

Read -Application dt. 18.10.2005 by M/s. Filtronics Components Pvt. Ltd.
holder of TIN No. 27630336337 V

Heard - Shri. R.G. Nahar (C.A.) & Shri. Mohan Dayal (Director, Filtronics)

ORDER

(U/s. 56 (1)(e) of the Maharashtra Value Added Tax Act, 2002.)

No. DDQ 11/2005/Adm-5/84/ B-1

Mumbai, Date :- 7.12.2007

The application is preferred by M/s. Filtronics Components Pvt. Ltd. requesting determination as to the rate of tax on the sale of 'inductor' sold through invoice no. 360433 dt. 30.9.2005 and having address as T-170, Bhosari Industrial Estate, Pune- 411 026.

2. FACTS OF THE CASE

The company is a manufacturer of RF/IF coils. It is informed that the end products manufactured by the applicant are known as AM/FM coils, SW OSC coils and SW antenna coils. The following information is submitted along with the application.

Raw material used for the manufacture of the coil

- Base, Case, Holder, Bobbin
- Ferrite cores of different grades frequency and size.
- Copper wire of different gauges.
- Miniature tubular capacitor .
- Adhesive and sealants

Description/process of manufacture of the Products :-

An inductor (this is also referred to as coil induction coil) is usually constructed as a coil of material such as copper wire. A core of ferrous material is used to increase the inductance. Similar inductors used for very high frequencies are sometimes made with a wire passing through a ferrite cylinder or bead. When a sinusoidal alternating current (AC) flows through an inductor, a sinusoidal alternating voltage (or emf.) is induced. Because of their ability to alter AC signals, inductors are used extensively in analog electronics and signal processing, including radio reception and broadcasting. As inductive reactance changes with frequency, an electronic filter can use inductors in conjunction with capacitors on a common core with a transformer.

A coil is a component where copper or litz wire is wound around a ferrite core. Coils are also called inductors. Inductance is the measure of the strength of a coil. Capacitors have capacitance, Resistors have resistance and inductor (coils) have inductance. When alternating current flows through a coil, the magnetic flux that occurs in the coil changes with the current. The changing magnetic flux in one winding of a coil affects it self as well as other windings. This is called self induction. The degree of this self induction is called self inductance. When a second coil is wound on the first coil, alternating voltage is caused to flow in the second coil by an effect known as "mutual induction".

Resonance:-

When a coil and a capacitor are combined, the resulting circuit has special characteristics. The impedance of the circuit changes with the frequency of

the voltage, current will flow easily at a given frequency, but has difficulty flowing at another frequency.

The tuning circuit that select- particular radio station utilizes this characteristic. This resonance behavior of the coil is extensively used in Radio, Television and Communication circuits where frequency filtering is required, to finally produce an audio output.

Variable Capacitance Tuning:-

In radio circuits, in the aerial and oscillator section resonance (tuning) is accomplished by keeping the inductance set at a particular value, and varying the resonant frequency by the application of a variable capacitor (gang capacitor).

Aerial Coil - This is wound usually with two windings: Primary and Secondary. A variable capacitor is connected across the secondary winding in order to tune the circuit.

The magnetic field in the primary winding will vary in accordance with the high frequency voltage variations induced in the antenna circuit. The variable capacitor and secondary winding of the coil form a series resonant circuit whose frequency of resonance is determined by the capacitance of the variable capacitor and the inductance of the secondary winding of the transformer. By means of mutual inductance between the two windings the signal is transferred to the secondary.

The frequency selection is dependent on the inductance and the value of the variable capacitor. The Sensitivity and selectivity will depend on the quality of ferrite materials used in the coils.

The use of separate serial coils (medium wave, short wave) along with variable gang capacitor provides a means of covering the broadcast band and a number of short wave bands with one receiver.

OSCILLATOR OR MIXER COILS:-

The antenna coil selects the desired frequency with the aid of the aerial coil and variable capacitor. The received signal is then mixed with the oscillator frequency, which is kept constant by means of an oscillator coil and variable gang capacitor. The circuit is designed to produce an oscillator frequency that is always greater than the incoming frequency by an amount equal to the intermediate frequency (which is generally 455 KHz). Use of separate coils (medium wave oscillator coil, short wave oscillator coil) along with variable gang capacitor provides the means of covering the broadcast band frequencies.

The signal produced by the output of the oscillator is fed to the primary of the first Transformer. The transformer is tuned with a fixed capacitor to the intermediate frequency (usually 455 KHz). The induced voltage in the secondary is then fed into the IF amplifier. There may be one or two stages of IF coils and amplifiers to achieve the desired gain and selectivity.

DETECTOR COIL:-

The amplified signal from the IF amplifiers is fed to the detector stage again with a similar coil to the IF Transformer coil (Detector coil). The intermediate frequency is isolated and the received and amplified signal is further amplified for audio reception.

A typical radio receiver circuit using inductance coils in different modes is enclosed herewith.

FM COILS:-

The coils described above are used in superhetrodyne receivers where the signal received is amplitude modulated. Similar coils are also used for FM (frequency modulated) receivers. The difference between the AM and FM is that in the AM, modulated signals is superimposed on the wave to alter the amplitude, whereas in the frequency modulated system the frequency varies depending on the signal superimposed.

The material used in the construction of this coil is separately shown. Ferrites of different grades and copper and litz wire are used to provide efficient inductor coils at various frequencies.

All the coils described above works on the principal of induced emf. (Inductance coils) and are used to receive, filter and amplify various frequencies. They are not meant to handle any power or high currents and are therefore not rated by any voltage or current ratings.

3. CONTENTION

It is contended by the applicant that the impugned products are electronic products and therefore taxable @ 4%.

4. HEARING

The case was fixed for hearing on 20/11/2007. Shri R.G. Nahar, CA and Shri Mohan Dayal, Director of the Company attended for the hearing. They stated that the company has been manufacturing the product for several years. They referred to the decision given by the Tribunal (SA No. 209 of 2002 dt.

18.6.2005)in their own case , in which it was held by the Tribunal that the products manufactured by the applicant - 'F T coils, MW-OSC., SW-OSC, peaking coils" are electronic components covered by the schedule entry C-II-97 read with notification 223 of the BST Act. Mr. Dayal stated that the product under consideration AM/FM Coils are used in radio and television to get the right frequency. He also stated that the impugned product is a part of a radio communication receiver. The applicant company is collecting tax @ 12.5% and the product is cleared under excise heading 85045090. The Chartered Accountant argued that the product be held as covered by schedule entry C-56 being covered by excise heading 8529 as a part of the radio communication receiver which is covered by excise heading 8527 90. In the alternative, they contended that it would also be covered by schedule entry C-54 as it is an industrial input and it is a part of an electrical transformer which is notified under that entry. Mr. Dayal explained that the product does the function of segregating the frequency signals. The product is sold to Phillips, Onida and Sharp TV. It is only used as a part of radio communication receiver. He said that the product is different from the induction coil which is used in a transformer. It does not do the work of a power transfer as a normal coil does in a transformer. The product does the working of controlling frequency. He described the product as not a normal induction coil but a high frequency induction coil. This induction coil cannot be used in a transformer. He also informed that earlier under the Central Excise Tariff Act the product is classified under excise heading 8529 but a decision was passed by the CEGAT in their own case (43 ELT 457) in which it was held that the product is a transformer covered by excise heading 8504. In view of the particular decision the product gets cleared under 8504 of the Excise Act.

5. DECISION

I have gone through the contentions made by the applicant. It is contended by the applicant that the product would be covered by schedule entry

C-56 under the excise heading 852790 / 8529. In the alternative, it is contended that the product would be covered by schedule entry C-54 as an industrial input being cleared under excise heading 8504 which covers 'electrical transformer'. The schedule entry and the excise heading notified are reproduced as under:

C-56	IT products as may be notified by the State Government from time to time	4%
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8527	16. Radio communication receiver, radio pagers	1.4.2005 to 16.10.2005
8529	17. 1)Aerials, antenna and their parts. 2)Parts of goods specified in excise heading 8525 and 8527	

The notification was subsequently amended with effect from 17.10.2005. The amended entry is reproduced as under :

852790	22. Radio communication receivers, radio pagers	17.10.2005 onwards
8529	23. Parts of goods specified in excise sub-headings 8525 10, 8525 20, 8525 40 00 and 8527 90.	

The alternative schedule entry contended by the applicant is reproduced as under :

C-54	Industrial inputs and packing materials as may be notified from time to time by the State Government in the Official Gazette	4%
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8504	Electrical transformer
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It is contended by the applicant that the product is a part of a radio communication receiver. Both radio communication receiver and their parts are notified for the purpose of schedule entry C-54 from 1.4.2005. In the notification entry as existing from 1.4.2005 , the 'radio communication receiver' were listed at no (16) and the parts at no.(17) and in the amended notification, radio communication receiver are listed at item No.22 of the list and parts of radio communication receiver are listed as (2) of item No.23. I will examine the contention of the applicant now with respect to whether the product is a part of radio communication receiver. I have examined the sample of the product. It is seen by me that, AM/FM induction coil is not an ordinary industrial coil or a transformer. It is a high frequency induction coil, and not a normal electrical induction coil. Its function is entirely different from that of an induction coil in a transformer. It is used in radio and television to segregate and control the various frequencies so that the right frequency is captured. The induction coils manufactured by the applicant are not inductors which are used in chokes. There is a basic difference between the high frequency induction coil as in the present case and the inductors used in electrical instruments such as chokes. The product manufactured by the applicant are high frequency induction coils and the same are used for receiving, falling and amplifying high frequency signals received.

The inductors manufactured by the applicant deals with frequency segregation and is not used for controlling electric current for which induction coils are used.

After going through the contention of the applicant I come to the conclusion that the product is not a inductor coil of normal frequency but a coil which is used for the purpose of filtering and segregating radio frequencies. It is indeed a part of a radio communication receiver. However, the induction coils which are not high frequency induction coils would not be part of radio communication receivers as they do not perform the function of filtering radio signals.

Earlier, a clarification had been given to the applicant dt.29/2/2004 in which it was clarified to the applicant that the induction coil would be covered by notification entry 33(7) in group 'A of the notification issued under schedule entry 41 of the BST Act,1959. '. The said notification entry A-33(7) read as follows :

A-33 (7)	Induction coils- Electronic equipment and instruments. Note : The normal inductors and the chokes used for florescent light and similar other inductors are not covered by this particular notification	4%
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After looking into the function of the coil, which was the selection of aerial signals oscillator frequency and detection of radio signals, it was held through the said clarification that the product would be covered by the notification entry. Likewise, as the impugned product is not a normal induction coil but a high frequency induction coil and is used for the specific purpose of detecting radio signals and being a part of radio communication receiver, I agree with the

contention of the applicant that it is covered by excise heading 8529 which is notified under schedule entry C-56 of the MVAT Act. I therefore, do not find it necessary to consider the alternate contention of the applicant. However, I would like to observe here that their alternate contention was with regard to heading 8504 which covers electrical transformer. However, after having examined the nature, make, utility of the product, I do not find it to be an electrical transformer. It is an electronic product and a part of radio communication receiver.

6. In view of the aforesaid deliberations, I pass the following order.

ORDER

(Under Section 56(1) (e) of the Maharashtra Value Added Tax Act, 2002)

No.DDQ-11/2005/Adm-5/84/B- 1

Mumbai,dt. 7.12.2007

The sale of 'inductors 'sold through invoice no. 360433 dt. 30.9.2005 is taxable @ 4% being covered by excise heading 8529 which is listed at no.17 of the notification dt. 1.4.05 and at no.23 of the amended notification dt . 17.10.05 issued for the purpose of schedule entry C-56 .

Sanjay Bhatia
Commissioner of Sales Tax,
Maharashtra State, Mumbai