PSTN, HDClear™, video and VoIP technologies. DSP Group enables converged voice, audio, video and data connectivity across diverse mobile, consumer and enterprise products – from mobile devices, connected multimedia screens, and home automation & security to cordless phones, VoIP systems, and home gateways. Leveraging industry-leading experience and expertise, DSP Group partners with CE manufacturers and service providers to shape the future of converged communications at home, office and on the go.

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