Hitachi America, Ltd.

TN-0185

Application Engineering
TechNote

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GNU: Cast to a Union Type

A union, like a structure, is a derived type. Unions follow the same syntax as structures but have members that share storage. A union type defines a set of alternative values that may be stored in a shared portion of memory. Consider the declaration:

```
union Number {
  int   i;
  float f;
};
```

In this declaration *union* is a keyword, *Number* is the union tag name, and the variables i and f are members of the union. This declaration creates the derived data type **union Number**. The tag name, along with the keyword *union*, can now be used to declare variables of this type. Example:

```
union Number    MyNumber;
```

GNU H8/300 Compiler provides the ability to cast a variable to a union type. A cast to union type is like any other cast, except that the type specified is a union type. The types that may be cast to the union type are those of the members of the union. Thus, given the above example and we have a declaration:

```
int    x;
float  y;
```

Using the cast as the right-hand side of an assignment to a variable of union type is equivalent to storing in a member of the union. Example:

```
MyNumber = (union Number) x;    <=>     MyNumber.i = x;
MyNumber = (union Number) y;    <=>     MyNumber.f = y;
```

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