

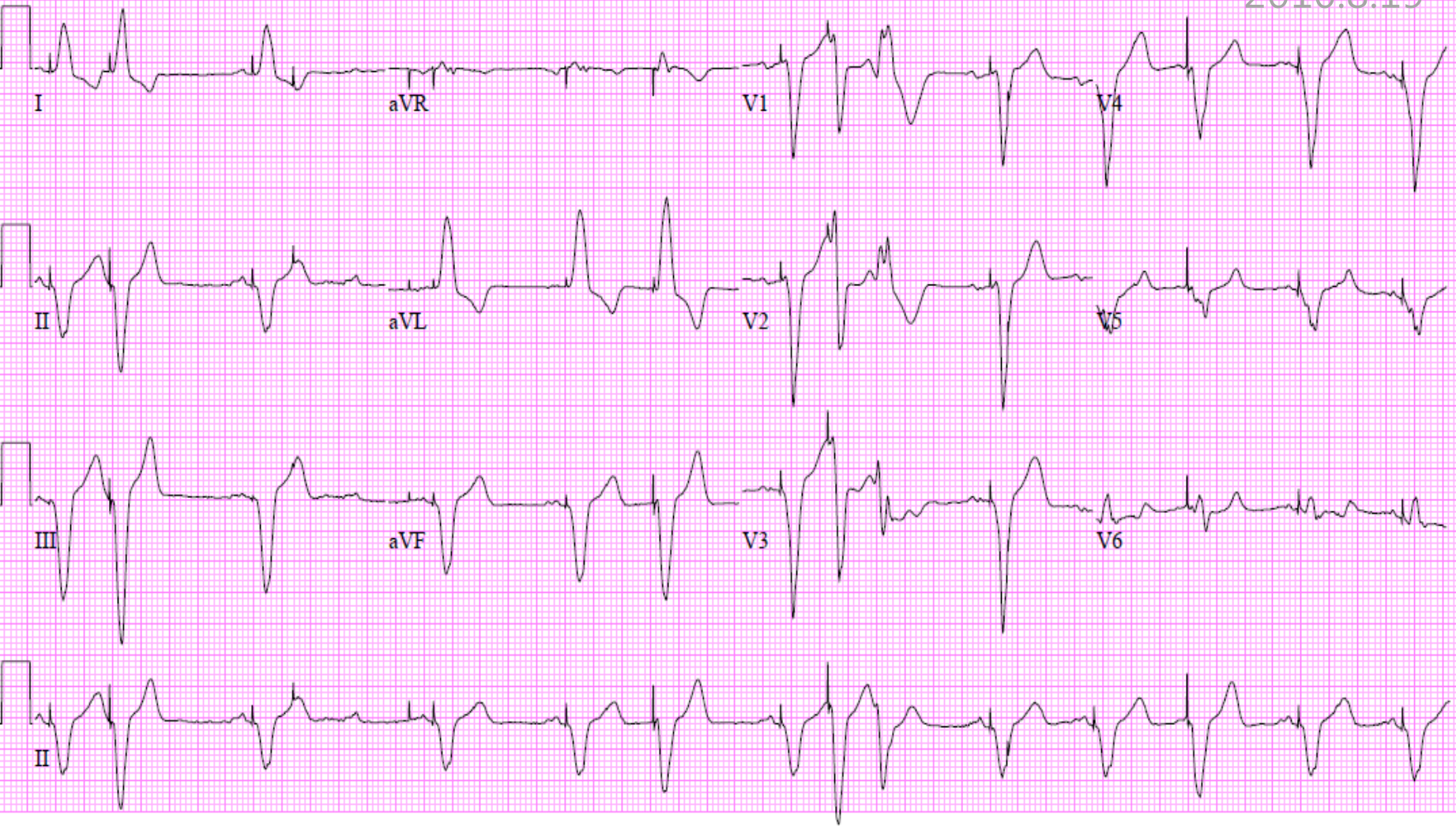
Interesting Case

서울아산병원
전기생리학검사실 김한나 간호사



76.M, CAVB, Endocardial pacemaker DDD 60bpm
C/C: 2~3일 전부터 어지럽고 가슴이 답답하다.

2010.8.19



Patient History

1992	Syncope d/t CAVB	Endocardial PPM implantation(DDD)
1994	PPM malfunction	PPM reimplantation(VDD)
1997	PPM pocket infection	Epicardial PPM implantation at the subxiphoid area(VVIR)
1998	PPM syndrome	New endocardial PPM implantation (Epicardial PPM –Intermedics dash-OVO mode change)
2008	Endocardial PPM ERI	PPM Generator change



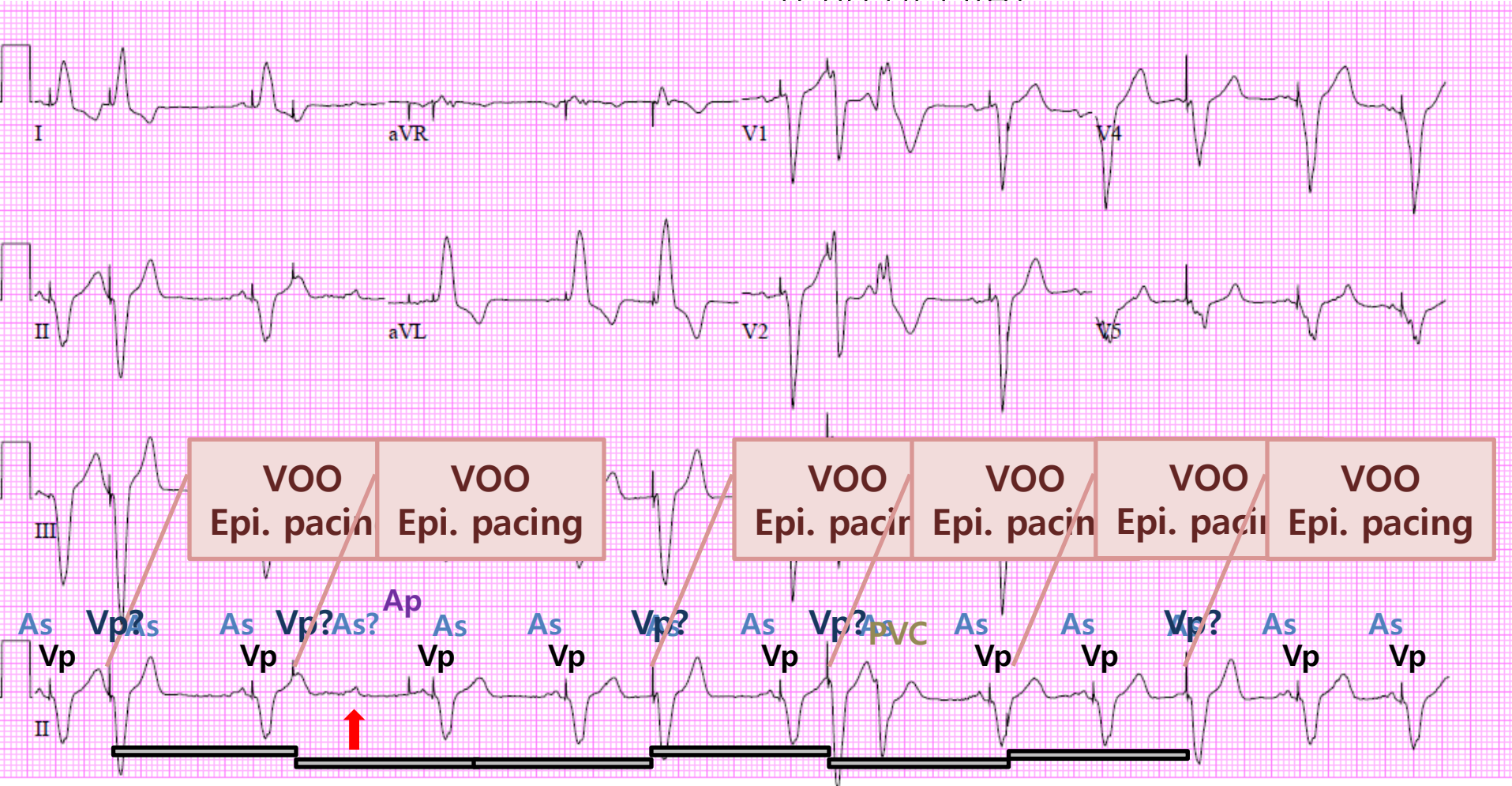
Pacemaker F/U Sheet

Symptoms		2~3일전부터 어지럽고, 가슴이 답답하다.	
Event, Battery Voltage		2.79V AsVp 71% ApVp 28%	
Self Rhythm		VVI 30bpm setting시 all pacing	
Atrial	P Wave (mV)	3.0	
	Threshold (V/ms)	1.5V at 0.4ms	
	Impedance (ohm)	255	
Ventricle		(RV)	(LV)
	R Wave (mV)	N/A	
	Threshold (V/ms)	1.0V at 0.4ms	
	Impedance (ohm)	471	



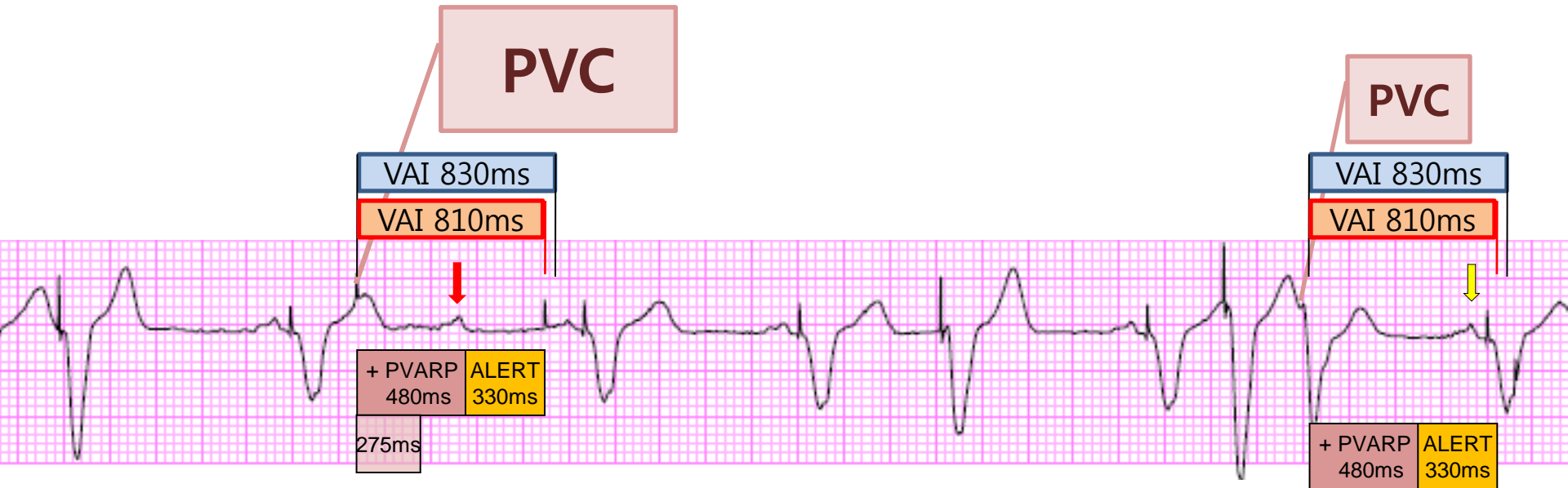
Interaction with EOL Epicardial PM

(End of Life)



As:atrial sensing, Ap:atrial pacing, Vp:ventricle pacing

PVC Options : +PVARP on PVC



DDD 60bpm
(Endocardial pacemaker)

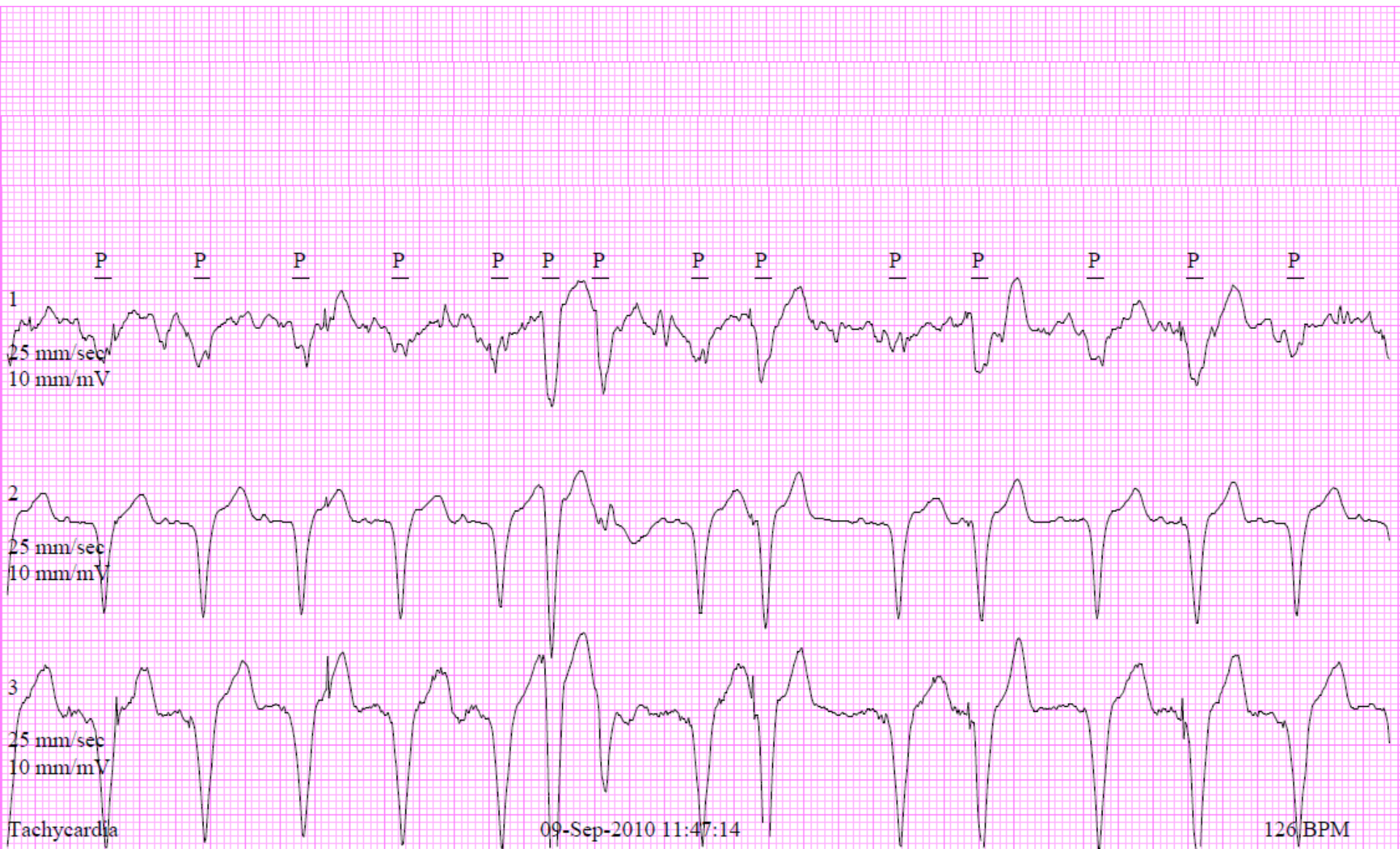
Base interval : 1000ms
Paced AV delay : 170ms
(VA interval : 830ms)

Sensed AV delay : 150ms

PVARP : 275ms

(Post Ventricular Atrial Refractory Period)

Holter



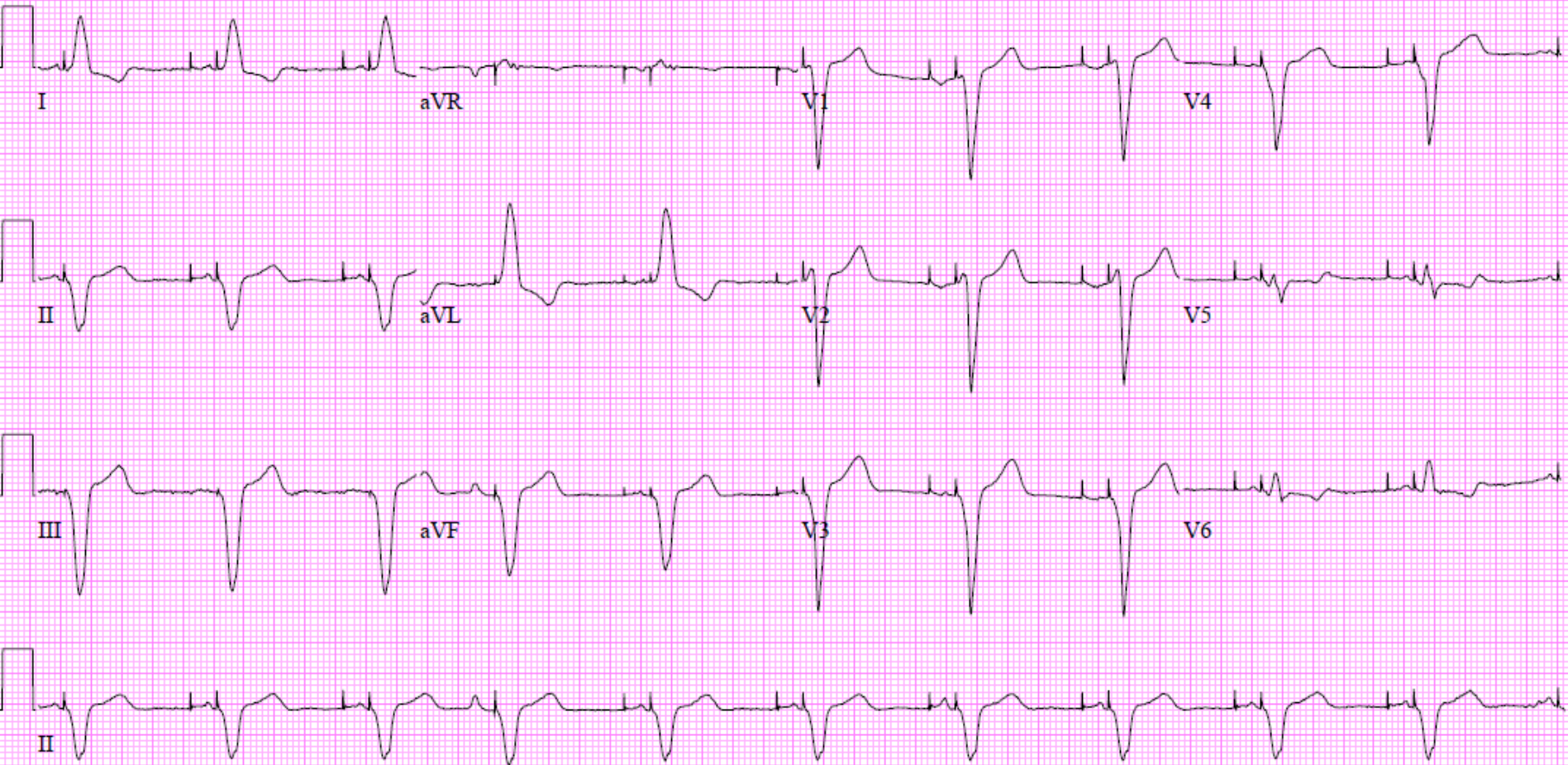
Patient History

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2008	Endocardial PPM ERI	PPM Generator change
2010	Epicardial interference (VOO)	epicardial pacemaker removal and wire cutting

Post OP

Referred by: 143W CV

Confirmed By: GI BYOUNG NAM



ERI/ERT

(Elective Replacement Indicator/Time)



ERI

(Elective Replacement Indicator)

Battery Voltage Status Impedance Magnet rate

SJM **Measured Data**

Date Last Programmed 15 Mar 2013 14:01

Magnet Rate **86.3** min⁻¹

Ventricular:

Pulse Amplitude 5.5 V

Pulse Current 10.8 mA

Pulse Energy 48.9 μJ

Pulse Charge 12 μC

Lead Impedance 535 Ω

Atrial:

Pulse Amplitude 4.9 V

Pulse Current 9.7 mA

Pulse Energy 39.2 μJ

Pulse Charge 10 μC

Lead Impedance 536 Ω

Battery Data (W.G. 9438 - nom. 0.95 Ah)

Voltage **2.55** V

Current 32 μA

Impedance **19.7** kΩ

Warning: The Elective Replacement Indicator has been reached.

Patient/Device Information

Pacemaker Model: Kappa KD903 PLC720915

Pacemaker Status: 04/08/13 1:25:28 PM

Estimated remaining longevity: Replace Pacer

Battery Status **Replace Pacer**

Voltage **2.57 V**

Current 12.23 μA

Impedance **7,863 ohms**

Medtronic

Battery Status

	Previous	Present	
Date of last test	08-FEB-2012		
Battery Status	GOOD	ERT	
Effective Magnet Rate	100	85	min-1
Longevity Remaining		<0.5	years

Date ERT Set 13-FEB-2012

BOL- Beginning of life
ERT- Elective Replacement Time
EOL- End of Life

Boston

Status

Patient name

Battery status **ERI 09/24/2011**

Implanted for: 7 Y. 1 Mo.

Expected ERI: 0 Y. 0 Mo.

Last follow-up: 09/24/11

Mode: DDD

Basic rate: 65 ppm

Biotronik

Medtronic Pacemaker

78years
Female

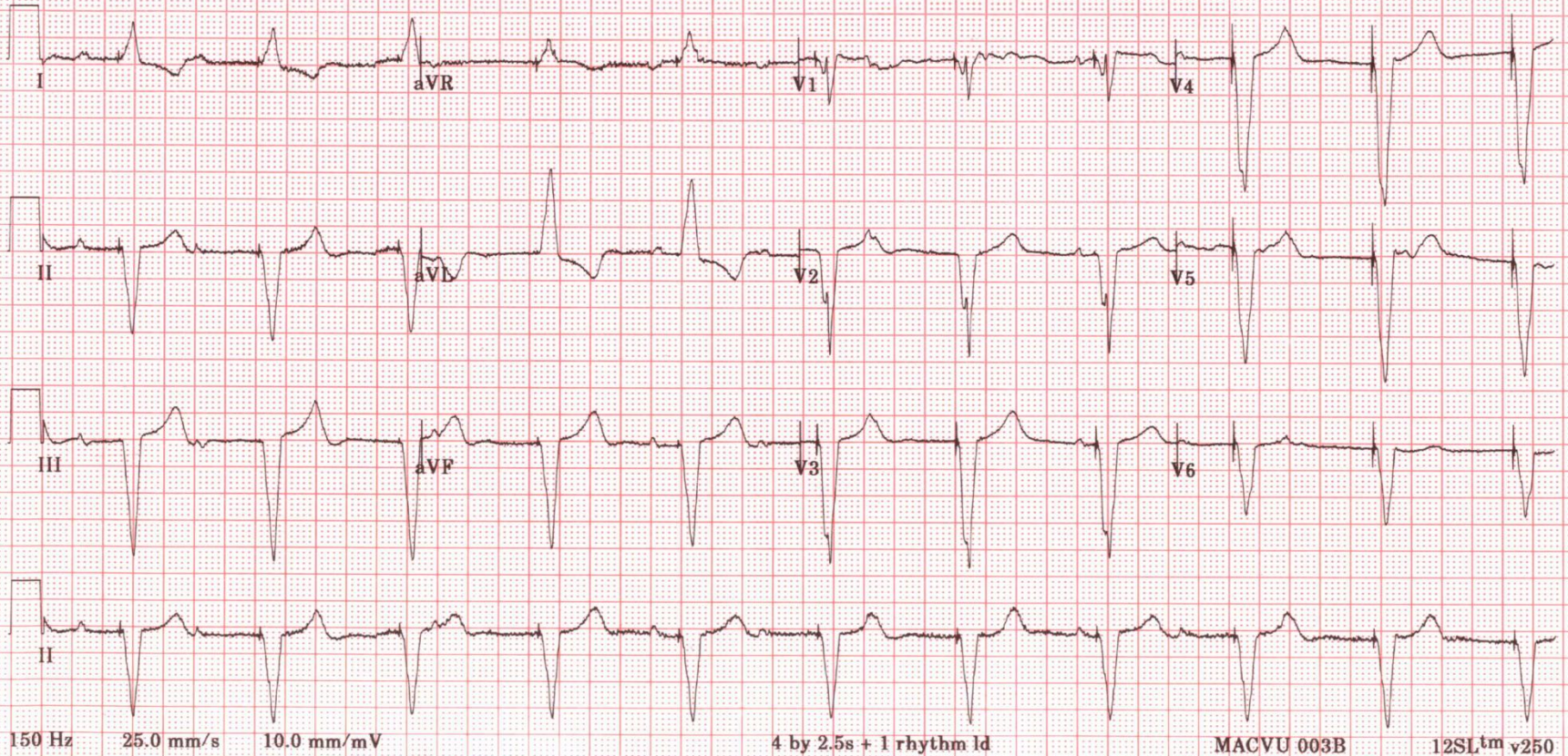
Vent. rate **65 bpm**
PR interval * ms
QRS duration 154 ms
QT/QTc 486/505 ms
P-R-T axes * -73 112

Electronic ventricular pacemaker

Technician:
Test ind:

Referred by:

ERI: SSI 65bpm
Magnet: SOO 65bpm
(BOL-beginning of life :85bpm)



SJM Pacemaker

58 yr
Female

Room:
Loc:118

Vent. rate
PR interval
QRS duration
QT/QTc
P-R-T axes

55 BF
184
86
432/413
58 60

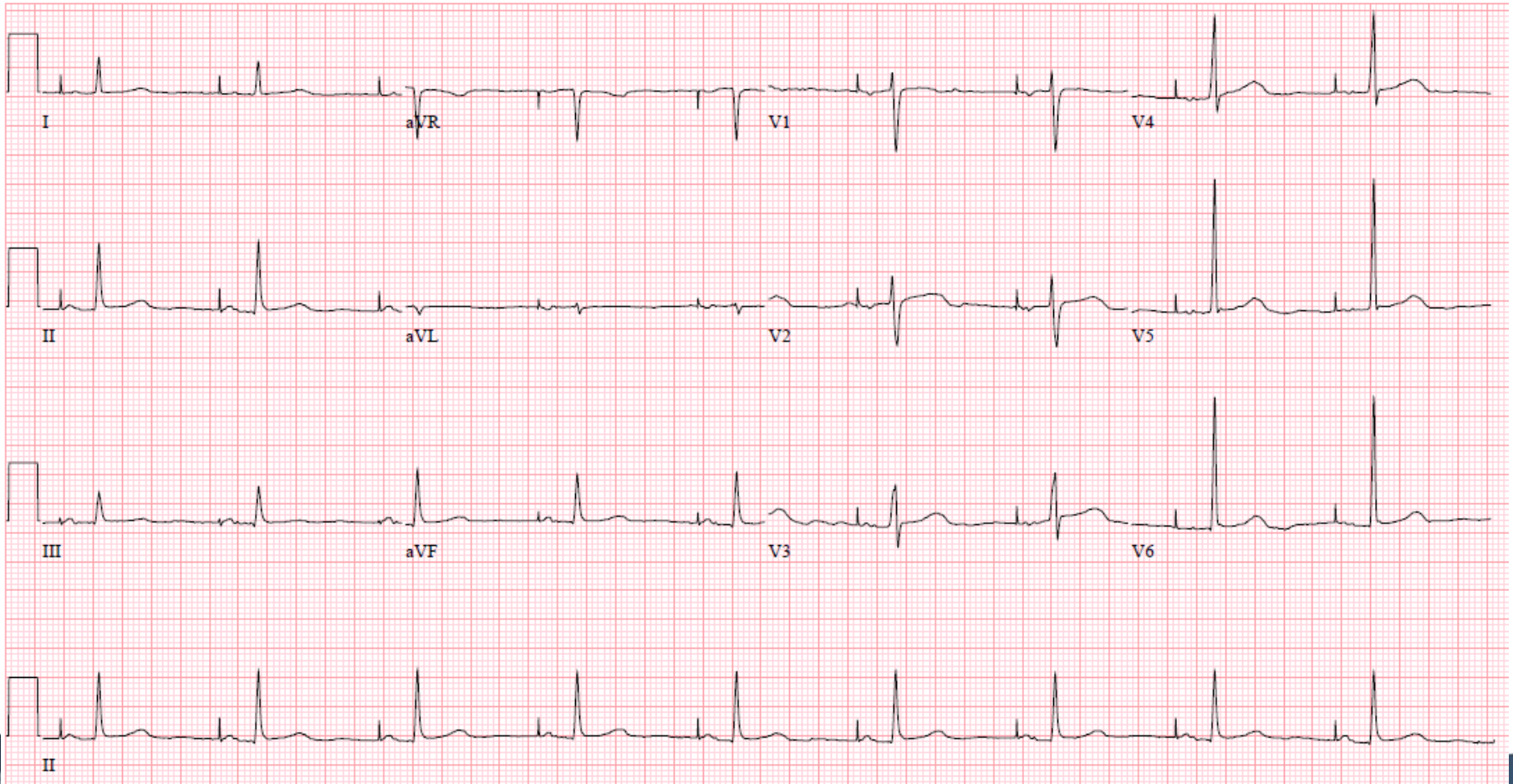
ERI: DDD/SSI Base rate interval +100ms

1000ms+100ms=1100ms(54.5bpm)

Magnet: DOO/SOO 86.3bpm

(BOL:100bpm)

Technician: KEY
Test ind:21485



Boston Scientific

80 yr
Male

Room:C1
Loc:6

Vent. rate	60 BPM
PR interval	286 ms
QRS duration	96 ms
QT/QTc	414/414 ms
P-R-T axes	103 101 -20

AV sequential or dual chamber electronic pacemaker
When compared with ECG of 01-SEP-2010 10:04
Vent. rate has

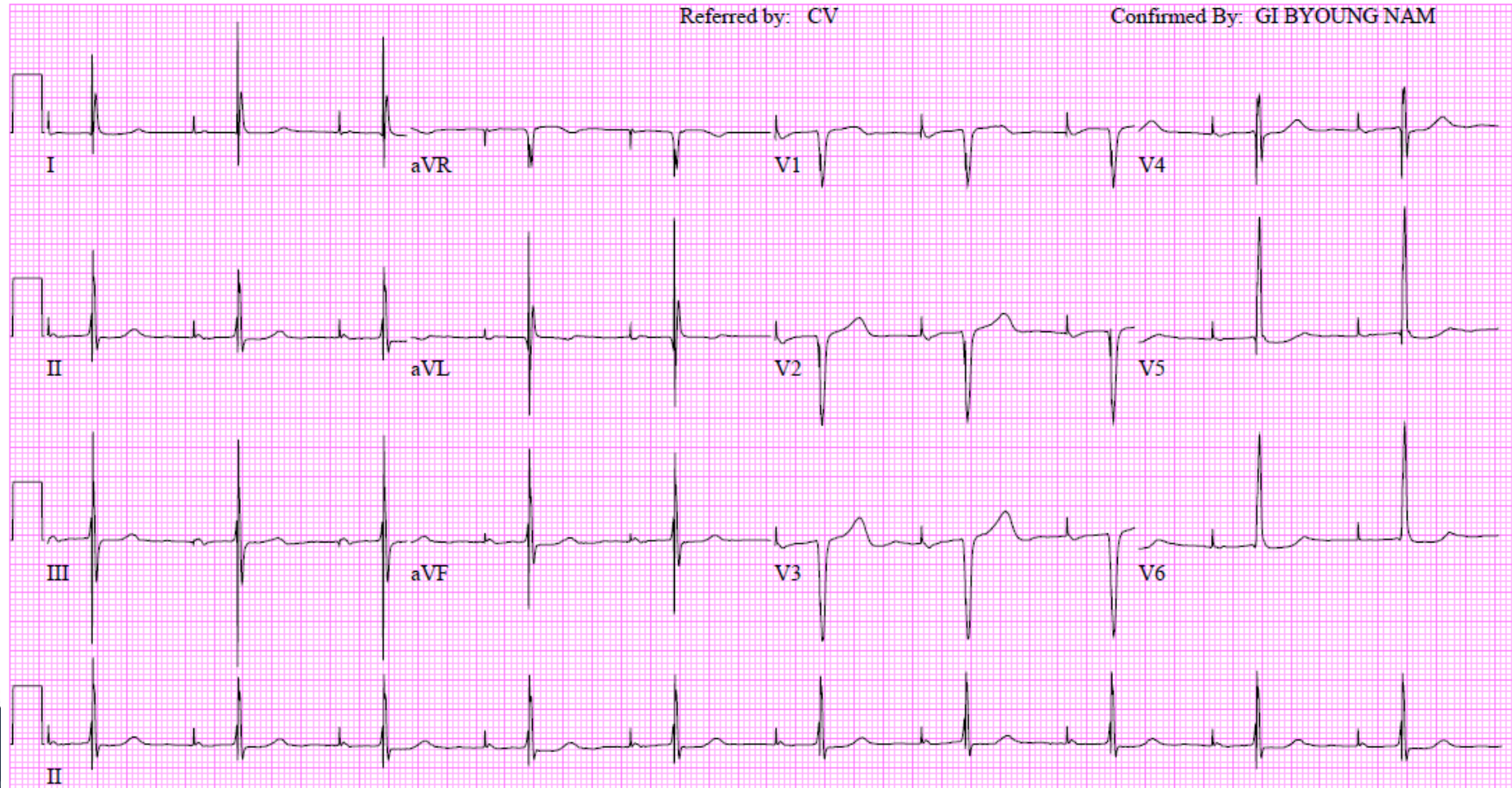
ERI: DDD/SSI

Magnet: DOO/SOO 85bpm
(BOL:100bpm)

Technician: PJA
Test ind:40859

Referred by: CV

Confirmed By: GI BYOUNG NAM



ERI

(Elective Replacement Indicator)

Mode change

Base rate change

Magnet rate down

Sensor OFF

Stops collecting diagnostic data

Stored EGMs are not available

Autocapture test OFF

기타 Special features OFF



EOL

(End of Life)

Mode change

Magnet rate down

Pacing polarity change

Output decreased



경청해 주셔서 감사합니다.



07/01/2013