CIRCULAR UNITS OF REAL ABELIAN NUMBER FIELDS WITH TWO RAMIFIED PRIMES

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Let K be a real abelian number field of conductor $p_1^{e_1}p_2^{e_2}$ having two distinct prime divisors. Further, let $E(K)$ be the group of units of K, $C_S(K)$ be the group of circular units of K defined by Sinnott, and $C_W(K)$ be that suggested by Washington.

Then after a construction of an explicit root of circular unit it is possible to find a basis of $C_W(K)$ which contains this explicit root and square roots of units from a basis of $C_S(K)$. This basis enables us to compute the group structure of the quotient group $C_W(K)/C_S(K)$, from which we can derive an index formula for $[E(K) : C_W(K)]$ and also we obtain some information about the class number of K.