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Nihon Dempa Kogyo Co., Ltd.

President: Hiroshi Takeuchi

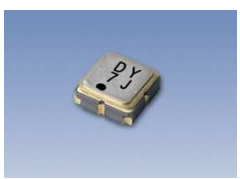
Compact, low-profile, high-performance 920 MHz band SAW filter for HEMS appliances and smart meters developed

Nihon Dempa Kogyo Co., Ltd. has developed a compact, high-performance 920 MHz band SAW filter ideal for the Japanese home energy management system (HEMS) using smart meters and HEMS-compatible home appliances.

The Japanese HEMS consists of a radio network between HEMS-compatible appliances and a smart meter in each household to control domestic energy consumption. The system uses a weak radio wave of 1W or less permitted by the appropriate national law (the specified low power radio) using the 920 MHz band. Conventionally this frequency band was seldom used by strong radio waves and almost always not affected by other services. With the recent reallocation of the 900 MHz band, however, frequency bands close to 920 MHz are now occupied by strong radio waves of mobile communication devices of Long Term Evolution (LTE) (see the figure below). To ensure the accurate radio communications between HEMS-compatible appliances and smart meters by suppressing radio frequency interference by mobile communication devices, a high-performance filter should be used to only pick up the necessary frequency and reliably attenuate unnecessary ones. The filter also needs to be compact and low-profile so that its modular product can be integrated into the radio component of the appliances.

The optimal solution in responding to the needs is the use of a highly reliable, compact SAW filter. NDK has made full use of its expertise in the industrial specified low power radio to commercialize this new SAW filter which satisfies usage needs in general households. The product is available in two different sizes: One is a compact low-profile version of 1.4×1.1×0.55 mm and the other a higher-reliability version of 3.0×3.0×1.05 mm. Both versions come in standard frequencies of 920.1 MHz (6.8 MHz bandwidth), 922.5 MHz (4 MHz bandwidth), 924 MHz (8 MHz bandwidth) and 925.8 MHz (4.6 MHz bandwidth). Tailor-made products will be promptly available upon request. The new SAW filter allows accurate radio communications between HEMS-compatible appliances and a smart meter in households, contributing to home energy management

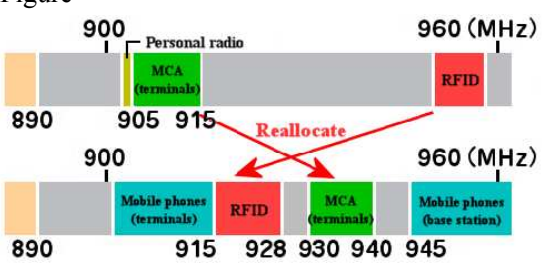
Delivery of product samples is under discussion and mass production is planned to be launched January 2013.



3.0×3.0×1.05 mm

1.4×1.1×0.55 mm

Figure



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* For sample requests, please contact NDK sales personnel or send an e-mail to the address above.

The specifications are shown below:

Specifications

3.0×3.0×1.05 mm Type	
Model	WFC48B0920CE
Nominal frequency	920.1MHz
Passband width	Min. ±3.4MHz Typ. ±9.4MHz
Insertion loss	Typ. 2.1dB Max. 3.0dB
Model	WFC11B0922CG
Nominal frequency	922.5MHz
Passband width	Min. ±2MHz Typ. ±7MHz
Insertion loss	Typ. 2.1dB Max. 3.5dB
Model	WFC48C0924CF
Nominal frequency	924MHz
Passband width	Min. ±4MHz Typ. ±12MHz
Insertion loss	Typ. 1.9dB Max. 3.0dB
Model	WFD14C0925CG
Nominal frequency	925.8MHz
Passband width	Min. ±2.3MHz Typ. -5.6/+12.3MHz
Insertion loss	Typ. 2.1dB Max. 3.0dB

1.4×1.1×0.55 mm Type	
Model	WFD51A0920FE
Nominal frequency	920.1MHz
Passband width	Min. ±3.4MHz Typ. ±18.3MHz
Insertion loss	Typ. 1.8dB Max. 3.0dB
Model	WFD79C0925FG
Nominal frequency	925.8MHz
Passband width	Min. ±2.3MHz Typ. -5.6/+12.3MHz
Insertion loss	Typ. 2.1dB Max. 3.0dB

External Dimensions