

# ART ON-SITE PAGING TRANSMITTERS

ADVANCED  
RADIO  
TECHNOLOGIES



*The ART Synthesized Paging Transmitters are rugged, purpose specific products designed for use in on-site POCSAG paging systems. Ideally suited for industrial and commercial applications where a fast response to a problem or situation is essential. Applications include alarms, fire, security, medical and nursing systems, shopping complexes, process and plant control, PLC systems and SCADA applications.*

## DIGITAL AND ANALOGUE ALARMS AND ALERTS

### Digital

For simplified applications, 2 closing inputs have been provided. Each can be programmed via the ART programming software with the pager's group, ID and any message. In very mixed systems even the frequency, channel spacing, power level and type of pager can be included. These inputs will override the RS232 port if it is in use and hence are ideal as panic or emergency buttons. Should more than 2 inputs be required, additional digital I.O. modules can be added via the I<sup>2</sup>C bus. The standard ART Digital I.O. module has 8 inputs, but up to 16 modules (128 inputs) can be added should more be required.

### Analogue

12 bit analogue input modules can be connected to the transmitter via the I<sup>2</sup>C bus with either timed or limit programmed transmissions to alert the operator of changes to the system. The range of analogue modules can cater for voltage, current and temperature.

## INDUSTRIAL ALARM APPLICATIONS

For industrial applications the paging transmitter can be coupled to a MPU, PC or PLC via the 5VTTL or RS232 port. The host can then page the relevant pager or group of pagers with an alert tone, numeric or alpha numeric message that relates to the alarm or system status. Alternatively, the closing contact inputs can be used with pre-programmed alert/alarm messages. Should more digital inputs or analogue inputs be required, they can be added via the I<sup>2</sup>C bus.

## PERSONNEL PAGING APPLICATIONS

For personnel paging applications, the ART Series can be used with almost any digital or analogue encoder or third party PC software. Alternatively, R.F. Technologies can provide a flexible PC paging software package that will run under Windows 95/98.

## RS232 PORT COMMUNICATIONS

Communications via the transmitter's RS232 port use one of two simple protocols – copies are available on request. If, however, a specific protocol is required to work with existing equipment, it can be written and downloaded into the transmitter's flash memory by our software team.

## PC PROGRAMMING

ART programming software is used programme the frequency, RF power, channel spacing, input levels, mode of operation and any fixed addresses and messages. As part of the package, test software is provided to test pagers and ranges. Once the ART is programmed, the client's set-up information can be stored on disc for future use.

## INTERNAL SOFT ENCODER

The ART Paging Transmitter Series features a soft encoder with flash memory for easy updates. The current product supports 512, 1200 and 2400bps POCSAG, with FLEX and ERMES under development. Data versions that support FFSK, V23, Bell202 up to 1200baud, 2400 baud with coherent 1200/2400Hz (1200/1800Hz by special order) GMSK at 4800 baud and 4 Level FSK at 9600 baud can be supplied on request.

## STATUS LEDs

The ART transmitters have LEDs to indicate the status of the product. These include: SYSTEM, TX, RXD, TXD, RTS, CTS, DSR and DTR. The system LED is used to detect any internal product error and will flash a code to indicate the error and the radio will reset.

## TX TIME-OUT TIMER

As a safety feature, the transmitter within the ART has a time-out timer which allows the maximum continuous transmission time to be set in order to prevent channel blocking due to any possible faults in the connected equipment. The timer can be programmed in one second steps between 0 and 255 seconds. If programmed and the time is exceeded, transmission will cease until the action that normally causes transmission is removed and then re-applied.

# ART SYNTHESIZED ON-SITE PAGING TRANSMITTERS



**Complies with the relevant UK, European, Canadian, USA and Australian standards for licensed and license exempt operation**



**Available in VHF, 225MHz, UHF & 900MHz**



**Internal softmodem with programmable POCSAG transmission speeds of: 150, 300, 600, 1200 & 2400bps (FLEX & ERMES under development)**



**RS232, and 5V TTL interface with various programmable protocols**



**Analogue and digital inputs provided for external paging encoders**



**Internal paging modem with programmable POCSAG speeds of 512, 1200 & 2400bps (FLEX & ERMES under development)**



**Optional internal data modem for FFSK, 2 & 4 level FSK, GMSK, Bell202 & V23 with programming speeds of 150-9600bps**



**External I<sup>2</sup>C BUS interface supports a range of external digital and analogue input modules**



**Processors use large flash memories with expansion facilities and EEPROM for easy downloading of new code and programming changes**



**2 programmable local digital inputs are available for sending pre-programmed messages**



**Frequency synthesized**



**Din rail or flat panel mounting**



**All parameters are PC programmable**



# TECHNICAL SPECIFICATIONS

## RF Performance

Frequency Ranges:	ART150T/P	138 – 175MHz
	ART400T/P	406 – 512MHz
	ART900T/P	800 – 950MHz
	50MHz – 950MHz available on special order	
Programmable Bandwidth:	Any 12MHz without alignment	
Enclosure:	Milled Aluminium	
Size:	102mm W x 130mm L x 45mm H	
Weight:	500gms	
Connectors:	RS232 Interface:	Male 9Way 'D'
	I.O. & Power	Female 9Way 'D'
	I2C Bus	RJ45
Antenna:	50 ohm BNC	
Approvals:	Products within the range have been tested to the following specifications. For further information contact the sales office.	
	European	ETS EN300-220 ETS EN300-113 ETS EN300-224
	CE:	ETS EN301-489
	Australian:	AS4268.2-1995
	USA:	FCC Part 90/15
	Canadian:	DOC
Power Requirements:	9.6 – 16VDC	
Programmable Channel Step:	5KHz or 6.25KHz	
Channel Spacing:	Programmable 12.5/20/25KHz	
Operating Temp.:	–30°C to +60°C	
Frequency Stability:	2ppm –25°C to +60°C (optional 1ppm)	
RF Output Power:	50mW – 5Watts programmable	
Max. Deviation:	± 7.5KHz max	
Adj. Channel Power:	Better than 70dB at 25KHz	
Spurious Emissions:	<200nW and 4nW in specified bands, as per IETS requirements	
Rise Time:	<5mS	

## Internal Encoder

Formats:	POCSAG 512, 1200 & 2400bps ERMES & FLEX under development
Optional Paging Formats:	2 tone, 5 Tone & 6 Tone.
Optional Data Format:	FFSK, V23, Bell202 up to 1200baud, 2400 baud using coherent 1200/2400Hz, GMSK at 4800 baud and 4 Level FSK at 9600 baud.

## Inputs

Serial:	5VTTL or RS232 with two programmable protocols. Custom protocols available on request	
2 Closing Contacts:	Each contact is programmable with frequency, power, pager ID/Group and 40 character message Expandable to 128 with ART I.O. expansion modules	
External Modulation:	Digital:	0 to + 12.5VDC
	Analogue:	600 ohm or 10K, 300mV to 5V P-P