Wireless Controller Wave Bird Specifications

Wave Bird (Transmitter)

Operation section:
 Operation system (Analogue-digital input) has same specifications as standard controller including layout and components to be used. As additional operation input, this new system has POWER_S switching).

Communication section:
 This does not have receiving function but has operation data transmission function through an internal antenna (pattern antenna).

Display section:
 There is a LED to show battery status.

Power supply section:
 The system uses two AA alkaline batteries (boosted up to 2.9V using a DCDC converter) Battery pack for AGB is also available.

Wireless receiver:

Wireless receiver section:
 16 steps rotary switch for channel switching

Communication section:
 Regarding communication with Wave Bird, the receiver has no transmission function but has operation data receiving function through an internal antenna (chip antenna)
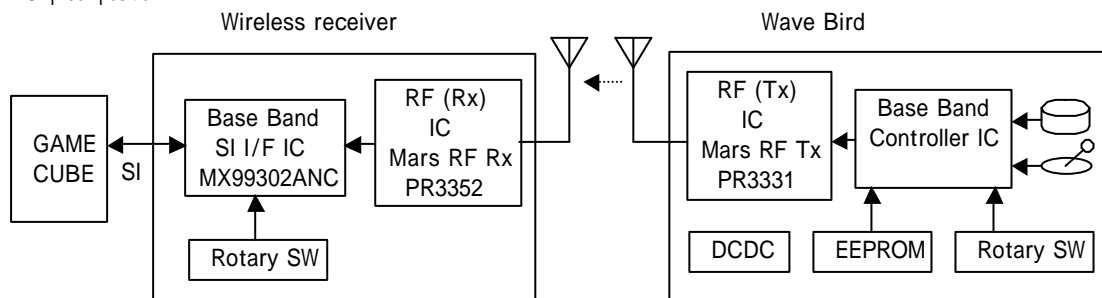 For communication with a Gamecube, same as standard controller, SI interface is used.

Display section:
 Equipped with a green LED to let the user know the receiving status.

Power supply section:
 3.3V that is provided in the Game cube side controller port shall be used. (5.0V shall be used.)

Chip composition

Wireless receiver   Wave Bird

| GAME CUBE | SI | Base Band SI I/F IC MX99302ANC | RF (Rx) IC Mars RF Rx PR3352 | | RF (Tx) IC Mars RF Tx PR3331 | Base Band Controller IC |

Wave Bird side:

    Base Based IC (Tx): Sampling of controller operation, generation of transmission data and control of RF-IC.

    RF-IC (Tx): Data transmission

    EEPROM: Configuration ROM for unique ID and operation specifications.

    DCDC:

    Rotary SW For channel selection. (16 steps)

Wireless receiver side:

    Base Band IC (Rx): Control of RF-IC, demodulation of received data and communication with a Game cube

    RF-IC (Rx): Receiving data

    Rotary SW For channel selection (16 steps)

RF specifications:

Frequency band:	2400-2483.5MHz (ISM band)
Modulation system:	FSK+DSSS (15 chips)
Transfer rate:	96Kbps (Payload 38.4Kbps)
Multiplex system:	FDMA
Communication system:	One-way communication
Number of channels:	32 channels (16 channels are used)
Channel width:	2.4MHz
Modulation frequency:	+/- 580KHz (percentage modulation 0.8)
Channel frequency:	1.44MHz (96K x 15)
Diffusion bandwidth (90%):	1.8MHz
Occupied bandwidth (99%):	2.4MHz
Output power:	0.1mW (-10dBm)
Communication range:	5m (Omnidirectional)
Ratency:	no more than 4.0ms
Error correction, detection	BCH (31, 21) CRC16
Communication error rate:	no more than 10e-4

Electrical specifications:

Wave Bird side:

Battery voltage:	1.7 3.3V	(more than 2.25V required for boot)
Internal voltage:	2.9V	
Current consumption	Transmitting:	114.82mA
	Waiting:	4.25mA
	power down:	3.27mA
	Over discharge protection:	no more than 100uA
	(Battery voltage is less than 1.7V)	
Battery life (Continuous transmission)	100h (AA alkaline battery x2)	
	50h (AA manganese battery x2)	

Wireless receiver side:

Voltage:	3.3V
Current consumption:	110mA

Compliance with various current regulations:

USA: FCC15.247 (For spread spectrum), FCC15.249 (Short range device)

Canada: RSS210 (FDD15.247 and FCC15.249 equivalent)